QUALIFICATIONS FOR MARINE/COASTAL ENGINEERING SERVICES

RIVIERA BEACH MARINA

MARCH 24, 2021
Solicitation No. RFQ
1023-21-2

PREPARED FOR
City of Riviera Beach

PREPARED BY
Edgewater Resources, LLC

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REQUEST FOR QUALIFICATIONS
MARINE/COASTAL CONSULTING SERVICES FOR THE RIVIERA BEACH MARINA

Solicitation No RFQ. 1023-21-2
City of Riviera Beach
600 West Blue Heron Boulevard
Suite 140
Riviera Beach, Florida 33404

Submitted By
Edgewater Resources, LLC
2001 North Federal Highway
Suite G204
Pompano Beach, Florida 33062
edgewaterresources.com

Primary Contact
Ronald Schults, PE
Principal & Chairman
(269) 876-9300
rschults@edgewaterresources.com

EXECUTIVE SUMMARY

Edgewater is exceptionally qualified to provide Marine/Coastal Consulting Services for the City of Riviera Beach Marina. We have been intimately involved in this type of work and regularly apply our experience gained through the design and engineering of more than 400 marina/waterfront communities and destinations across the US and around the Globe. While Edgewater's projects range in scope and scale, our experience encompasses all key elements described in the City's Request for Qualifications (RFQ).

Lead by industry trailblazers and a new generation of award-winning talent, Edgewater is a leader in sustainable waterfront design, engineering and development services. We help communities build on their natural strengths to identify and implement projects that foster long term economic prosperity within a context of social, environmental, and economic sustainability. Offering a comprehensive design and development team specializing in marine engineering, coastal engineering, ecological sciences, planning, architecture, landscape architecture, civil engineering, survey, and finance procurement, our expertise covers every facet of feasibility, design, engineering and developmental services.

Our unique combined design and development experience allows us to approach projects from a panoptic point of view. Having developed, invested in, and financed complex waterfront projects, we understand risk and investment in today's financial markets and apply our firsthand experience in project appraisal, finance, and marina operations into every project we touch. These foundational principles guide every aspect of our work, allowing us to go beyond imagining what a project could be, to developing plans that can actually be financed and built, resulting in projects that achieve measurable economic benefits for the larger community. From the super yacht marinas to initmate community waterfronts, we thrive on delivering beautiful and lasting solutions to every corner of the world.

Ronald Schults, PE
Principal
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Edgewater resources

March 24, 2021

LETTER OF TRANSMITTAL

Althea Pemsel, MS, CPSM, Director of Procurement
Office of the City Clerk
City of Riviera Beach
600 West Blue Heron Boulevard, Suite #140
Riviera Beach, Florida 33404

via email: apemsel@rivierabeach.org

Dear Ms. Pemsel:

Edgewater Resources, LLC (Edgewater) is thrilled for this opportunity to submit our qualifications in response the City's Request for Qualifications (RFQ No. 1023-21-2) for Marine/Coastal Engineering Consulting Services for the Riviera Beach Marina. We fully understand that the City is requesting the services of a professional registered marine/coastal engineer for a continuing services contract. Our team is FULLY committed and capable of providing these services to the City to maintain its vibrant coastal community and ensure the City remains a major hub for international trade and regional commerce.

We have fully reviewed the requirements of the RFQ and attest that the information contained herein is complete and accurate. Additionally, we grant the City and its representatives the authorization to contact any of Edgewater's previous clients for the purpose of obtaining an evaluation of our performance. These client references have been included in this submittal per request.

We are confident that the Edgewater team presented in this RFQ is not only qualified, but equally excited to work with the City in ensuring its Marina and Waterfront will continue to thrive. Edgewater is an award-winning national design, planning, and engineering firm that has called Florida home for eight years. As our name implies, we only work in communities at the water's edge, and we understand what makes waterfront communities so special and how to preserve and enhance them.

The primary contact for this submittal is Mr. Ronald Schults, PE, Principal (269-876-9300), and Mike Kenny, who will serve as Co-Project Manager (954-400-3074).

We look forward to the opportunity to work with the City of Riviera Beach. At Edgewater, we are passionate about maintaining and enhancing waterfront communities and the environment around them.

Sincerely,
EDGEWATER RESOURCES, LLC

Ronald E. Schults, PE
Principal / Chairman

PROFILE OF FIRM

PROFILE OF FIRM

Edgewater Resources was founded with the goal of enhancing communities and their waterfronts, with a focus on planning, design, and engineering solutions based in economic reality. We consider the built environment to be our final deliverable, with the work not complete until the project is open to the community. Our core skill set goes beyond traditional design, planning, and engineering expertise to include development finance and economics based on real world experience to help clients take projects from the drawing board and see them through implementation.

Our team includes licensed landscape architects, planners, architects, engineers, geologist, surveyors, and appraisers providing professional services including:

- Marina Planning, Design, Engineering, Operations, and Finance
- Coastal Engineering, Wave Studies, Geotechnical Engineering, Storm Surge/Sea Level Rise Modeling
- Landscape Architecture, Planning, and Public Process
- Development, Market Studies, Finance, Economics, and Grant Funding
- Architecture and Urban Design
- Civil, Structural, and Marine Engineering
- Regulatory, Permitting, Assessments, and Mitigation
- Professional Land and ASCM Certified Hydrographic Surveying

We value the importance of partnering with certified disadvantaged businesses, and frequently team with Small/Minority/Disadvantaged and Women-Owned businesses on projects. We have established relationships with several firms and have a history of regularly working with them. Minority participation in our work is critical and we understand the importance of hiring and working with WBE/

DBE/MBE's. Edgewater employs 27 professionals, 13 of which are women. The below list illustrates the WBE/DBE/MBE's we have previously and are currently partnering with.

- Prudent Engineering
- Environmental Design & Research
- Brooke Architecture, Inc.
- Urban Works
- Ross Barney Architects
- Site Design Group, Ltd.
- RM Chin Associates
- The Chappell Group, Inc.

Edgewater 's specific mission is to assist communities in enhancing their public spaces and waterfronts. We have collaborated with many communities to create thoughtfully designed and sustainable marinas, resorts, waterfront parks and natural spaces.

We have provided design services ranging from concept visioning through implementation, and equally important, financial feasibility and funding strategies for projects in communities across Florida and the Caribbean. We believe that it is critical to work with the community to create a project vision that is both aspirational and achievable, which means that we work hard to engage the community in the process, so they are fully invested in the design of the project, and then utilize our experience in development finance to ensure we have a viable strategy to fund the implementation of the vision.

Edgewater has received numerous awards, both individual employees and as firm. These are illustrated on team resumes which we have included in the Appendix.

Incorporated in Michigan as an LLC in 2010, Edgewater began its presence in Florida in 2013, formalizing its office in Pompano Beach in 2016. Ronald E. Schults, PE, Principal of Edgewater, has over 42 years of extensive marina and boating experience throughout Florida, the US, and the world. Greg Weykamp, ASLA, LEED AP is President of Edgewater and based in Michigan. Additionally, Edgewater added a third office in Wisconsin, led by Jack Cox, PE, D.CE, D.NE, D.PE.

OFFICE LOCATIONS:

FLORIDA
2001 North Federal Highway
Suite G204
Pompano Beach, FL 33062
Office: 954-400-1401

MICHIGAN
518 Broad Street
Suite 200
St. Joseph, Michigan 49085
Office: 269-932-4502

WISCONSIN
434 S Yellowstone Drive
Suite 203
Madison, WI 53719
Office: 608-716-3128

QUALIFICATIONS OF FIRM'S TEAM

QUALIFICATIONS OF FIRM'S TEAM

Edgewater's proposed staff is briefly described below, with a matrix illustrating specific areas of expertise and what role each will perform for this contract at the end of this section. Additionally, we have included resumes for each team member in the Appendix.

Ronald Schults, P.E. - Principal

Ron is recognized as one of the most notable waterfront, shoreline, and marina development experts in the world, and often speaks on the topic at national and international conferences. His combined passion for community development, coastal engineering, structural engineering, and sailing, inspired him to focus on projects that help preserve our waterways and sustain the economic growth and vitality of waterfront communities across the United States and around the world. He has personally developed and financed multiple successful waterfront projects valued in excess of $150 million and applies that real-world experience on behalf of clients and community partners who are working to create sustainable and responsible waterfront development projects.

Michael Meyers, PLA - Co-Project Manager

Mike has over twenty five years of experience in the planning and design of the public realm, with an emphasis on implementation of sustainable built landscapes, urban waterfront environments, and high-end resort planning and design. His project experience spans waterfront parks, marinas, master planned communities, urban revitalization, streetscapes, parks and recreation facilities, private luxury homes and resort developments. Prior to his role as Director of Landscape Architecture for Edgewater, Mike spent 18 years with EDSA in Fort Lauderdale as Vice President where he gained notable expertise and experience in luxury resort design in Florida, the Caribbean and beyond.

Michael Kenny, EIT - Co-Project Manager

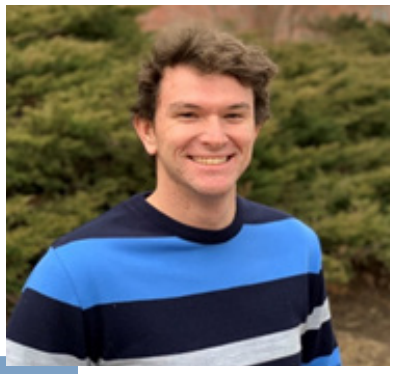
Mike's background includes experience with CAD and GIS, HEC – RAS, HEC – HMS, MATLAB, and Project Management. Currently, Mike's duties at Edgewater include marine and water resources engineering, site design, permitting, bulkhead inspections, cost estimations, construction administration and surveying. His specialties include marine, geotechnical, and water resources engineering consulting, with additional background in mining engineering and project management. He has extensive experience assisting our Professional Engineers with project management, construction documents, construction administration, modeling, feasibility analysis, surveying, presentation, and technical writing. Mike understands the importance of environmental awareness, sustainability, and economics. He is currently working on a variety of waterfront projects that include marina design, shoreline protection, coastal studies, wave climate analysis, project management, and construction, administration.

Jack Cox, PE, D.CE, D.PE, D.NE - QA/QC

Jack is internationally recognized for his credentials in research, engineering, and design of projects involving nearshore hydrodynamics, harbor tranquility, breakwaters, fixed and floating marine structures, dredge material disposal, shore protection, port planning, marina design, and risk analysis. He directs the planning and design of large and complex waterfront and harbor works projects around the world. Jack is an award-winning lecturer on the topic of coastal engineering. His 45+ years of experience in the marine engineering field spans a full range, from ecologically sensitive planning through final design and construction. He has authored more than fifty coastal and marina related technical publications and is an inaugural Diplomate in the Academy of Coastal, Ocean, Port and Navigation Engineers with specialties in coastal, port and navigation engineering.

Colin Hassenger, PE - Project Engineer

Colin has an array of experience ranging from survey field work to shoreline protection design, marina design and construction oversight. He joined Edgewater in 2011 and has since been extensively involved in numerous marina and waterfront projects. Mr. Hassenger has led the design and implementation of numerous waterfront projects ranging from private residential shorelines to 100+ vessel municipal marinas.



Nick Stefani, PE - Geotechnical Engineer

Nick is the section leader for Coastal and Geotechnical Engineering for Edgewater. He is responsible for design, calculations, modeling, and Charsand Quality Control of Edgewater's various waterfront projects. Prior to joining Edgewater, Nick worked on variety of geotechnical engineering projects including field work and design support at the Racine Hydroelectric dam in Ohio and at the Prairie du Sac dam in Wisconsin.

Edgewater, nor any of its principals/employees, have any current or pending disciplinary actions by State regulatory or professional organizations.

FIRM QUALIFICATIONS					
TEAM MEMBER	PROJECT ROLE	YEARS OF PROFESSIONAL EXPERIENCE	EDUCATION	% TIME	LICENSURE
Ronald Schults, PE	Principal	42	BS. Civil Engineering	20%	PE: FL, IL, MI, NY, NC, DC, TX, AL, BELIZE
Jack Cox, PE, D. CE, D.PE, D.NE	Principal	44	BS. Engineering Science MS Engineering Science	15%	PE: FL, AK, DE, IL, IN, LA, MD, MS, NY, NJ, OH, RI, SC, WA, WI
Mike Meyers, PLA	Co-Project Manager	26	Bachelor of Landscape Architecture	35%	LA: FL, CO, MI
Mike Kenny, EIT	Co-Project Manager	5	BS. Civil Engineering	100%	
Colin Hassenger, PE	Project Engineer	11	BS. Civil Engineering	50%	PE: FL, ID, IN, MI, NY, OH, WI
Nick Stephani, PE	Geotechnical Engineer	2	BS. Geotechnical Eng	50%	PE: MI
HONORS					
Ronald Schults, PE	Great Lakes Sea Grant Network "Great, Lakes Outreach Programming Award," Sustainable Small Harbors Project, 2013 President's Award/American Society2013 President's Award, American Society of Landscape Architects Illinois Chapter, 31st Street Harbor, Chicago, IL / ISS Fabien Cousteau Blue Award 31st/ AIA Chicago SustainABILITY Leadership Merit Award, 2012, 31st Street Harbor/First Place, Engineering News Record Midwest "Best Projects" 2012, 31st Street Harbor/2006 – Ernst & Young Award, Michigan Entrepreneur of the Year/2005 – Ernst & Young Nominee, Michigan Entrenpreneur of the Year/1991 – Engineer of the Year, Michigan Society of Professional Engineers/1988 – Business Expansion Award, Chamber of Commerce/1998 – Employment Gold Award, Chamber of Commerce				
Jack Cox, PE, D. CE, D.PE, D.NE	Adjunct Professor of Practice in The Department of Civil and Environmental Engineering, University of Wisconsin/ Assistant Director for The Docks and Marinas Program, Department of Engineering Professional Development, University of Wisconsin Board of Trustees of The Academy of Coastal, Ocean, Port and Navigation Engineers (Acopne) / Trustee for Navigation and Coastal Engineering Inaugural Diplomate in The Fields of Coastal, Port and Navigation Engineering, Acopne/Asce US Representative and Deputy Chairman for The Pianc Recreational Boating Commission - 18 Years Tsunami Technical Advisory Board/University of Washington Special Presidential License Recipient to Practice Marine Engineering – Cyprus Patent Holder for "Quay Wall with Absorption Blocks and Interconnecting Flow Paths" Patent No.: US 9,896,814 B2/ Past Chairman for The Asce Coastal Practice and Cold Regions Engineering Technical Committees/Principal Author and Lecturer for The Asce Manual 50 for Planning and Design of Small Craft Harbors and The Pianc Marina Design Guidelines Manual and The International Marina Designer Training Program/Principal Designer for The First Hurricane Scale Living Shoreline Protection Scheme at The Ft Pierce Fl Marina, which Received The 2016 Copri Project Excellence Award/Pioneered the use of Tandem Breakwaters and Floating Wave Attenuators to Extend Functionality of Wave Protection into Otherwise Unacceptable Ranges Author of Fema Wave Overtopping and Propagation Theory and Methodology.				
Mike Meyers, PLA	Valorous Unit Award/Combat Infantry Award/Army Commendation Medal/Army Achievement Medal/ Humanitarian Service Medal/National Defense Medal/Army Service Ribbon				

EXPERIENCE OF THE FIRM

EXPERIENCE OF THE FIRM

Edgewater has unique experience in marina/waterfront projects throughout Florida. More specifically, Ron Schults, PE is an avid boater and fisherman with experience on the Intracoastal Waterway (ICW) throughout Florida. Additionally, Edgewater personnel are active boaters throughout the area including all other ICW, port, and harbor locations, both in the Florida Gulf and Atlantic Ocean. Edgewater was founded as a marina/waterfront specialty firm and we understand the economic reality of developing and maintaining quality waterfront projects. As requested, we have included at the end of this section a project matrix illustrating Edgewater's experience relevant to this project. Brief descriptions of these projects are summarized below:

Melbourne Riverwalk Marina – Melbourne, Florida

The Melbourne Riverwalk Marina Project will rejuvenate a waterfront property that was the home of two historical marinas that were destroyed by storms in 2005 and 2006. The two marinas were in a previously dredged marina basin. The basin was protected by a wave fence and the uplands were protected by a steel sheet pile seawall. Edgewater's fieldwork consisted of conducting several above and below water surveys including bathymetric, topographic, marine resource, and structural assessment of the existing seawall. Edgewater conducted a FEMA flood code compliance assessment, environmental due diligence for permitting the marine structures and identified potential grant funding opportunities for the project. These assessments were used by Edgewater to develop a comprehensive Marina Feasibility and Master Plan to evaluate future marina and waterfront development opportunities to identify the best use of the site along with estimated project costs. The final plans includes a 220 slip marina, 150 room hotel with swimming pool and other amenities, 2 restaurants, coffee shop/retail, and related infrastructure to support this program.

Edgewater prepared several conceptual designs of the marina configuration with various shoreline protection measures including living breakwaters (spoil islands stabilized with armor stone and populated with wetland vegetation, mangrove, and oyster reefs), construction of a new bulkhead and design of a riprap revetment to stabilize the existing bulkhead. Edgewater conducted pre-application meetings with the Corps and FDEP, based on those discussions a final design option was selected and environmental permit applications have been submitted. FDEP and Corps permit applications are currently being processed to authorize shoreline stabilization and marina replacement. Grant applications are also being prepared to assist with project funding. Edgewater is also collaborating with the City and county for the future phase of the project that will connect the project to the north and the south via a public waterfront boardwalk. FDEP permits were issued February 2021 and construction is planned to begin late 2021.

SweetBay Marina Village Master Plan – Panama City, Florida

Where nature meets community, SweetBay is nestled alongside miles of bayfront shoreline in northwest Florida. Edgewater welcomed the opportunity to work with St. Andrews Bay Land Company on the next phase of their highly successful SweetBay development. Using the workshop process, Edgewater Resources brought the existing development and design team together to discuss the existing vision of the development, and how to best bring this phase of development to reality.

One of the many goals for the project was to create a well-integrated marina and marina village master plan that held to the principals of the existing master plan, allowing SweetBay residents to move through public green corridors and coastal pathways by walking or using alternate modes of transportation to circulate through or to arrive at the multiple marina village amenities.

The program for this forty acre phase includes 100 marina slips within an eight acre basin, a 350 drystack facility, mixed-use commercial with food and beverage, a sixty-unit boutique hotel, 400 condominium and apartment units, beach/sailing/shore club amenities and over 7 acres of public green space and trails. The project is in final permitting with construction planned Fall 2021.

Billfish Bay Marina Resort Development – Orange Beach, Alabama

The Billfish Bay Marina Resort will turn the last undeveloped waterfront parcel on Terry Cove in Orange Beach, Alabama into a bustling waterfront destination. This upscale fishing and resort community located along the Gulf of Mexico, will be greatly enhanced with the mixed used marina resort development currently under design.

Envisioned to be highly amenitized, this project includes a fully automated state-of-the-art 900 boat dry stack marina facility, 145 wet slip marina, 50 luxury fishing villas, over 75 luxury condominiums, beach/pool club, multi-story restaurant, marina ships store, and over 10,000 sf of marine-centric commercial/retail space including boat sales, waterside concessions, floating tiki bar, and a generous 20' wide public promenade. A BIG grant application has been submitted for this project which allocates a percentage of the marina slips to transient boaters to providing greater access to the waterfront for both community members and visitors alike. Construction is planned to begin Summer/Fall 2021. Edgewater has a lead role in all aspects of this project from planning, project management, feasibility study, and entitlements.

Las Olas Marina Redevelopment - Fort Lauderdale, Florida

The City of Fort Lauderdale, the Yachting Capital of the World, issued an RFP for the Expansion and Enhancement of the Las Olas Marina. In partnership with Suntex Marinas, Edgewater Resources is leading the design and engineering of the redeveloped Las Olas Marina soon to become one of Suntex Marinas newest locations in its growing portfolio of marina destinations nationwide.

The redevelopment includes a $25 Million investment that will enhance the waterfront to serve local residents, achieve world-class standards to attract and serve the finest mega yachts, complement and help implement the goals of the Central Beach Master Plan and provide expanded accommodations for the Fort Lauderdale International Boat Show. The most innovative sustainable design features will be employed to help the City of Fort Lauderdale achieve the goals outlined in its Sustainability Action Plan. The marina is being designed for small vessels and Mega Yachts alike and will expand available dockage from 3,430 linear feet to a total of 5,540 linear feet with a planned completion of November 2018.

Fort Pierce Port Engineering

Edgewater provided preliminary engineering and feasibility study analysis to review the physical and economic viability of constructing a megayacht marina and refit facility on 20 acres at the Port of Ft. Pierce. The study evaluated marina slips for up to 40 vessels ranging in size from 200 to 400 feet, in addition to a shipyard containing a 900 ton travel-lift, future 7,000 ton synchro-lift, and related buildings and support facilities for a state-of-the-art megayacht refit/crew facility.

More recently, the Edgewater Team was selected to provide professional consulting, planning, and port engineering consulting services to St. Lucie County. The scope of work includes evaluation of options for the operation and development of the former Indian River terminal at the Port of Ft. Pierce. The Team conducted a feasibility study to identify a project that will operate and develop a world-class facility on the terminal property. The goal is to create well-paying jobs, not only on the Terminal itself, but through the growth of existing businesses and the creation of new ones within the community. The selected project will create a wave of economic activity throughout the region.

The Team will evaluate the potential benefits of developing a megayacht commercial marine facility focusing on the maintenance, repair, and refit of large recreational vessels with wet slips, dry space, and equipment to lift vessels on land for servicing. The multi-purpose Terminal will have the capability of handling cargo, including that generated by or associated with refit operations, as well as vessels shipped from distant locations. Edgewater partnered with Atkins Engineering on this assignment.

Sarasota Bayfront Waterfront Redevelopment Project

Edgewater was retained by the Sarasota Bayfront Planning Organization and Agency Landscape & Planning to support the redevelopment of the Sarasota Bayfront area into an iconic public cultural, ecological, and educational destination. Edgewater conducted bathymetric, topographic, marine resource, and mangrove surveys, and is providing environmental consulting, design coordination, public outreach, and environmental permitting services to The Bay Sarasota. This $100M effort will redevelop 53 acres of City-owned property from the Centennial Boat Ramp south to the Van Wezel Performing Arts Hall and provide the public with opportunities to interact with Sarasota Bay. Edgewater conducted a marine resource assessment of 43 acres of submerged lands within Sarasota Bay in 2018 and a refined marine resource survey of the 2-acre Phase I Project marine area in 2019. Edgewater also conducted a mangrove

and exotic vegetation mapping survey and researched and prioritized eight applicable grants to assist with funding the Project.

Edgewater was retained by Agency Landscape & Planning to participate in several community workshops and environmental design discussions towards the development of the Phase I design of the Bay Park Redevelopment Project. Phase I Bay Park consists of 10 acres south of the Van Wezel Performing Arts Hall. The first phase of the project intends to restore and improve water quality within the mangrove bayou, improve accessibility to the land and water, and create resilient shorelines. Edgewater's surveys and consulting input contributed to the current design of a spiral sunset boardwalk pedestrian pier that extends into the Bay, creation of living shoreline with ecological restoration components (e.g. oyster reefs, reef balls, mini reefs, clam seeding), stormwater improvements to improve water quality of the Bay, dredging of an existing mangrove bayou creek, mangrove trimming and windowing, removal of exotic species, planting of native wetland and hammock species, construction of a mangrove/hammock boardwalk with outlooks onto the mangrove bayou, re-design of a kayak dock, and creation of a public lawn for public events and gathering with restrooms and parking.

Edgewater presented the results of the physical and biological surveys and project design of the Phase I project to the U.S. Army Corps of Engineers (Corps), Florida Department of Environmental Protection (FDEP), and the Southwest Florida Water Management District (SWFWMD) during pre-application meetings and is currently overseeing the permit application process to secure the Corps Individual Permit, SWFWMD Environmental Resource Permit for environmental and surface water management aspects of the project, and the submerged lands authorization. Edgewater is also preparing several grant applications to secure additional funding for the project.

Fort Pierce Marina Reconstruction

In 2004, the Fort Pierce marina was totally devastated by a series of hurricanes, leveling the old panel style breakwater and washing away all the docks. To address the joint needs for robust wave protection while sustaining a critical biological habitat, a new approach was devised that would both shelter the marina while concurrently providing a sustainable and resilient solution that more closely emulates nature. The plan was to construct an artificial island archipelago system as an alternative to a conventional breakwater. Rather than hard structural features, the strategy for erosion control and island stabilization employed beach strands, headland-pocket beaches and artificial dunes sized and shaped to meet FEMA dune erosion stability requirements.

The island geometries and orientation were formulated to control and direct reversing tidal currents through the marina to improve navigational and berthing safety inside the marina. The alignment also controls sedimentation movement and patterns around the facility. Computer simulations were first used to determine the preliminary shape and positioning of the islands for training the tidal flow. A three-dimensional, movable bed physical model was then used to examine the erodability of the island plan and further refine island shape and placement in both simulated waves and currents. The island scheme was designed for functional survival in the 100-year hurricane event.

Through the physical modeling, a proper positioning of the rock island archipelago extending to the north of the main breakwater island was established to protect the approach to the marina and provide wave sheltering across the less exposed fetches. These islands were specifically designed to appear to be free form in shape, while in reality, they were carefully configured to both trap incoming waves and act as flow guide structures to redirect the strong tidal currents and associated sedimentation.

The island breakwater plan for Fort Pierce marina is the first opportunity to demonstrate that permanent engineering structures can be designed to incorporate natural and valuable habitat features while adequately performing the primary mission of wave protection to a marina. The project won the 2016 ASCE COPRI award for design excellence.

Bass Pro Marina & Facility Upgrades

This project is a community waterfront project including rehabilitation of the existing commercial dock and expansion and raising existing restaurant structures to appropriate tidal waters. The Bass Pro Shops Marina had silted in over the years, rendering some slips unusable. Edgewater conducted a benthic survey of the marina and identified areas between the mangrove shoreline and dense seagrasses that could be dredged. Permit applications were prepared and processed, authorizing maintenance dredging between the environmentally sensitive areas. Edgewater was contracted to design and permit replacement bulkheads, revetments, and docks throughout the facility. Structural design included an increase in elevation to account for sea level rise anticipated within the design life of the new structures. Permit applications were prepared and processed, engineering design was completed, a contractor has been selected, and the project is pending issuance of Village permits to proceed.

Cordova Boat Club

The Cordova Boat Club Project will be the first fully automated dry stack boat storage facility open to the public. Located on Fort Lauderdale's 16th street canal, the Club includes over 240 dry slips capable of holding vessels up to 50 feet in length, with an additional 20 wet slips that serve as a queuing area for boaters. This state-of-the-art facility will offer vessel storage and provisioning, marina fuel, pump-out, and shore power service that is equipped with a marina guard protection system to comply with national best practices. The project requires demolition of an existing building, replacement of the existing seawall, installation of a new floating dock system, and construction of the new storage facility. The boater services amenities will include restrooms, a lounge area, storage lockers, a fish cleaning station, and viewing areas for boaters to observe the automated crane system operating. Edgewater Resources was retained by F3 Marinas to provide marine and civil engineering design, landscape architecture Services, and direct the permitting & approvals process for the project.

Town of Palm Beach Town Docks

The Town of Palm Beach, Florida is a fully developed community, world-renowned for its beauty, quality of life and small-town character. The Town serves a full-time resident population of approximately 9,700 plus an estimated 20,000 additional seasonal residents, offering a wide range of recreational activities, including the only public marina on the island of Palm Beach. The "Town Docks" have been providing berthing for power and sail yachts up to 260 feet in length since the docks were first constructed in the 1940s. With updates and expansions between 1993 and 1998, the current project is expanding the footprint of the Town Docks, to provide deeper drafts and larger slips to accommodate the growing demand for larger yachts. The project also involves replacement of the shoreline stabilization and upgrades to the upland civil infrastructure.

Edgewater provided environmental and regulatory permitting support for the project, conducting a benthic survey and preparing a field report. Pre-application meetings were held with the FDEP and USACE to solicit feedback that was incorporated into the permit application packages. Edgewater prepared comprehensive permit application packages requesting authorizing dredging and marina expansion and responded to Requests for Additional Information in support of project permitting resulting in issuance of the FDEP and Corps permits, as well as a lease modification to include authorization of overwater structures and a public easement.

Edgewater also provided marine structure, site civil, and landscape architecture services for the Town Docks project. Edgewater designed the pile supported platforms for the two over-water building replacements. Site civil services provided for the project included extension of the water main, upgrading of the upland sanitary sewer facilities (lift stations), improvement of the waste handling and recycling facility, resurfacing the parking lot, and providing ADA accessible ramps to the new docks. Edgewater developed landscape plans to improve site aesthetics along the dock access ramps and the waterfront promenade. The project is currently out to bid, and Edgewater is under contract to provide daily on-site construction observation services for the duration of construction.

As requested, the we have included a project experience matrix on the following page. For additional project information, we have also included a Marina/Waterfront project experience spreadsheet in the Appendix.

EXPERIENCE OF THE FIRM - RELEVANT PROJECTS							
CLIENT	PROJECT DESCRIPTION	COMPLETED CONSTRUCTION COST	OWNERS CONTACT	SCOPE FIRM PROVIDED	CONTRACT AMOUNT	LENGTH OF CONTRACT	COMPLETED ON TIME/WITHIN BUDGET
Riverwalk Marina Partners	Mixed Use Marina/Waterfront Development	Summer 2021	Harish Mirpuri ph: 407-222-3335	Bathymetric, topographic, marine resource surveys/seawall structural assessment/FEMA compliance/environmental	$200k	12 months	Ongoing within Budget
St. Andrew Bay Land Co.	Sweetbay Marina Village Master Plan	Fall 2021	Jacob Fish 760-918-8200	Marina design, permitting due diligence, land planning, lanscape architecture, market study, development economics	$150k	4 months	Ongoing within Budget
RAYN Development	Billfish Bay Marina/Resort Development	2022	Ray Nestlehutt 478-804-2406	Design , permitting, arhcitecture, civil engineering, marine engineering, entitlement, market study, developments economics, 3D modeling/ rendering	$275k	12 months	Ongoing within Budget
Suntex Marinas	Las Olas Marina Redevelopment	2022	David Filler 305-788-8335	Marina design, permitting due diligence, land planning, lanscape architecture, market study, development economics	$1.5M	8 months	Ongoing within Budget
City of Fort Pierce/St. Lucie County	Fort Pierce Port Engineering	2023	John Corely John.Corley@atkinsglobal.com	Consulting, planning, and port engineering consulting services	$200k	6 months	Ongoing within Budget
Sarasota Bayfron Planning Organization	Sarasota Bayfront Waterfront Redevelopment	2021-2022	Bill Waddill 941-203-5316	Bathymetric, topographic, marine resource, and mangrove surveys, and is providing environmental consulting, design coordination, public outreach, and environmental permitting	$100k	3 months	Ongoing within Budget
City of Fort Pierce/Tetra Tech	Fort Pierce Marina Reconstruction	2015	Edward Seissiger 772-460-6847	Design solution formulation/site master planning, physical model testing, configuration of archipelago geometry, final	$750k	12 months	Completed 2015 on time/ within budget
Islamorada Fish Company/Bass Pro Shops	Bass Pro Shop Marina & Facility Upgrades	2021	Dan Hoy 417-873-5251	Benthic survey/permitting/design/permit replacement bulkheads, revetments, and docks/	$300k	4 months	Completion 2021 on time/ within budget
F3 Marina	Cordova Boat Club	2021	Steve Rice 608-577-3142	Marine/civil engineering design, landscape architecture, permitting, construction administration	$200k	8 months	Ongoing within Budget
Town of Palm Beach	Town of Palm Beach Town Docks Replacement	2021	Rob Weber 561-227-7026	Environmental/regulatory permitting/benthic survey/marine structural, site civil, landscape architecture	$350k	6 months	Ongoing within Budget
Chicago Parks District	31st Street Harbor	2012	Rob Rejman 312-446-4143	Design, permitting, coastal engineering, landscape architecture, construction administration	$2M	12 months	Completed 2012 on time/ within budget

APPROACH AND METHODOLGY

APPROACH AND METHODOLOGY

Edgewater has an internal system for quality control of projects, with peer review conducted by the senior principals of the firm looking at all aspects of projects developed by other principals. In the case of the Florida projects, Ron Schults, PE, who has 42 years of experience with marina projects, will lead this contract. Peer review would be primarily conducted with Jack Cox, PE, D.NE, D.CE, D.PE, who has 44 years of experience in domestic and international marina/waterfront projects.

Fast-tracking of assigned tasks is completed by the entire Edgewater team. The team collaborates with all offices to create a parallel task oriented approach of various assignments. Tasks are divided into surveying groups, marine engineering, coastal engineering, architecture, landscape architecture, planning and design, entitlements, grant administration. All of these services are performed in parallel at appropriate times, per the uniqueness of each project to ensure that critical items are completed on schedule. We understand the importance of urgency, yet efficient project flow required to get past important waypoints for each specific and unique project.

Edgewater and its principals have over 100 years' experience with public sector clients, with successful executing of projects both small and large scale. A unique client of ours is in the State of Michigan (Michigan Department of Natural Resources), where we are responsible for the review of all 82 harbors in the State, and working on each location in parallel with each other to establish the goals and objectives of the client. An additional similar project is with the State of Illinois for shoreline protection measures for a 5-mile stretch of waterfront along Lake Michigan. Additionally, Edgewater currently has a 3-year professional services agreement with the Town of Fort Myers for Marina and Engineering services.

We will achieve or exceed the City's 15% local participation goal. Edgewater has substantial experience with MBE/DBE local participation in projects, which have often ranged from 10% to over 30%, specifically in Illinois and the Chicago Waterfront. We do not foresee any issues in achieving these goals and will work diligently to assign the proper local firms to successfully complete appropriate portions of the project, per their qualifications.

We have an exemplary history schedule of effective budget-management for projects. We have provided references, as requested, that will attest to our project budget management, specifically 31st Street Harbor in Chicago ($11M project). Additionally, even during difficult Covid-19 times, we successfully completed on-time and within-budget implementation of the marina rehabilitation/marina reconstruction for Bass Pro Shop in Islamorada, Florida.

Edgewater has significant strength in engagement of stakeholders in all of our projects. We often begin with a public workshop process where we invite the public early on, before design, to gain input with regard to vision, aesthetics, goals, and objectives. We are equipped to host public meetings either in-person or virtually understanding the current situation with Covid-19. In fact, we have found higher volumes of participation and engagement from the public during Covid-19 by employing various techniques to allow for a broader reach and overall better input. If appropriate, we would propose the use of a project website, on-line surveys, live question and answer sessions, as we have successfully done so with several projects throughout the last year. We are fully equipped to engage with stakeholders throughout key points of the project.

AVAILABILITY OF THE FIRM

Edgewater has fulfilled continuing contract commitments similar to the City of Riviera Beach Marina/Coastal contract throughout our ten years in business. We understand and are sensitive to the financial constraints communities face. This project would be staffed from our Pompano Beach, Florida office with Principal-in-Charge, Ronald Schults, PE. The Co-Project Managers would be Mike Meyers, PLA, previously with EDSA, who brings 25 years of experience in landscape architecture, and Mike Kenny, EIT, an experienced engineer with project work throughout Florida and the Caribbean.

We are committed to successfully completing this project within the terms defined and will consistently seek input from the City, its representatives and stakeholders to ensure we are satisfying the requirements of the project and meeting the City's goals.

REFERENCES

REFERENCES

Client:	Murpuri Group USA
Contact:	Harish Murpuri
Address:	1071 S. Clark Road, Ocoee, FL 34761
Phone:	407-222-3335
Email:	hmirpuri@mirpurigroupusa.com
Client:	Suntex Marinas
Contact:	David Filler
Address:	1688 Meridian Ave, Suite 900, Miami, FL 33139
Phone:	(305) 788-8335
Email:	dfiller@suntex.com
Client:	St. Andrew Bay Land Co.
Contact:	Jacob Fish
Address:	3204 Heartleaf Ave East, Panama City, FL 32405
Phone:	(760) 918-8200
Email:	jfish@standrewbay.com
Client:	Bass Pro Shops
Contact:	Dan Hoy
Address:	81576 Overseas Hwy, Islamorada, FL 33036
Phone:	(417) 873-5251
Email:	dhoy@basspro.com
Client:	RAYN Development
Contact:	Ray Nestlehutt
Address:	260 Peachtree St, Atlanta, GA 30303
Phone:	(478) 804-2406
Email:	rnestlehutt@rayndev.com
Client:	Chicago Parks District
Contact:	Rob Rejman, Dir of Construction
Address:	541 N. Fairbanks Ct., Chicago, IL 60611
Phone:	312-446-4143
Email:	rejman@ascentpgm.com

APPENDIX

APPENDIX

We have included the following documents in this Appendix:

- Marina/Waterfront Experience Matrix
- Edgewater Team Resumes
- Licenses
- Required Forms/Addendums

City of Riviera Beach - Marine Coastal Engineering Services

Waterfront/Marina/Harbor/Feasibility Study Experience	# of Wet & Dry Slips	Public Outreach	Topographic and Bathymetric Survey	Benthic Resource Surveys	Market Analysis	Structural Assessments	Geotechnical Report	Environmental Permitting Review	FEMA Considerations	Conceptual Design	Coastal & Marine Structural Engineering Consideration	Environmental Permitting Feasibility	Construction Cost Estimating	Project Scheduling	Grant Opportunities	Financial Feasibility/Financing	Implementation Plan
Billfish Bay Marina Resort Development - Orange Beach, Alabama	1150	•	•		•				•	•	•	•	•	•	•	•	•
Twisted Tuna Marina/Commercial Development - Stuart, Florida	150		•	•	•	•	•	•	•	•	•	•	•	•		•	•
Melbourne Riverwalk Marina - Melbourne, Florida	200	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Bass Pro Shops Marina/Hotel/Restaurant/Commercial - Islamorada, Florida	75		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Sweetbay Bay Marina Village - Panama City, Florida	625	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Las Olas Municipal Marina - Fort Lauderdale, Florida	85	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Cordova Boat Club Marina Automated Drystack - Fort Lauderdale, Florida	240	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
Suntex Marina - Lantana, Florida	410			•	•	•		•	•	•		•				•	
Bradford Marine - Ft. Lauderdale, Florida	100+		•			•		•	•	•	•	•	•			•	•
Jockey Club Marina - Miami, Florida	54		•		•	•	•	•		•	•	•	•	•		•	•
Grady Marine - Fort Lauderdale, Florida	3		•	•		•	•	•	•	•	•	•	•			•	•
Virginia Key Marina Master Plan - Miami, Florida	850	•		•	•			•	•	•	•	•	•	•	•	•	•
Loggerhead Marina - Jupiter, Florida	250			•	•	•		•	•	•		•				•	
Fort Pierce Municipal Marina - Fort Pierce, Florida	200	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Fort Pierce Port /Marina/Commercial Master Plan - Fort Pierce, Florida (underway)	600+	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Port of Rochester Marina Development - Rochester, New York	250	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
One15 Brooklyn Marina - Brooklyn, New York	120	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
Confidential Client - Verona, New York	480				•			•		•	•	•	•	•	•	•	•
Caroline Bay Marina Feasibility Study / Marina Design - Bermuda	125	•	•	•	•	•	•	•		•	•	•	•	•		•	•
Santa Cruz Marina & Resort - La Paz, Mexico	950				•			•		•	•	•	•	•		•	•
Anguilla Island-Wide Feasibility Study - Island of Anguilla	800	•		•	•			•		•	•	•	•	•		•	•
Belize Marina & Resort Feasibility Study - Belize	740				•			•		•	•	•	•	•		•	•
Savannah River Marina Feasibility Study - Savannah, Georgia	97	•			•	•	•	•	•	•	•	•	•		•	•	
Michigan Department of Natural Resources Marina/Studies - Lansing, Michigan	8000	•			•				•	•			•	•	•	•	•
Schmid Marina - New Baltimore, Michigan	68	•			•			•	•	•	•	•	•	•	•	•	•
North Shore Marina - Holland, Michigan	62	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•
Eagle Bay Marina - Mt Pleasant, Michigan	55				•				•	•	•	•	•	•		•	•
East Tawas State Harbor Marina Improvements - East Tawas, Michigan	120	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Portage Point Inn & Marina - Portage Point, Michigan	74								•		•	•					
Harbor Village Marina - St. Joseph, Michigan	75	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
Harbor Village Marina and Resort - Manistee, Michigan	160	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
Navy Pier Marina - Chicago, Illinois	230	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
31st Street Harbor - Chicago, Illinois	1017	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
Wuakegan Port District Master Master Plan - Waukegan, Illinois	726	•						•	•	•	•	•	•	•	•	•	•
Reefpoint Marina - Racine, Wisconsin	1050	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Canyon Lake Marina - Dallas, Texas	600	•			•		•	•	•	•	•	•	•	•	•	•	•
Tribute Marina - Lake Lewisville, Texas	800	•			•		•	•	•	•	•	•	•	•	•	•	•
Burlington Harbor Marina - Burlington, Vermont	85					•		•		•	•	•	•	•			•
Frisco Marina - Frisco, Colorado	120	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
Portside Marina - Kelly's Island, Ohio	84		•			•		•		•	•	•	•	•		•	•
Clinton Municipal Marina - Clinton, Iowa	320	•			•		•	•	•	•	•	•	•	•	•	•	•
Cedar Rapids Municipal Marina - Cedar Rapids, Iowa	160	•			•			•	•	•	•	•	•	•	•	•	•
Lake Red Rock Marina - Pella, Iowa	375		•		•		•	•	•	•	•	•	•	•	•	•	•
Lucky Peak Marina - Boise, Idaho	300	•			•	•		•		•	•		•	•		•	•
Port of San Diego - San Diego, California	400			•	•			•	•	•	•	•	•	•	•	•	•
Capital Street Marina - Washington, DC	78			•	•			•	•	•	•	•	•	•	•	•	•

EDUCATION

Bachelor of Science, Civil Engineering with Honors, 1978

Michigan Technological University

REGISTRATIONS

Registered Professional Engineer

State of Illinois

State of Florida

State of Michigan

State of New York

State of North Carolina

Washington D.C.

State of Texas

State of Alabama

Belize

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

Michigan Boating Industries Association

Association of Marina Industries

International Marine Institute

National Marine Manufacturers Association

Marine Industries Association of the Treasure Coast, Inc.

Treasure Coast Florida Association of Environmental Professionals

RONALD E. SCHULTS, PE

Principal/Chairman

Mr. Schults is recognized as one of the most notable waterfront and marina development experts in the world, and often speaks on the topic at national and international conferences. His combined passion for community development, coastal engineering, and sailing inspired him to focus on projects that help preserve our waterways and sustain the economic growth and vitality of waterfront communities across the United States and around the world. In 1979, he founded The Abonmarche Group and grew his international waterfront design group through more than 300 waterfront projects around the world. He has personally developed and financed multiple successful waterfront developments valued in excess of $150 million and applies that real-world experience on behalf of clients and community partners who are working to create sustainable and responsible waterfront development projects.

DOMESTIC PROJECTS

Mr. Schults is founder/principal in several corporations and partnerships which focus on marina-waterfront developments throughout the United States and internationally. These companies employ engineers, registered architects, registered land surveyors, professional geologists, environmental scientists, and persons in the associated technical design and administrative disciplines. Ron has completed over 300 marina/waterfront projects worldwide since 1979. Mr. Schults sold his interest in Abonmarche in 2005 to key employees and serves as Chairman Emeritus. Mr. Schults is currently a Principal of Edgewater Resources and the following companies:

LAS OLAS MARINA REDEVELOPMENT

In partnership with Suntex Marinas, Edgewater Resources is leading the design and engineering for the redevelopment of Las Olas Marina. The redevelopment includes a $25 Million investment that will enhance the waterfront to serve local residents, achieve world-class standards to attract and serve the finest megayachts, complement and help implement the goals of the Central Beach Master Plan and provide expanded accommodations for the Fort Lauderdale International Boat Show. The marina is being designed for small vessels and megayachts alike, expanding available dockage from 3,430 linear feet to a total of 5,500+ linear feet.

NAVY PIER MARINA, NAVY PIER

This 100% transient marina along the northern edge of Navy Pier will become the newest waterfront gateway for transient boaters to world renowned, amenity rich Downtown Chicago and regional destinations on Lake Michigan. The Project consists of approximately 132 boat slips ranging from 26' to over 100' in length, containing approximately 6,460 lineal feet of flexibly designed dock space arranged to accept both large and small vessels.

PARADISE VILLAGE MARINA REDEVELOPMENT

Mr. Schults led the Edgewater Resources team in conducting a preliminary marina market analysis in support of the marina's goal to implement and operate a marina and sporting dry harbor. This analysis entailed a global study of the site including storage capacity, mixed-use potential elements, lounge/restaurant, parking, restrooms/lockers/showers, and other boater services amenities. Edgewater then identified a preliminary design and budget for alternate marina fuel facilities at the existing site, with final design in early 2020.

HONORS + AWARDS

Great Lakes Sea Grant Network "Great Lakes Outreach Programming Award," Sustainable Small Harbors Project

2013 President's Award, American Society of Landscape Architects, Illinois Chapter, 31st Street Harbor, Chicago, Illinois

ISS Fabien Cousteau Blue Award 31st Street Harbor, Chicago, Illinois

AIA Chicago SustainABILITY Leadership Merit Award, 2012, 31st Street Harbor

First Place, Engineering News Record Midwest "Best Projects" 2012, 31st Street Harbor

2006 – Ernst & Young Award, Michigan Entrepreneur of the Year

2005 – Ernst & Young Nominee, Michigan Entrepreneur of the Year

1991 – Engineer of the Year, Michigan Society of Professional Engineers, Blossomland Chapter

1988 – Business Expansion Award, Chamber of Commerce

1998 – Employment Gold Award, Chamber of Commerce

PUBLICATIONS + LECTURES

"Design for the Changing Water Levels" IMBC 2018

International Marina and Boatyard Conference & Exposition; Speaker 2013

"Urban Waterfronts" IMBC 2013

"Water Levels" IMBC 2013

"Waterfront Development Strategies" IMI 2011

"A Case Study Harbor Village at Manistee Beach Development Manistee, MI" 2011

"New Marina as Economic Catalysts" IMBC, 2011

"Boating This Year and Beyond" and "Marina Vision," Great Lakes Boating, April 2009

ONE°15 BROOKLYN MARINA REDEVELOPMENT

Principal Engineer for design and development of New York Harbor's newest upscale marina in New York Harbor. The project involved the creation of a new marina facility with full accommodations for vessels from small sailing dinghies to 200-foot megayachts. The project site is a former industrial shipping pier that was partially removed and repurposed into public park space, creating a unique set of challenges and design constraints. Due to its size and location, the project required detailed utility routing analysis and coordination with the surrounding public park to ensure compatibility with the current layout along with the park's proposed future improvements.

ISLAND HILLS GOLF CLUB & RESORT REDEVELOPMENT

As a result of our integrated collaboration of engineering and architecture team in house, this project was competed with multiple phases occurring simultaneously in the fall of 2017.

PORT OF ROCHESTER MARINA

Principal Engineer for the planning and design of the Port of Rochester Marina project; a new active public waterfront park, public promenade, and a 180-slip marina on the Genesee River in Rochester, New York. Approved final design and engineering of site utility requirements, realignment of utilities and roads and specifications. Coordinated multi-agency approvals and site plan compliance for grant funding requirements. Oversaw dock structures and associated safety/utility components, design calculation/specification of dock freeboard buoyancy, stability, ADA compliance, clear/berth widths/spacing; calculation/specification for anchorage systems and component sizing; utility system design, calculation/specification and code compliance for electrical and potable water; shoreline protection design, sizing and construction administration.

HARBOR VILLAGE AT HARBOR SHORES

As principal engineer for this waterfront development project, I managed the engineering, code compliance and permitting for the project. Layout, traffic circulation, parking requirements and compliance with the local code for road system; layout, sizing calculations and detention calculations for storm system. Planning for extension including sizing of water/sewer. I oversaw selection of dock structures and all associated safety/utility components, the design calculation/specification of dock freeboard buoyancy, stability, ADA compliance, clear widths, and berth widths and spacing; calculation/specification for anchorage systems and component sizing. Associated utility system design, calculation and specification; code compliance for electrical and potable water; Site inspection during construction.

EAST TAWAS STATE HARBOR

As Principal Engineer I supervised the planning, design and permitting of multi-phase 80+ slip floating dock marina for the State of Michigan Department of Natural Resources East Tawas State Harbor facility. Conducted and completed initial engineering investigations and extensive market and feasibility study to determine ideal marina design. Site utility: Planning for extension including sizing of water and sanitary sewer. Project duties included overseeing dock structures and associated safety/utility components, the design calculation / specification of dock freeboard buoyancy, stability, ADA compliance, clear and berth widths and spacing, calculation/specification for anchorage systems and component sizing. Oversaw calculations/submittals for various permitting agencies.

"New Chicago Marinas," Great Lakes Boating, February 2009

Speaker, International Council of Marina Industry Associations Conference, 1996

Speaker, States Organization for Boating Access Conference, 1996

Speaker, Asia Pacific Waterfront Development Conference, 1996

"Transferring Wetland Properties," Realtor Review, 1992

TOWN OF PALM BEACH DOCK REPLACEMENT

This project entailed Edgewater Resources conducting a marine resource survey and report of the submerged lands within and surrounding the Town of Palm Beach public marina, on-going environmental permitting applications and processing services for an FDEP ERP, FDEP Lease modification and Public Easement and a Corps Individual Permit in support of the Town of Palm Beach Town Docks project located at 500 Australian Avenue in Palm Beach.

CONCORD RIDGE EQUESTRIAN CENTER

Mr. Schults is the owner and brain trust behind this amazing Equestrian facility. As the Principal in charge of this project engineering design, construction management, land use and master planning, environmental testing, and surveying services were necessary for Concord Ridge Equestrian Center. Concord Ridge is located on 39 acres consisting of 9, 2 - 3-acre paddocks, a mile-long manicured trail around the perimeter of the property, and 2 large outdoor arenas with a specially engineered drainage system.

The lower level of the barn includes a 130' x 212' multipurpose indoor arena, 44 European style stalls, heated indoor wash racks, grooming stalls and two large tack rooms.

31ST STREET HARBOR

Managed the dock structures and all associated safety and utility components, the design calculation/specification of dock freeboard buoyancy, stability, ADA compliance, clear /berth widths and spacing, calculation/specification for anchorage systems and component sizing; associated utility system design, calculation/specification, code compliance for electrical and potable water. Oversaw site inspection during construction.

GATEWAY HARBOR

Led the marina engineering team in the development of a new 250 slip destination harbor for the Chicago Park District. Located adjacent to Navy Pier, the new $55 million harbor project will reconstruct the historic Dime Pier structure and create a new publicly accessible pier providing views of the Chicago skyline. Key elements include improved pedestrian and bicycle connectivity to downtown Chicago and integration of extensive sustainable design strategies including reuse of existing structures, materials selection, habitat creation, alternative energy generation, and LEED Certified structures.

MANISTEE HARBOR VILLAGE

Ron Schults became affiliated with the Harbor Village project in 1985 and received an option to purchase the property from the City of Manistee, contingent upon receiving approvals, permits and financing. Over the next three years under Ron's leadership, project approvals were received, and a joint venture was formed with DSLT Development Company of St. Clair, Michigan to construct the project. This 66-acre, $150 million project began construction in 1988, with construction continuing in multiple phases for both the marina and residential units through today, creating a major economic transformation based primarily on the value of its natural resources to businesses, visitors, and residents.

ELK RAPIDS MUNICIPAL MARINA

$3 million, multi-phased marina improvement program in Elk Rapids, Michigan that included repairs to breakwaters, docks, electrical system upgrades, boat launch, etc.

CORDOVA BOAT CLUB

The Cordova Boat Club Project will be the first fully automated dry stack boat storage facility open to the public. Located on Fort Lauderdale's 16th street canal, the Club includes over 240 dry slips capable of holding vessels up to 50 feet in length, with an additional 20 wet slips that serve as a queuing area for boaters. As Principal-in-Charge, Mr. Schults will lead the Edgewater Resources team to provide marine and civil engineering design, and landscape architecture services. He will specifically direct the local, state and federal permitting & approvals process for the project. This state-of-the-art facility will offer vessel storage and provisioning, marina fuel, pump-out, and shore power service that is equipped with a marina guard protection system to comply with national best practices.

FORT PIERCE PORT ENGINEERING

Edgewater Resources provided preliminary engineering and feasibility study analysis to review the physical and economic viability of constructing a megayacht marina and refit facility on 20 acres at the Port of Ft. Pierce. Subsequently, the Edgewater Team was selected to provide professional consulting, planning, and port engineering consulting services to St. Lucie County. Mr. Schults will provide Principal leadership in the evaluation of options for the operation and development of the former Indian River terminal at the Port of Ft. Pierce.

82 STATE OF MICHIGAN MUNICIPAL MARINAS

Ronald Schults has completed many marina feasibility studies, dredging, improvements and master plans for the state of Michigan. Some of these include, but are not limited to: Bay City, East Tawas, Cedar River, Grand Traverse, Harrisville, Mackinac Island, and more.

MORRIS RIVERPLACE

Supervised the master planning and engineering for development including site design coordination with applicable agencies including DNR and Army Corps of Engineers. Site coordination tasks included design and engineering of layout, traffic circulation, and parking requirements to meet code compliance for site road system; layout, sizing calculations and detention calculations for storm system. Directed material classification, quantity calculations, disposal method and SCSE measures for dredging.

MICHIGAN HARBOR

Abonmarche provided planning, feasibility and permitting services for renovation of a 600-slip marina at the Nautical Mile Marina District of St. Clair Shores, Michigan.

HARBOR VILLAGE AT MANISTEE BEACH

This project, in Manistee, Michigan, was an extensive infrastructure project in the City of Manistee, Michigan, that was developed over a 13-year period. The project included sanitary sewer, storm sewers, MDOT road relocation project, sheet piling for 200-slip marina basin, docks and utilities for 200 slips, site development for 100 condos and 40 cottages totaling in excess of $25 million over the 13-year course of the project. Ron was the project engineer for Abonmarche responsible for all elements of project design, coordination, planning, entitlement, etc.

HARBOR ISLE MARINA

Permitting, engineering, surveying, architectural and inspection services for 300-slip, full-service marina in St. Joseph, Michigan.

EAGLE POINTE HARBOR MARINA

On this project Mr. Schults completed required market feasibility study, permitting, engineering, federal regulatory, construction management, surveying, and architectural design of a new 870-slip marina with 240-condominium units located in St. Joseph, Michigan.

THE BOARDWALK SUBDIVISION

42-slip marina, two-lane launch ramp and 42-lot exclusive single-family residential development in St. Joseph, Michigan.

MALLARD CREEK MARINA

While with Abonmarche Mr. Schults acted as marina market analyst, marina engineer, surveyor and construction manager for development of the initial marina basin for Mallard Creek Marina in Port Huron, Michigan. All services were completed in a timely manner within budget requirements.

WEST BASIN MARINA

100-slip marina located in St. Joseph, Michigan. Several upgrades / renovations / ongoing projects costing over $2 million since 1982.

VILLAGE OF SEBEWAING MARINA

126-slip and 4-lane boat launch/marina co-sponsored by the Village and Michigan Department of Natural Resources for the Village of Sebewaing, Michigan.

GRAND ISLE MARINA

360-slip marina located in Grand Haven, Michigan. Expansion included regulatory permitting for the proposed 300 slips.

PORTAGE PUBLIC MARINA

Feasibility studies, permitting, engineering and construction administration for a 250-slip marina in Portage, Indiana.

WASHINGTON PARK MARINA

Updated 20-year Master Plan for this 570-slip marina located in Michigan City, Indiana. The Master Plan included dock reconfiguration to gain an additional 50 slips, as well as larger slips. Construction of the 3-phase project was completed Spring 1999 with a total budget of $7 million.

DETROIT & CANADA TUNNEL, CORPORATION

Provided full project coordination and execution of detailed hydrographic survey defining exposed tunnel areas and surrounding bathymetry with color 3D modeling and contouring. The work included preparation of detailed plans and profile view depictions of tunnel crest location relative to existing bed cover. Provided video verification of tunnel exposed areas and detailed Descriptive Report defining project parameters, recommendations and conclusions.

HOUSING/MARINA PROJECT

Market analysis for housing units for 450-slip marina project located in Muskegon, Michigan.

GLENLORD BEACH

Improvements to a Lincoln Township park and beach that had experienced severe erosion damage.

DIAMOND COVE / PINE RIVER CLUB

Abonmarche has been the engineer, surveyor and permit specialist to develop the Pine River Club in St. Clair, Michigan, and Diamond Cove Marina and Residential Development.

STATE OF MICHIGAN ELECTRICAL STUDY

The Michigan State Waterways Commission and the Michigan Department of Natural Resources retained Abonmarche to perform an electrical inventory study of the eighty state-operated or Michigan State Waterways Commission sponsored Harbors of Refuge throughout Michigan. The purpose of the study was to inventory existing dockside electrical power at each slip of each marina, research current and future power trends in boating, to recommend a standard for future State projects, and to estimate the cost to upgrade the electrical systems of each marina to the recommended standard.

CEDAR RIVER

125-slip, $5 million marina for Cedarville Township consisting of project planning, preliminary and final engineering, permitting, wetland mitigation, land and water surveying services and construction management.

MUSKEGON

138-slip marina feasibility study identifying structural problems and thereafter completed design and construction management for a two-phase Marina Master Plan. In 2004, updated the master plan for Phase III project improvements, which included replacing breakwaters and docks around the perimeter of the marina. Abonmarche was awarded a contract to provide final design and engineering, permitting and construction management for Phase III.

CITY OF ST. CLAIR MUNICIPAL BOAT HARBOR

Commissioned by the City of St. Clair to complete the Marina Master Plan for the City of St. Clair Municipal Boat Harbor in 2004. Thereafter, completed permitting services, final design and engineering, and construction management for the Harbor. Final design of this project required coordination with and approval from the Michigan Department of Management and Budget, as well as the Michigan Department of Natural Resources. This project included marina basin dredging (over 16,000 cubic yards), dock construction (3 fixed piers and over 100 slips – floating and fixed), utility upgrades including a new fuel dock, parking lot construction and building renovation. Design was completed in 2006 and construction is scheduled for completion by May 2007.

INTERNATIONAL PROJECTS

ANGUILLA

ANGUILLA ISLAND MARINA FEASIBILITY

Edgewater Resources was engaged to conduct an island-wide megayacht marina Master Plan and Feasibility Study for five alternate sites around the Island of Anguilla. Edgewater evaluated existing site conditions, such as geography, coastal processes, environmental concerns, property ownership, property availability, existing infrastructure, proximity to amenities, and ability to augment tourism on the island.

MARINA SANTA CRUZ RESORT
LA PAZ, MEXICO

Mr. Schults is primary partner and facilitator between the land-owner and funding groups to implement construction of $900M resort with Phase I funding of $125M. The project is nearing completion of final approvals with the Federal Mexican MIA Process and also the submerged lands right. The project includes 500 super yacht slips to 400' in length, in addition to a 4-star hotel, condominiums, single-family bungalows, commercial facility, shipyard and marine repair facilities, wastewater treatment plant, water desalination plant, drystack and the like. The project is anticipated to begin construction Spring 2021. Mr. Schults serves as the Principal in Charge of the project for Edgewater.

BELIZE
ARA MACAO RESORT & MARINA, PLACENCIA PENINSULA, BELIZE

600-acre development with 1 mile of Caribbean ocean frontage at the north end of Placencia Peninsula in Belize. The development will include multiple phases totaling 2,000 housing units/hotels/casino/marina with direct access to the ocean.

BERMUDA
CAROLINE BAY MARINA REDEVELOPMENT, MORGAN'S POINT

As Principal-in-Charge, Mr. Shults provided leadership to the Edgewater Resources team that provided a marina market feasibility study, design, engineering and project management for a luxury marina and yacht club, accommodating vessels 30 - 300 feet in length. The Project began in 2014 and opened in Spring 2017 in time for the America's Cup Regatta.

EGYPT
SHARM EL SHEIKH MARINA, EGYPT

Marina Master Plan, Feasibility Study for 800-slip commercial marina and 300-slip private yacht club marina.

INDONESIA
LESTARI ISLAND RESORT, PULAU KAPAL BESAR ISLANDS, INDONESIA

Master Planning and Feasibility Study of two resort linked marinas, one containing 50 slips, the other containing 10 slips, including related marina facilities.

IRELAND
DUN LAOGHAIRE MARINA, DUBLIN, IRELAND

Ron Schults was invited to pursue an international tender to design/build/operate and transfer a large public marina in the main harbor area in Dublin Ireland. The completion of initial feasibility studies indicated that the marina project had very favorable development economic conditions, so Ron assembled a combined local/international team that put together a master plan, technical studies, and development financing to complete the project. Subsequently the team was awarded the project and completed the Marina, opening in 2001. The marina has 820 berths accommodating boats up to 100' within a short distance of Dublin city center and is a Five Gold Anchor rated marina meeting international standards.

PUERTO RICO

PORT OF SAN JUAN MARINA & SHIPYARD, PUERTO RICO

Development of 3 marina/shipyard sites in Puerto Rico including Pier 9 Downtown Marina, Pier 15 MRO Drydock and the MTA Pier Shiplift Site. Project incepted from strong interest by megayacht owners to provide re-fit and refurbishing, as well as creation of a commercial boat market.

MALAYSIA

PORT DICKSON MARINA, PORT DICKSON, MALAYSIA

Marina Feasibility Study and Master Plan for 900 slip marina and 4,000-unit residential community.

THE MALACCA CLUB, MALACCA, MALAYSIA

Marina Master Plan for 500-slip marina.

PENANG SWIMMING AND TENNIS CLUB, PENANG, MALAYSIA

Marina Master Plan Alternatives for 500 slip marina.

PORT KLANG GOLF RESORT, PORT KLANG, MALAYSIA

Marina Design Analysis, Traffic and Environmental Impact Study for 150 slip marina.

LANGKAWI ISLAND RESORT, KUALA LUMPUR, MALAYSIA

Marina Feasibility Study and Coastal Engineering for 100-slip facility linked to a 5-Star Sheraton Resort Hotel.

MOFAZ MARINA, PORT KLANG, MALAYSIA

Marina re-design (originally designed by others) and development including operations and management services.

LINGGI RIVERINE RESORT MARINA, PORT DICKSON, MALAYSIA

Marina and waterfront master plan including planning for 1,800-acre upland residential and golf development.

DESARU INTERNATIONAL MARINA, MALAYSIA

Marina Master Plan and Feasibility Study.

PHILIPPINES

PUERTO AZUL MARINA, PHILIPPINES

Marina Master Plan, Feasibility Study and Design for 400-slip marina including passenger ferry terminal. Construction began 1996, to be completed in late 1997.

SUBIC ISLAND MARINA, SUBIC BAY, PHILIPPINES

Feasibility Study, Master Plan and Design for 50-slip transient marina.

REPUBLIC OF CHINA

DONGSHAN ISLAND MARINA, FUJIAN PROVINCE, CHINA

Feasibility Study and Joint Venture Partner.

SHANGHAI MUNICIPALITY YACHTING MASTER PLAN, CHINA

REPUBLIC OF MALDIVES

SEENU ATOLL MARINA, MALDIVES

Marina and Resort Master Plan for 750-resort units and 300-slips (including mega-yacht slips).

SINGAPORE

PONGGOL MARINA, SINGAPORE

Feasibility Studies, Master Planning and Design Consultant including operations and management consulting for 1,000-slip marina. Construction to be completed by April 1997.

REPUBLIC OF SINGAPORE YACHT CLUB, SINGAPORE

Marina Master Plan, Feasibility Study, Fueling Study, and Development, Design, Operations Consultant for 500-slip marina for Republic of Singapore Yacht Club.

KEPPEL BAY MARINA, SINGAPORE

Marina Market Analysis Consultant a large-scale residential and marina club development. Harbor Modeling Study for Keppel Bay Marina.

TAHITI

BEL AIR WATERFRONT DEVELOPMENT, TAHITI, FRENCH POLYNESIA

Marina Master Plan for an 80-slip marina, including a 100-boat capacity dry rack storage building, passenger ferry terminal and commercial ferry terminal.

UNITED ARAB EMIRATES

INTERNATIONAL MARINA SPORTS CLUB, ABU DHABI, UAE

Site Analysis, Preliminary Feasibility, and Marina Master Plan.

MBM MARINA, ABU DHABI, UAE

Site Design and Marina Reconfiguration.

REAL ESTATE DEVELOPMENTS

In addition to operating companies that perform design, construction management and operation of marina projects, Ronald E. Schults is also a principal/owner/investor in the following:

CONCORD RIDGE DEVELOPMENT COMPANY, ST. JOSEPH, MICHIGAN

Ron Schults provided engineering design, construction management, land use and master planning, environmental testing, and surveying services for this 99.5-acre residential and commercial community.

EDGEWATER DUNE, ST. JOSEPH, MICHIGAN

Edgewater Resources, in collaboration with the Michigan Department of Environmental Quality and the City of St. Joseph transformed a former industrial brownfield site into a new multi-million-dollar, 444-acre mixed use development in 2001. Planning strategy included a tax-free renaissance zone, an eight-parcel business-commercial park, 130 single family homes, a public green space with a centrally located pond, playground and gazebo comfortably tucked into the sandy site in Southwest Michigan.

ABONMARCHE DEVELOPMENT, INC.

Ronald E. Schults is co-founder of Abonmarche Development, Inc. (ADI), a real estate consulting and advisory firm offering market studies, feasibility studies and land development services. ADI was Joint Venture Partner with DSLT Development Company (formerly Diamond Crystal Salt) on a 66-acre $85 million, mixed-use marina/condominium/hotel/retail project in Manistee, Michigan (currently in final phase of development).

ABONMARCHE REALTY PARTNERS
22,000 sq. ft. office building in Benton Harbor, Michigan; 6,000 sq. ft. office in Mishawaka, Indiana; and 4,000 sq. ft. offices in Manistee, Michigan.

LAKELAND DEVELOPMENT GROUP, INC.
$10 million waterfront residential condominium project.

THE BOARDWALK DEVELOPMENT COMPANY, ST. JOSEPH, MICHIGAN
St. Joseph, Michigan – 42-slip/42-lot luxury residential community.

PORTAGE WATERFRONT DEVELOPMENT, PORTAGE, INDIANA
$90 million upscale, mixed-use development with 350 slips, 400 condominiums (planned), single-family homes and commercial area.

EDGEWATER DEVELOPMENT COMPANY, ST. JOSEPH, MICHIGAN
80,000 sf of commercial/retail buildings in St. Joseph, Michigan with 10 retail spaces on Main Street plus a second-floor restaurant with rooftop and offices.

EDGEWATER GROUP, MI, ST. JOSEPH, MICHIGAN
55,000 sf retail/office building in Benton Harbor, Michigan; 56,000 sf industrial/commercial buildings in St. Joseph, Michigan; Spec homes; Edgewater Center which includes four commercial/medical offices in St. Joseph, Michigan.

LEFTY'S COHO LANDING, PORTAGE, INDIANA
$125 million mixed-use, waterfront development sold to Brant Construction in 2004.

SANDY BAY MARINA/MIXED-USE DEVELOPMENT, MORRIS, ILLINOIS
$200 million project began construction in Fall 2006.

EXPERT TESTIMONY SERVICES

In addition to studies, designs and management of construction projects, Mr. Schults has also provided expert testimony for numerous lawsuits identifying engineering, architectural and construction matters for defendants and plaintiffs in various cases. Typical cases have included marinas, roadway designs, marina designs, walkway ramps, stairways, water drainage and storm sewer design, etc. The following is a non-exclusive listing of previous case experience:

1986 - LaSalle Landing Marina - Marina drainage/easement/property rights lawsuit; Berrien County Circuit Court, St. Joseph, Michigan
1992 - City of Manistee - condominium/roadway settlement/property values case; Manistee County Courthouse, Manistee, Michigan
1995 - Morren Construction - Seawalls/Site work/Construction claim, South Bend, Indiana; S Joseph County Courthouse, Mishawaka, Indiana
2011 - Andrews family Real Estate settlement/valuation/mediation; Berrien County Circuit Court, St. Joseph, Michigan
2011 - Equestrian Center mediation for construction claim/settlement
2014 - Harbor Village – Contractor Lamar Construction bankruptcy/expert testimony; case # 1:14-bk-04719; US Bankruptcy Court for the Western District of Michigan
2014 - Equestrian Center Mediation for Construction Claim/Settlement; File 12- 0186-CK; Elkhart County, IN

2015 - Rickenbacker Marina at Key Biscayne, Florida - expert witness testimony; Miami-Dade Courthouse, Miami, Florida
2016 - Las Olas Marina in Ft. Lauderdale Testimony - expert witness testimony; Broward County Court, Ft. Lauderdale, Florida
2018 - Ara Macao Marina & Resort, Belize - expert witness testimony/property valuation/development plan; case# 3:18-bk-03615-PS; US Bankruptcy Court for the District of Arizona
2018 – Confidential – expert witness testimony/Feasibility Study/Marina Market Analysis; Washington DC

EDUCATION

Bachelor of Engineering Science
Purdue University
Master of Engineering Science
Purdue University
Post-graduate Studies in Geophysical Fluid Dynamics, University of Chicago
PhD in Coastal Engineering
University of Delaware

REGISTRATIONS

Registered Professional Engineer
State of Alaska
State of Delaware
State of Florida
State of Illinois
State of Indiana
State of Louisiana
State of Maryland
State of Mississippi
State of New York
State of New Jersey
State of Ohio
State of Rhode Island
State of South Carolina
State of Washington
State of Wisconsin

CERTIFICATIONS

Academy of Coastal, Ocean, Port and Navigation Engineers
Diplomate Coastal Engineer
Diplomate Port Engineer
Diplomate Navigation Engineer

JACK C. COX, P.E., D.CE, D.PE, D.NE

Principal | Coastal Engineer | Director of Engineering

Mr. Cox is internationally recognized for his credentials in research, engineering, and design of projects involving nearshore hydrodynamics, arctic and ice processes, harbor tranquility, breakwaters, fixed and floating marine structures, dredge material disposal, shore protection, port planning, marina design, and risk analysis. He directs the planning and design of large and complex waterfront and harborworks projects around the world.

Jack is an award-winning lecturer in the topic of coastal engineering. His 45+ years of experience in the marine engineering field spans a full range, from ecologically sensitive planning through final design and construction. He provides expert witness testimony on shoreline processes, harbor and breakwater design, marinas and dockage, contaminated marine sediment dredging and capping, and nearshore recreational issues. He has authored more than fifty coastal and marina related technical publications and is an inaugural Diplomate in the Academy of Coastal, Ocean, Port and Navigation Engineers with specialties in coastal, port and navigation engineering.

CAREER HIGHLIGHTS

- Appointment as Adjunct Professor of Practice in the Department of Civil and Environmental Engineering, University of Wisconsin
- Appointment Adjunct Assistant Director for the Docks and Marinas Program, Department of Engineering Professional Development, University of Wisconsin
- Appointment to Board of Trustees of the Academy of Coastal, Ocean, Port and Navigation Engineers (ACOPNE). Trustee for Navigation and Coastal Engineering
- Inaugural Diplomate in the fields of coastal, port and navigation engineering, ACOPNE/ASCE
- Appointment as US Representative and Deputy Chairman for the PIANC Recreational Boating Commission - 18 years
- Appointment to Tsunami Technical Advisory Board, University of Washington
- Special presidential license recipient to practice marine engineering in country of Cyprus
- Patent holder for “Quay Wall with Absorption Blocks and Interconnecting Flow Paths” Patent No.: US 9,896,814 B2, February 20, 2018
- Past chairman for the ASCE Coastal Practice and Cold Regions Engineering Technical Committees
- Principal author and lecturer for the ASCE Manual 50 for Planning and Design of Small Craft Harbors and the PIANC Marina Design Guidelines Manual and the International Marina Designer Training Program
- Principal Designer for the first hurricane scale Living Shoreline Protection Scheme at the Ft Pierce FL marina, which received the 2016 COPRI Project Excellence Award.
- Pioneered the use of tandem breakwaters and floating wave attenuators to extend functionality of wave protection into otherwise unacceptable ranges
- Author of FEMA wave overtopping and propagation theory and methodology

HONORS + AWARDS

Adjunct Professor of Practice in The Department of Civil and Environmental Engineering, University of Wisconsin

Assistant Director for The Docks and Marinas Program, Department of Engineering Professional Development, University of Wisconsin

Board of Trustees of The Academy of Coastal, Ocean, Port and Navigation Engineers (Acopne) / Trustee for Navigation and Coastal Engineering

Inaugural Diplomate in The Fields of Coastal, Port and Navigation Engineering, Acopne/Asce

US Representative and Deputy Chairman for The Pianc Recreational Boating Commission - 18 Years

Tsunami Technical Advisory Board, University of Washington

Special Presidential License Recipient to Practice Marine Engineering - Cyprus

Patent Holder for "Quay Wall with Absorption Blocks and Interconnecting Flow Paths" Patent No.: US 9,896,814 B2,

Past Chairman for The Asce Coastal Practice and Cold Regions Engineering Technical Committees

Principal Author and Lecturer for The Asce Manual 50 for Planning and Design of Small Craft Harbors and The Pianc Marina Design Guidelines Manual and The International Marina Designer Training Program

Principal Designer for The First Hurricane Scale Living Shoreline Protection Scheme at The Ft Pierce Fl Marina, which Received The 2016 Copri Project Excellence Award.

Pioneered the use of Tandem Breakwaters and Floating Wave Attenuators to Extend Functionality of Wave Protection into Otherwise Unacceptable Ranges

Author of Fema Wave Overtopping and Propagation Theory and Methodology.

Mr. Cox has authored more than fifty coastal and marina related technical publications and is an inaugural Diplomate in the Academy of Coastal, Ocean, Port and Navigation Engineers with specialties in coastal, port and navigation engineering. He holds a bachelor's and master's degree in Engineering Science from Purdue University with post-graduate studies from the University of Chicago in Geophysical Fluid Dynamics, and PhD studies in Coastal Engineering from the University of Delaware. He is a registered professional engineer in fourteen coastal states in the US and in the country of Cyprus.

WORK HISTORY

EMPLOYMENT ENTITY	TITLE	BRIEF POSITION DESCRIPTION	TIME
Sun Shipbuilding	Ocean Engineer	Ship navigation and vessel hydrodynamics research	1974-1978
ARCTEC	Principal Coastal	Ice Research, coastal modeling, and coastal	1978-1986
Warzyn	Sr. Coastal Engineer	Design for shore protection and marina development	1987-1991
CH2MHILL	Ocean Technology Director	Marina engineering, coastal processes analysis, and shore protection design	1991-1994
Michael Baker Corp	Coastal Division	Open-coast shore protection design	1994-2001
PBS&J	Principal Coastal	Design of coastal structures and marinas	2001-2003
Tetratech	Coastal Div Manager	Living shorelines and marina design	2003-2006
RETEC	Sr. Coastal Engineer	Harbor redevelopment and marina design	2006-2008
HDR	Sr. Coastal Engineer	International marina development	2008-2010
SmithGroupJJR	Principal Coastal	International marina and coastal design	2010-2019
Edgewater Resources	Principal/ Director of Engineering	International marina and coastal design	Present

BRISAS DE AMADOR MARINA, PANAMA CITY, PANAMA

As Principal Designer and Engineer, Mr. Cox directed planning and design of a 400-slip marina, cruise ship terminal and mega-yacht harbor for the north shore of Amador Island, at the Pacific entrance of the Panama Canal. Performed wave studies for harbor tranquility in wind and swell waves and provided engineering of breakwaters and floating wave attenuator protection systems. Configured landside port layouts including boat repair yard, drystack storage facilities and cruise ship berthing.

KEWALO BASIN YACHT BERTHING, HONOLULU, HI.

Developed designs to reconfigure the commercial fishing harbor into a recreational and charter yacht basin. Prepared alternative slip layouts based on variable boat size mixes. Provided accommodations for mega yacht berthing. Incorporated concepts for reducing swell wave action in the harbor.

ST. GEORGE ISLAND HARBOR, ALASKA

Developed harbor entrance and breakwater, while serving as Harbor Designer including re-alignments and basin geometries to reduce wave penetration and harmonic response in harbor. Assessed navigability and maneuvering/berthing requirements for ocean going supply barge deliveries and Bering Sea fishing fleet offload operations. Reviewed and analyzed ADCP wave and current measurements collected at site and results of numerical modeling of harbor wave response. Recommended harbor reconfigurations to mitigate the harbor agitation.

MAKRONISOS MARINA, AYIA NAPA, CYPRUS

While serving as Principal Designer and Engineer, directed site master planning, harborworks engineering and final design of a 600 slip marina and waterfront resort village including the design of an yacht harbor and protective breakwater, land reclamation, artificial recreational pocket beaches, boat repair yard, haul out systems and dry boat storage, government security and quarantine dock, residential villas, high rise condominiums, and a commercial core for year round economic generators.

FISHERMAN'S COVE WORKING WATERFRONT, GOOSEBERRY POINT, WA

While serving as Design Director, Mr. Cox directed planning, permitting and engineering design of a floating harbor infrastructure and wave protection system to accommodate a commercial fishing fleet. Integrated a new ferry dock and terminal with the harbor operation. Developed design for access trestle, product offloading dock, fuel pier, dry boat storage and boatyard. Integrated a ferry terminal facility and coordinated upland planning for road re-alignments. Conducted design charettes with Lummi Nation to define needs for facility and seek TIGER grant funding and facilitated workshops with regulators to expedite NEPA assessment and JARPA permits.

MAKRONISOS MARINA, AYIA NAPA, CYPRUS

Mr. Cox directed master planning and final engineering and design of a 600-slip marina and waterfront resort village while serving as Principal Designer and Engineer. This work included the design of a yacht harbor and protective breakwater, artificial recreational pocket beaches, boat repair yard, haul out systems and dry boat storage, Government security dock, residential villas, high rise condominiums, and a commercial core for year-round economic generators.

DAKOTA GATEWAY YACHT BASIN, ANACORTES, WA

Developed basin layout for 20+ mega-yacht berths protected by a robust floating wave attenuator. Created a floating attenuator design to accommodate 5 ft, 4 second wave action and tidal currents exceeding 4 knots. Arranged dockage to reduce maneuvering issues during strong tidal action. Configured dockage to avoid shading effects on submerged aquatic vegetation.

HARBOR OF AMERICAS, BOCAS DEL TORO, PANAMA

Developed master plan for a 450-slip marina complex and floating village. As Principal Engineer, Jack formulated unique curved dockage geometry to circumscribe a pristine live coral reef and nature preserve island. Integrated wave attenuation features into the dockage plan. Created a mega-yacht inner "icon" basin surrounded by a floating marina village, and a fleet mix from 40 ft to 250 ft. Supported environmental impact assessment including modeling of oil spills in the marina embayment.

OCEAN REEF MARINA MASTER PLAN, HARBOR ENTRANCE + BASIN DESIGN, PANAMA CITY, PANAMA

Acting as Principal Engineer, Jack created master plan for 200 slip marina complex. Developed engineering plans and specifications for floating dockage system to operate in 5-meter tides. Created preliminary design for harbor architecture including yacht club facility and shoreline promenades. Configured finger berths and Med-moors to accommodate giga-yachts to 100-meter length.

Engineered a marina entrance channel with integral spending beach to absorb transmitting swell waves. Manipulated entrance approach channel geometry and breakwater alignments to minimize swell diffraction effects. Analyzed vessel maneuvering through entrance channel. Modeled local wave action of spending beach to offer recreational utility and bather safety.

Directed engineering study of wave and current patterns around proposed artificial island complex. Examined swell wave propagation and sedimentation patterns between islands. Assessed impact of addition of breakwaters to island geometries. Developed a harbor configuration to be tranquil and self-flushing. Designed breakwater geometry and armoring to absorbent to long period waves and shaped to divert and dissipate wave reflections for navigation areas.

PUNTA LOROS MARINA, JESUS MARIA RIVER, COSTA RICA

As Principal Designer, conducted ground reconnaissance of shoreline, estuary and river mouth to assess feasibility of siting a mega-yacht marina as part of the seven-star resort development by Jumeirah at the promontory location. Examined wave exposure, coastal geomorphology and conjectured nearshore water depths for navigation. Configured a stage nearshore breakwater entrance design with an inland marina basin.

PANAMA CANAL VILLAGE MARINA, PANAMA CITY, PANAMA

Developed marina master plan, including commercial and hotel complex, dry stack boat storage and boatyard facility, outdoor amphitheatre and cruise terminal. Prepared berthing scheme for 400+ recreational yachts. Configured breakwater – landfill scheme for self-flushing basin, and high value waterside development opportunities.

PORT IMPERIAL MARINA, WEEHAKEN, NJ

As Principal Designer, Mr. Cox developed a signature marina layout, reminiscent of the development logo, to berth large mega-yachts with a view of the Empire State building in the setting sun. The design incorporates partially porous breakwaters to modify current patterns, redirect sedimentation and offer sheltering from both hurricane waves and debris and ice impacts. The design was complicated by exceedingly soft bottom conditions, restricting the nature of the breakwater structures and means of construction.

BAYONNE TRANSIENT YACHT FACILITY, BAYONNE, NJ.

Developed design for dual purpose floating wave attenuation system, providing protected berthing for mega and giga yachts up to 250 ft in length. Developed performance specifications for floating dock system resistant to ice and debris impact, and tightly toleranced to accommodate rigorous ADA compliance in both alignments and float motions. Mr. Cox served as Engineer of Record for this project.

FORT PIERCE MARINA BREAKWATER AND DOCKAGE DESIGN, FLORIDA

Directed design of "living shoreline" harbor wave protection system as Principal Designer, including design of rubble mound breakwaters disguised as natural islands and reefs, fixed panel breakwaters for current deflection and sedimentation control, and floating wave attenuators for revenue generating harbor wave sheltering. Incorporated habitat mitigation features into the marina layout and design. Directed model testing of design to control sedimentation and tidal current patterns.

NORTHSIDE MARINA, STUART, FL

Led planning and design activities for three adjacent marina facilities as principal designer to accommodate public and private boat owner use. Arranged dockage for optimum hurricane storm survival. Prepared wave sheltering plan to protect the three marinas by devising an integrated system of overlapping wave sheltering. Provided for smaller craft launch and retrieval for a drystack storage facility.

AYIA NAPA MARINA DEVELOPMENT, CYPRUS, G. CARAMONDANIS INVESTMENTS LTD

As Project Director developed harbor design and upland port infrastructure plan and engineering to create a new marina on the eastern shore of the Island of Cyprus. The design involves excavation of rock bottom to create berthing and navigation channels, as well as designs for artificial recreational beaches which supplement breakwaters for wave protection due to a lack of suitable quality and size of armor stone.

STEEL POINT WATERFRONT AND MARINA, BRIDGEPORT, CT, BL COMPANIES

While serving as Principal Investigator performed due diligence and fatal flaws assessment of the condition of the existing waterfront infrastructure, and requirements for developing a waterfront commercial and residential center and central marina. Evaluated permit conditions, environmental constraints, and developed concept designs and criteria for the site.

WAUKEGAN MARINA, WAUKEGAN IL, PORT OF WAUKEGAN

Conducted condition assessment as Principal Investigator of fixed concrete dockage system. Assessed feasibility of modifying fixed dockage to be vertically adjustable. Prepared design mechanical lifting system for pile installation and developed modification cost estimate to adapt 600 boat slips.

FOX POINT STATE PARK MASTER PLAN, DELAWARE RIVER, WILMINGTON, DELAWARE, STATE OF DELAWARE, DIVISION. OF PARKS AND RECREATION

Managing the development of a master plan for new state park to be built on a former Superfund site along three miles of the Delaware River. The plan includes a festival and fishing pier, boat launch ramp and marina, jogging and biking trails, outdoor amphitheater, hedge maze, lodge, multi-purpose building, estuarine nature preserve created from restoration of a tidal flat, and ingress improvements.

MEARS POINT MARINA, GRASONVILLE, MARYLAND, MEARS POINT ASSOCIATION

While working as Engineer Manager, supervised upgrade of an existing marina including new dockage, marina entrance and recommendations for a wave attenuation system. Project included dockage realignment planning for large yacht berthing.

OUTER SQUALICUM HARBOR MARINA REDESIGN, BELLINGHAM, WASHINGTON, PORT OF BELLINGHAM

Designed the rehabilitation and reconfiguration of Gate 3 dock. Realigned docks, modified berth slip mix, relocated private boat houses, provided full design for the dockage system including, pilings, infrastructure upgrades, design of shoreline esplanade and marina services building, and a floating comfort station.

INNER SQUALICUM HARBOR MARINA EXPANSION, BELLINGHAM, WASHINGTON, PORT OF BELLINGHAM

As Engineer of Record, designed the Gate 12 dockage expansion. Provided the architecture for a portal gate house and patron services building. Resolved latest ADA requirements for handicap ramp access to docks. Provided detailed design for berthing of 40 to 60 ft yachts including power and utilities. Provided special engineering for seaplane dock and side tie for mega-yacht berthing

BURNS HARBOR PORT EXPANSION PLAN, PORTAGE, IN

Directed a master planning study and site expansion strategy based upon the Marquette Plan for advancing the industrial Lake Michigan Lakefront in Indiana. The plan's development includes integrating input from various industrial and private interests and stakeholders along the shoreline, seeking technical solutions to address both functional needs for the port operation and environmental protection and enhancement measures. The plan involves finding and creating new lands for port expansion, establishing linkages to the land transportation network, and controlling shoreline processes to mitigation substantial issues of both shoreline erosion and shoreline accretion which harm the industry use of the shoreline as well and place private ownership in peril of losses

PORT OF GREEN BAY, WI FACILITY ASSESSMENT, GREEN BAY, WI

While serving as Principal Engineer, directed an economic forecast and market demand study to determine adaptive reuses and limitations to an existing commercial berth area on the Fox River. Assessed physical capacity to for berthing for various vessel types and sizes given channel depths and widths and bridge clearances. Evaluated upland site accessibility and feasibility for introducing various materials handling systems and rail spur access on dock.

PORT OF VACAMONTE MASTER PLAN, VACAMONTE PANAMA

Developed design for expansion of the port of Vacamonte to accommodate transshipment of bulk commodities, petroleum products, containerized inter-coastal shipments and ferry terminal operations. Planning involved devising landfill design and port geometry to configure storage yards for efficient operation, design of a protective breakwater for boat surge mitigation due to swell, and various product loader systems.

NUCLEAR POWER GENERATOR TRANS-SHIPMENT DOCK AND TRANSFER SCHEME, PUERTO PEÑASCO, MEXICO, ARIZONA PUBLIC SERVICE

Led a design Charette as Design Facilitator to develop a plan to create a fully removable dock facility for a heavy-load wheeled-crawler transfer of a nuclear power replacement steam generator. The dock design entailed crossing, without interfering with, a dynamic beach, sculpting and then restoring a breach in a dune, and constructing a causeway across an estuary. Sensitive transfer criteria required positive barge draft control throughout a four-meter tidal cycle to limit differential movement between barge and dock during crawler transfer.

PORT OF LA CROSSE HARBOR PLANNING, LA CROSSE WI

Directed an economic forecast and market demand study to determine future trends in waterborne commerce using the Port of La Crosse. Reviewed existing harbor infrastructure status and capacity on a system wide basis and then compared capacity to demand. Prepared a harbor development master plan to zone various functions and activities given both navigability constraints of the river and harbor backland capacity to accommodate docking needs. Assessed physical constraints to berth and offload various vessel types and sizes given challenging maneuverability in strong river currents, restrictive water depths and narrow channel widths. Evaluated upland land uses and traffic networks to assess site accessibility and feasibility for introducing various new product, from bulk to boutique, to the Port.

HARBOR RECONFIGURATION, BUFFINGTON HARBOR, GARY, INDIANA, PRESIDENT CASINOS, INC.

Performed harbor reconfiguration and breakwater design, model testing, ship maneuverability analysis, permitting and final design. Created a protected harborage for berthing casino boats in an active industrial port.

WEST DOCK EXTENSION, BURNS INTERNATIONAL HARBOR, INDIANA, INDIANA PORT COMMISSION

Directed analysis of berthing tranquility, moored vessel motions, and harbor agitation associated with new dock construction. Analyzed impacts of breakwater transmission and reflection, potential erosion of marine habitat areas, and remedial solutions.

BURNS HARBOR AGITATION STUDY, PORTAGE, INDIANA, INDIANA PORT COMMISSION

Evaluated wave transmission through breakwater and entrance diffraction. Modeled interior wave propagation, reflection, and damping. Determined wave motions and velocities at berthing locations. Evaluated impact on moored ship motions.

BARGE COLLISION ANALYSIS, ADMIRAL CASINO, ST. LOUIS, MISSOURI, PRESIDENT CASINOS, INC.

Directed an analysis of risk of barge collisions as a function of moorage locations, river hydraulics, and tow operations. Differentiated risk levels and mooring plans for safe siting on a casino adjacent to the main navigation channel.

DRAYTON HARBOR DISPOSAL ISLAND DESIGN, BLAINE, WASHINGTON, PORT OF BELLINGHAM

Performed design evaluation of a dredging scheme and construction of a submerged disposal island to encapsulate poor quality material and create new shallow water habitat for mariculture.

KILL VAN KULL DREDGE DESIGN REVIEW, NEW YORK, U.S. ARMY CORPS OF ENGINEERS

Directed engineering review of final design documents for dredging and disposal activities. Review included geotechnical, blasting, excavation materials handling, and final placement methods and materials.

KILL VAN KULL - NEWARK BAY CHANNELS NAVIGATION DEEPENING PROJECT, NEW YORK HARBOR, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Directed the re-evaluation of the economics, geotechnical, structural design, cost engineering and beneficial reuse design of disposal material from deepening the navigation channels to demonstrate cost benefit.

ARTHUR KILL CHANNEL - HOWLAND HOOK MARINE TERMINAL NAVIGATION DEEPENING STUDY, NEW YORK HARBOR, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Directed the re-evaluation of the economics, geotechnical, structural, cost engineering and dredge material characterization and disposal design related to deepening the navigation channels to demonstrate cost benefit.

FLOOD WALL DESIGN, GOWANUS CHANNEL, NEW YORK, NY, WHOLE FOODS

Formulated design concept for protecting a commercial warehouse situated in the flood plain. Analyzed seawall requirements including underwall seepage in 100-year flooding event. Prepared performance specifications for mechanical flood gates for vehicular access points, stops logs for building perimeter protection, and architecturally styled removable window shutter systems for penetrations below flood level.

CONEY ISLAND BEACH STABILIZATION AND TEE GROIN DESIGN, LONG ISLAND, NY, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Formulated design concept for a system of pocket beaches and tee groin structures to stabilize the western end of Coney Island. Assessed littoral processes and applied theories of crenulate beaches and headland features to define stable equilibrium shoreline planforms. Created design methodology to determine size, placement, geometry and orientation of structures in a bi-directional wave climate.

COASTAL FLOOD PROTECTION DESIGN FOR HIGHLANDS, NJ, NEW YORK, NY, U.S. ARMY CORPS OF ENGINEERS, NY DISTRICT

Evaluated alternative flooding and wave reduction design concepts to protect urban shoreline infrastructure. Assessed benefits of offshore and nearshore breakwaters and berms, vertical and recurved seawalls, building floodproofing concepts, and interior dunes/levees, buried revetments and movable floodgate and floodwall concepts. Developed preliminary design solutions based on overtopping impacts at various levels of return period, risk and uncertainty.

COASTAL FLOOD PROTECTION DESIGN FOR KEYPORT, NJ, NEW YORK, NY, U.S. ARMY CORPS OF ENGINEERS, NY DISTRICT

Evaluated alternative flooding and wave reduction design concepts to protect urban shoreline infrastructure. Assessed benefits of offshore and nearshore breakwaters and berms, levee systems vertical and recurved seawalls, and floating wave attenuator schemes. Developed preliminary design solutions based on overtopping impacts at various levels of return period, risk and uncertainty.

CLIFFWOOD BEACH SEAWALL FAILURE ANALYSIS, U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT

Provided forensic analysis of potential seawall collapse and bluff slope failure in support of feasibility study.

ECO-SENSITIVE SHORE PROTECTION DESIGN FOR JAMAICA BAY WETLANDS SHORELINES, NEW YORK, NY, U.S. ARMY CORPS OF ENGINEERS, NY DISTRICT

Developed shore protection concept designs including pocket beach/Tee-groin systems, coastal lagoons, detached breakwater systems, perched cobble beaches, panel breakwalls, and floating wave attenuator systems to preventing future retreat and loss of coastal wetland areas without introducing shoaling and sedimentation which could chock and bury the sensitive ecosystem. Formulated specific guidelines and concepts to incorporate natural habitat features in the protection systems and establish minimum performance thresholds for bio-engineering solutions.

SEAWALL DESIGN REVIEW, LEONARDO, NJ, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Evaluated the stability, overtopping and wave reflection characteristics of a seaward battered sheet pile seawall with fronting rubble berm. Developed recommendations for tolerable overtopping conditions and assessed impacts of wave resonance and reflections on structure stability and beach scour.

JONES INLET GROIN EXTENSION PROJECT, LONG ISLAND, NEW YORK, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Developed a design of a 150-foot long extension to an existing groin on the west side of Jones Inlet. Determined the orientation and length of the groin to reduce sediment bypassing of the structure, and prepared construction plans and contract specifications.

DEAL LAKE MARINE OUTFALL DESIGN, NEW JERSEY COAST, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Facilitated a value engineering study to develop a design to extend an outfall through the surf zone and maintain fish migratory capacity. Directed three-dimensional movable bed model studies of shoreline impacts. Managed final design of the outfall extensions through a beach fill including wave analysis, structural design, pile testing, and use of composite materials and construction methods.

BEACH RENOURISHMENT AND REVETMENT PROJECT, CONEY ISLAND AREA STORM ·DAMAGE PREVENTION PROJECT, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Developing a design for a 60-foot closure revetment to a terminal groin to replace a failed temporary revetment. Developing plans and specifications for beach renourishment, including backpassing material from a downdrift accretion area.

SPUR JETTY DESIGN REVIEW, SHINNECOCK INLET, NEW YORK, NEW YORK DEPARTMENT OF STATE

Directed evaluation of updrift and downdrift spur attachments to jetties for controlling shoreline erosion and channel sedimentation.

MARINE OUTFALL DESIGN, NEW JERSEY COAST, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Developed final design of ten outfall extensions through a beach fill including wave analysis, scour assessment, structural design, pile testing, and use of composite materials and construction methods. Design required formulation of a new wave loading calculation for surf zone conditions.

MARINA WAVE ATTENUATOR SYSTEM, BUFFALO HARBOR, NEW YORK, CONFIDENTIAL CLIENT

Designed and model-tested an innovative ice-resistant sloping float wave attenuator system for conversion of a commercial slipway to function as a marina basin at Seaway Piers.

SHINNECOCK INLET WEST JETTY MODIFICATION, SOUTH HAMPTON, NEW YORK, U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Conducted a feasibility level study to assess the existing site conditions and ascertain the causes leading to the deterioration. Preconstruction engineering and design (PED) was provided to develop an alternative to counteract the deterioration. Specific tasks included assessment of the general condition of the structure, data analyses, coastal analyses, storm damage projections, repair recommendations and drawings for reconstruction.

US COAST GUARD STATION ROCHESTER, USCG CLEVELAND

As Principal Engineer, performed wave studies to devise mitigation designs for surge and harmonic wave action in the boat launch well and berthing area at the jettied entrance of the Genesee River to Lake Ontario. Developed revised basin and entrance geometries and dockage plans to minimize berthed vessel movement and damage and increase emergency response readiness.

FT PIERCE MARINA BREAKWATER, FT. PIERCE, FL

Directed movable bed model testing of an island breakwater scheme to protect marina. Conducted three-dimensional testing with integrated tidal currents and simulated storm wave events. Examined erosional response of pocket beaches and artificial headlands embedded into island geometry. Introduced an interwoven rock island archipelago in lieu of continuous breakwall as more environmentally sympathetic protection scheme. Verified artificial island construction details in larger scale wave flume tests.

MIDDLE BASS MARINA

Examined wave transmission characteristics through a proposed jettied harbor entrance. Adjusted jetty length and orientation to reduce costs. Confirmed wave agitation levels at entrance mouth and resolved vessel safe maneuvering issues during storm events. Confirmed harbor agitation levels along wetland banks to verify bioengineering shore protection potential. Tested stability of crescentic pocket beach design.

DESTINATION BROADWATER STORM PROTECTION, BILOXI MISSISSIPPI, PRESIDENT CASINOS, INC.

Conducted three-dimensional wave testing of a breakwater scheme to protect a planned marina basin and a floating casino complex against hurricane events. Studies examined the navigational conditions under normal operating scenarios in both the entrance channel at in the berths. Simulations of Hurricane Camille waves and water levels examined the safety of the large floating casino buildings during design severe events. Seawall design and harbor breakwater plans were adjusted to achieve acceptable storm protection.

BUFFINGTON HARBOR AGITATION, GARY, INDIANA, PRESIDENT CASINOS, INC.

Conducted three-dimensional model testing of a converted industrial harbor to determine impact of wave reflections on harbor agitation and operations at an existing commercial dock.

HAMMOND MARINA BREAKWATER

Tested unique dual breakwater concept consisting of a submerged outer reef structure backed by a reduced size main breakwater. Verified combined wave transmission and overtopping characteristics for hyper breaking waves. Confirmed required rock armor size for stability and explored reef porosity effects on wave transmission.

OIL SPILL LABORATORY EVALUATIONS, U.S. ENVIRONMENTAL PROTECTION AGENCY

Conducted a laboratory evaluation of oil spill behavior under various simulated environmental conditions including oil spread under ice, oil interaction with a beach face, and wave-excited dispersant of oil.

EDUCATION

Bachelor of Landscape Architecture – Honors
Michigan State University, 2000

REGISTRATIONS

CLARB Certified
State of Colorado #0001154
State of Florida #66669988
State of Michigan #3901001548

MILITARY AWARDS

Valorous Unit Award
Combat Infantry Badge
Army Commendation Medal
Army Achievement Medal
Armed Forces Expeditionary Medal
Humanitarian Service Medal
National Defense Medal
Army Service Ribbon

MICHAEL MEYERS, PLA

Director of Landscape Architecture

Michael Meyers has over twenty years of experience in the planning and design of the public realm, with an emphasis on implementation of sustainable built landscapes, urban waterfront environments, and high-end resort planning and design. His project experience spans waterfront parks, marinas, master planned communities, urban revitalization, streetscapes, parks and recreation facilities, private luxury homes and resort developments. Prior to his role as Director of Landscape Architecture for Edgewater, Mr. Meyers spent 18 years with EDSA as Vice President where he gained notable expertise and experience in luxury resort design in Florida, the Caribbean and beyond.

BAHA MAR HOTELS

Baha Mar is a one of a kind 5-star resort complex located on Cable Beach, New Providence, Bahamas. This complex is home to four hotels: Rosewood, Hyatt, SLS, and Owner Operated Casino Hotel. Each hotel has its own pool. There are beachside amenities, shark aquariums, flamingo exhibits, and the feature blue hole beach side pool. The project's total construction budget was $80 million. While at EDSA, Michael Meyers participated in this design build project as designer, on-site supervisor, and construction coordinator of the beachside and pool amenities in conjunction with Valley Crest Development, ADE Aquatic Engineering, SPX Engineering, AECOM, Osprey Construction and many others.

CONRAD PLAYA MITA

The Conrad Playa Mita is located just north of the famed Punta Mita in Nayarit, Mexico. This was a redevelopment of an existing hotel resort property within a Fonatur master planned development. While employed at EDSA, Michael Meyers provided pre-land acquisition services to establish feasibility for the redevelopment. Once acquired, working with S.B. Architects, Mr. Meyers provided site planning, design and landscape architecture through design development for a 325 room Conrad Hotel. This design includes three pools, a poolside bar and grill, 3 meal beach restaurant, specialty point restaurant, spa, ball rooms, tennis courts, gardens and water features. The project is currently under construction.

PUERTO LOS CABOS

Located on a pristine stretch of coastline along the Sea of Cortez, just east of the San Jose del Cabo estuary, Puerto Los Cabos is a 2,000-acre, master-planned, mixed-use resort community. The community encompasses gated residential neighborhoods, hotels, golf courses, a world-class marina with upcoming marina village, botanical and sculptural gardens, and the Puerto Los Cabos club. The club provides full-service access for all homeowners with a complete suite of anticipatory service and unparalleled amenities. While at EDSA, Mr. Meyers worked as both project manager and designer on the land planning effort at Puerto Los Cabos. The goal of the project was to create the vision for a world class resort destination. The key to this vision was to develop a land use plan that exceeded the current market demands and had the flexibility to evolve with the ever-changing markets allowing Grupo Questro to partner with developers or sell development parcels to third parties for years to come. This planning and design effort was produced in conjunction with project partners at EDSA (Planning), Gran Vision (Architecture), ATM (Coastal and Marine Engineers), Jack Nicklaus Design and Greg Norman (Golf Course Designers).

NEVIS FOUR SEASONS RESORT

While at EDSA, Michael Meyers worked for BMGI on the redevelopment efforts for the Four Seasons Resort in Charlestown, Nevis. The goal of the project was to provide the client with an overall assessment of the property and to identify critical projects that would bring the property and resort to the forefront of luxury Caribbean resorts while maintaining the original charm of the property. As part of the project, Mr. Meyers conducted an on-site workshop and produced final client concepts using traditional hand graphics, Photoshop, AutoCAD, Sketchup, and Microsoft Office tools. The final deliverable included order of magnitude cost estimates schematics through construction documentation of identified projects.

ARA MACAO RESORT

The Ara Macao Resort & Marina is located on the Placencia Peninsula in Southern Belize, Central America. The Ara Macao Resort & Marina Master Plan currently offers 34 Ocean front home sites, 48 Ocean front Condos and 24 Marina Condos. The Resort will feature a 96-slip marina, with direct access to the Caribbean Sea. Phase II plans for a boutique hotel along with 3 additional mid-rise buildings and additional Marina Condominiums. Mr. Meyers has carefully planned and integrated the landscape to create a residential community nestled within the native habitat of coastal Belize. Named for the native Scarlett Macau, the project will protect habitat while creating a beautiful new community.

OTHER NOTABLE PROJECT EXPERIENCE

Bella Mesa - Castle Rock Colorado
Bimini - Bimini, Bahamas
Caneel Bay Rosewood - St. Johns, US Virgin Islands
Chub Cay - Berry Island, Bahamas
Costa Verde - Panama City, Panama
Crocker Properties - Jacksonville, Florida
Dhirubhai Ambani Convention Center - Mumbai, India
Dream Plaza - Panama City, Panama
Disney Port and Straw Market - Grand Bahama, Bahamas
Four Seasons - Exuma, Bahamas
Four Seasons - Almaty, Kazakhstan
FAU Football Stadium - Boca Raton, Florida
The Hills - Panama City
Horseshoe Casino - Cincinnati, Ohio
Horseshoe Casino - Bosier City, Louisiana
Hard Rock Resort and Casino - Tampa, Florida
Hollywood Hard Rock and Casino - Hollywood, Florida
Las Mareas - Jobo, Costa Rica
Mission Hills Lavastone Resort – Haikou
Now Natura, Cancun, Mexico
North West Point - Providenciales, Turks and Caicos
Old Bahama Bay - Grand Bahama, Bahamas
Panama Yacht Club - Panama City, Panama
Paradiso del Mar - Lapaz, Mexico
Peninsula Maya - Yucatan, Mexico
Pompano Pier Fishing Village - Pompano, Florida
Port St. George - Long Island, Bahamas
Puerto Los Cabos - San Jose Del Cabo, Mexico
Ritz Reserve - San Jose Del Cabo, Mexico

EDUCATION

Bachelor of Science, Civil Engineering

Michigan Technological University, 2016

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE) Broward County Chapter

ASCE – Coast, Oceans, Ports, and Rivers Institute (COPRI) South Florida Chapter

South Florida Association of Environmental Professionals (SFAEP)

Treasure Coast Association of Environmental Professionals (TCFAEP)

CERTIFICATIONS

Engineer in Training (EIT), State of Michigan, 2016

PADI Open Water Diver, 2018

Florida Fish and Wildlife Conservation Commission – Living Shorelines for Marine Contractors Training Course, 2019

MICHAEL KENNY, EIT

Staff Engineer | Project Manager

Mr. Kenny has cultivated a variety of experience and expertise within the industry including field surveying, environmental permitting, marina planning, marine structural design, construction administration, project management, shoreline protection and beach preservation, hydraulic modeling, and feasibility analysis. He has played a key role on many marina and waterfront projects since joining Edgewater Resources in 2016. Michael first gained experience while working for his father's construction company developing luxury waterfront homes and boathouses and through several engineering internships while attending school. Michael is proficient in AutoCAD and AutoCAD Civil 3D, HEC-RAS, ST-Wave, CHAMP, Microsoft Office and is quickly gaining experience as a project engineer and manager as he continues to work towards obtaining his professional engineering license within the next year.

PROJECT EXPERIENCE

PALM BEACH TOWN DOCKS REPLACEMENT PROJECT

Project Engineer/ Project Manager

CLIENT: Town of Palm Beach

The Palm Beach Town Docks have undergone several renovations in years past, however as demand increases for larger yacht slips the facility is receiving a much needed renovation. The marina will accommodate vessels upwards of 200' in length and provide associated utility services that meet current industry standards. Mr. Kenny has served as project engineer offering independent technical review of the proposed marina design and development engineering plans for various site elements including pile supported overwater building platforms, upland access, and upland civil infrastructure improvements. This $35M multi-phase project has required diligent scheduling, planning, coordination, and value engineering efforts.

F3 MARINA – AUTOMATED DRYSTACK MARINA

Project Engineer/ Project Manager

CLIENT: F3 Marina

This state of the art facility will be the first fully automated drystack marina open to the public. Located on Fort Lauderdale's 16th street canal, the project location is within 1 mile to ocean access through Port Everglades. Mr. Kenny is serving as the project manager for all marina elements, site civil work, and upland landscape design. The project site will be fully developed as Edgewater is working with a team of architects and engineers to complete the project. Mr. Kenny is responsible for managing design and installation of a new bulkhead and slipway, new floating docks, and adjacent upland elements near the water's edge. This ongoing $25M project is expected to be completed and open to the public by the end of 2020.

CAROLINE BAY MARINA, BERMUDA

Assistant Project Engineer

CLIENT: George's Bay Limited

Caroline Bay Marina is a luxury marina on the south side of Morgan's Point in Southhampton, Bermuda. The facility features floating concrete wave attenuators protecting aluminum-framed floating docks on the interior with concrete floats and high-end furnishings. The facility can accommodate 100+ vessels and caters to 200' superyachts with its Mediterranean-style mooring system for larger vessels. Mr. Kenny served as the assistant project engineer in the design, permitting, bidding,

contracting and construction management phases of the marina project. In addition, the $7M marina facility required coordination and integration with an adjacent $200M upland development in which Mr. Kenny assisted in designing and coordinating site utility, pedestrian, and structural connections between the two projects with teams of other consultants.

ANGUILLA MEGAYACHT FEASIBILITY STUDY

Project Engineer
CLIENT: Government of Anguilla
Edgewater Resources was retained by the Government of Anguilla (GOA) to perform a megayacht feasibility study including a marina market analysis, environmental evaluation, coastal dynamic considerations, development of conceptual plans, and preliminary engineering of potential marina project locations. An overall site assessment was conducted to collect information that was then utilized in site selection and concept development. Preliminary design and construction estimates have been performed for 5 different marina sites in Anguilla. Mr. Kenny's was well involved in all aspects of this project from site assessment and data collection to development of preliminary design concepts with associated construction budgets.

MELBOURNE RIVERWALK MARINA PROJECT

Project Engineer
CLIENT: Murpuri Group
Project Engineer responsible for conducting existing conditions topographic and bathymetric surveys, conducting bulkhead assessment, developing preliminary marina engineering plans and permit sketches. The former fixed pier marina has been destroyed by hurricanes of years past. Mr. Kenny has coordinated with Edgewater's landscape architects and permitting experts to develop marina plans and associated upland reconfigurations that will implement the City of Melbourne's proposed river walk plans into the project.

BASS PRO SHOP/ ISLAMORADA FISH COMPANY MARINA ENHANCEMENTS

Project Engineer
CLIENT: Bass Pro Shops
Project Engineer responsible for conducting a marine structural assessment post Hurricane Irma in 2017 within both the Islamorada Fish Company basin and the Bass Pro Shops basin to document the existing conditions and provide recommendations for future site improvements. The Bass Pro Shops Marina was recently renovated and in good condition, however other structures on the property appear to be beyond their design life. Edgewater prepared permit sketches and process all environmental regulatory permits for replacement of the bulkhead and docks within the Islamorada Fish Company Basin and their unique over water dining area. Environmental regulatory permits were also secured to perform dredging of silted areas within the Bass Pro Shops Marina basin. Mr. Kenny is responsible for conducting topographic and bathymetric surveys, marine structural assessment, developing permit sketches, final design drawings, and soliciting bids from several marine contractors to perform the work, and monitoring construction of the project. The upgrades are expected to be completed by 2020.

GRADY MARINE SEAWALL PROJECT

Project Engineer
CLIENT: Peter Grady
Project Engineer responsible for designing and planning the on-going permitting of an Environmental Resource Permit from the Florida Department of Environmental Protection, a Corps Individual Permit, and an Environmental Resource License from Broward County for the reconfiguration of the uplands and redesign of the existing bulkhead at the Grady Marine Property in Dania, Florida. The bulkhead had exceeded its design life and was in need of replacement, to enable the landowner/applicant to continue to access their property during and after the FDOT constructs the new bridge lanes on the overpass of I-595.

EAST TAWAS STATE HARBOR MARINA EXPANSION

Assistant Project Engineer
CLIENT: State of Michigan Department of Natural Resources
The State of Michigan engaged Edgewater Resources in the condition assessment, market analysis, boater survey, and master planning of expansion of the existing state harbor facility in East Tawas, Michigan. Following successful completion of the initial planning process, a phasing plan was developed to create a financially realistic project that allowed the Client to see the vision through implementation. Detailed design of the overall project includes a new pedestrian promenade, fuel system, removal of outdated fixed and floating piers, and new modern floating dock and wave attenuator infrastructure within the protected marina basin. Mr. Kenny assisted with regulatory permitting, final design and construction document development, construction surveying, and construction administration. Construction of Phase One and Phase Two was completed in 2017 and 2018 respectively. The final phase of this project is expected to be completed in 2020.

SOUTH CAPITAL STREET MARINA PROJECT

Project Engineer
CLIENT: John H.C. Barron, Jr.
Edgewater was retained to conduct assist the client, who's property was taken through imminent domain, determine the highest and most profitable use of the property's riparian rights based on what is commercially feasible and reasonably probable to be permitted. Assisted with the background research, development of a marina market assessment, conceptual alternatives for development, code and agency review analysis, financial analysis and the writing of a report on findings.

TOWN OF JUPITER ISLAND BEACH RESTORATION MONITORING

Field Engineer
CLIENT: GBA
Field Engineer assisting in pre-construction monitoring of the nearshore hardbottom off the Town of Jupiter Island in conjunction with the Town's Beach Nourishment Project. Monitoring included the collection of BEAMR data within 1m2 quadrats, interval sediment depth measurements and line intercept and qualitative video surveys along permanently installed shore perpendicular transects.

"THE BAY' IN SARASOTA MARINE RESOURCE PROJECT

Field Engineer
CLIENT: William D. Waddill
Assisted in conducting marine resource assessment of 43 acres of submerged lands within Sarasota Bay in Sarasota County Florida. Identified seagrass species and density, as well as, coral identification and dimensions. Surveying equipment was used

to record the respective locations of found resources to create representative base maps. A comprehensive report and base maps were created to assist the City in avoiding and minimizing impacts to resources as part of their proposed redesign of the "Bay" waterfront.

GRAND RIVER WATERWAY DREDGING FEASIBILTY

Assistant Project Engineer
CLIENT: State of Michigan Department of Management, Technology and Budget
As part of the dredging feasibility study, a bathymetric survey was performed on roughly 26 miles of the Grand River between Grand Rapids and Grand Haven, MI. The survey data was used to calculate the estimated dredging efforts that would be required the achieve a navigable waterway for vessels with drafts up to 8' in depth. Mr. Kenny was responsible for receiving and processing all bathymetric survey and side scanning sonar imagery data, analyzing historic river stage data, and developing a preliminary dredge plan. Estimated costs were included as part of the overall engineering report.

BIG GRAND TRAVERSE BAY EMERGENCY DREDGING

Assistant Project Engineer
CLIENT: State of Michigan Department of Management, Technology and Budget
An emergency dredging permit was obtained for the dredging of approximately 9,000 CY of stamp sands that had migrated from the adjacent beach into the federal navigation channel located at Big Traverse Bay, MI. The project was permitted, bid, and completed on an aggressive timeline due to the imminent potential flooding hazard that was present due to the migrating stamp sands. The emergency dredging measures will be followed by a U.S. Army Corp's shore stabilization and spawning reef habitat mitigation project to establish a long term solution to the local issue of migrating stamp sands in this area. Mr. Kenny was responsible for conducting the pre and post construction topographic and bathymetric surveys, preparing permit sketches and final design drawings. Mr. Kenny also assisted with bid solicitation and construction administration for this project.

SOUTH FOX ISLAND MAINTENANCE DOCK FEASIBILITY STUDY

Project Engineer
CLIENT: State of Michigan Department of Natural Resources
The State of Michigan in partner with the South Fox Island Lighthouse Association retained Edgewater Resources to perform a feasibility study of establishing a mooring facility on South Fox Island. The site is located within the northern portion of Lake Michigan approximately 25 miles from Leland, MI. Components of the feasibility study included geotechnical testing and summary, bathymetric and topographic survey, coastal analysis, archeologic study, biological study, preliminary design, and value engineering alternatives. Mr. Kenny's responsibilities included conducting bathymetric and topographic surveys, overseeing the geotechnical investigation, biological and archeological study while onsite, and was also involved in the preliminary design and cost estimation of mooring facility alternatives.

HARRISVILLE HARBOR DOCK REPLACEMENT PROJECT

Project Engineer
CLIENT: The City of Harrisville, MI
Harrisville Harbor is public marina located in northeast lower Michigan on the Lake Huron shoreline. The existing facilities are 30+ years of age and in need of replacement, so Edgewater Resources was retained to perform an initial feasibility assessment of updating and improving the existing infrastructure to State of Michigan

and industry standards. The overall site improvements have been phased into several separate projects. Site improvements include the onsite evaluation, repair, and re-decking of existing fixed main pier, replacement of all utilities, replacement of floating dock system and gangway ramps, and the addition of a boater gathering platform that will be publicly accessible to the community. Mr. Kenny was involved early on assisting with bathymetric and topographic surveys, preparing permit drawings, final design drawings, bidding and construction administration. Phase Four of this project includes replacement of the south floating main pier to finalize completion of facility wide upgrades. This final phase is anticipated to be completed in 2020.

DOUGLAS WATERFRONT MASTER PLAN

Assistant Project Engineer
CLIENT: Village of the City of Douglas, Michigan
Edgewater Resources worked with the City of the Village of Douglas and the community to prepare a waterfront master plan for all properties and key adjacent parcels within the City limits. Edgewater lead the community outreach and stakeholder workshops for all elements of the waterfront, and working with business owners, residents, permitting agencies, and local interest groups. The goal of this effort was to perform a high-level assessment of all properties along the waterfront within the City limits to identify potential opportunities for enhancing public access to the waterfront, as well as identifying potential opportunities for mutually beneficial public/private partnerships and/or acquisition. Mr. Kenny helped to evaluate potential opportunities, which include expansion of public waterfront parks and access trails, creation of new watercraft access sites (canoe, kayak, etc), creation and/or acquisition of a municipal marina facility, improved ADA compliance, improved connections between adjacent neighborhoods and the waterfront, and facilitation of the long term harbor planning and dredging efforts.

DUNEWOOD CONDOMINIUM SHORELINE PROTECTION

Project Engineer
CLIENT: Private Condominium Association
Property owners along the Lake Michigan shoreline are experiencing large amounts of erosion with recent high water levels. Edgewater Resources is working with numerous public and private property owners to mitigate this problem by designing and implementing shoreline protection solutions to ensure the safety of upland structures that are at risk while maintaining high quality beach access. This project consisted of armoring approximately 400 LF of shoreline to prevent severe erosion. Mr. Kenny assisted in final design, bidding and construction administration, conducting weekly site visits, review and approval of pay applications and was integral in every step from permitting through construction.

OTHER PROJECTS

MARINA SANTA CRUZ, LA PAZ, MEXICO
ARA MACAO RESORT AND MARINA, BELIZE
BOAT LAUNCH REPAIR, CITY OF ROCHESTER, NY
LONG PIER EXTENSION, GENEVA, NY
WALL DRAIN PROJECT, BERRIEN COUNTY, MI
EAGLE HARBOR STATE HARBOR, EAGLE HARBOR, MI
MCPA RACKS & BARGE, MICHIGAN CITY, IN
OTTAWA BEACH MARINA, OTTAWA COUNTY PARKS, MI
WAUKEEGAN KAYAK LAUNCH, WAUKEEGAN, WI
OSWEGO RIVER DOCKS AND OVERWATER PLATFORMS, OSWEGO, NY

DOUGLAS PUBLIC MARINA, CITY OF VILLAGE OF DOUGLAS, MI
HOLLAND CIVIC CENTER, HOLLAND, MI
DISCOVERY CENTER MARINA, TRAVERSE CITY, MI
NORTH SHORE MARINA, SAUGATUK, MI
DETROIT WATER TAXI, DETROIT, MI
PARADISE VILLAGE DRYSTACK AND FUEL, PARADISE VILLAGE, MEXICO
NEW BALTIMORE TRANSIENT DOCKS, NEW BALTIMORE, MI
GALIEN RIVER STABILIZATION, NEW BUFFALO, MI
SAMPSON STATE PARK, SENECA LAKE, NY
ON THE RIVER TAVERN, ST. JOSEPH, MI
GANTZ DRAINAGE, LANTANA, FL
MARINE RESOURCE SURVEY, LANTANA, FL
MARINE RESOURCE SURVEY, JUPITER, FL
LAS OLAS MARINA, FT. LAUDERDALE, FL
WEXFORD MARINA, HILTON HEAD, SC
JOCKEY CLUB MARINA, MIAMI, FL
SWEETBAY MARINA, PANAMA CITY, FL
BRILAND CLUB MARINA, HARBOUR ISLAND, BAHAMAS
MACKINAC ISLAND BEACH, MACKINAC ISLAND, MI
FISHER ISLAND BULKHEAD ASSESSMENT, MIAMI, FL
WIBORG SEAWALL INSPECTION, POMPANO BEACH, FL
LAUDERDALE BY THE SEA RESORT, LAUDERDALE BY THE SEA, FL
TRIBUTE MARINA WAVE STUDY, THE COLONY, TX
TRIBUTE SHORELINE EROSION, THE COLONY, TX
CANYON LAKE WIND/WAVE STUDY, CANYON LAKE, TX
SHORELINE PROTECTION PERMITTING JOBS, LAKE MICHIGAN:

- LANCRY
- MARTINO
- NEW BUFFALO SHORELINE ALLIANCE
- GEISER
- FRYZEL – KILLERMANN
- TEHRANI
- SUNDANCE PATH
- BOTELHO
- MILLER-NORTH

EDUCATION
Bachelor of Science, Civil Engineering
Michigan State University, 2011

REGISTRATIONS
Professional Engineer
State of Michigan, 2015
State of Wisconsin, 2017
State of Idaho, 2018

E.I.T. CERTIFICATION
State of Michigan: 2011

AMERICAN SOCIETY OF CIVIL ENGINEERS
Member

PUBLICATIONS / LECTURES
"St. Joseph Coastal Study" FEMA Great Lakes Coastal Flood Study, 2012 & NOAA Great Lakes Coastal Resiliency Planning Guide, 2013

"Design & Construction of a Modern Floating Dock Facility" MSPE, Muskegon Chapter, 2015

COLIN HASSENGER, PE
PROJECT ENGINEER & PROJECT MANAGER

Colin Hassenger has an array of experience ranging from survey field work to shoreline protection design, marina design and construction oversight. Mr. Hassenger joined Edgewater Resources in 2011 and has since been extensively involved in numerous marina and waterfront projects. Mr. Hassenger has led the design and implementation of numerous waterfront project ranging from private residential shorelines to 100+ vessel municipal marinas.

EAST TAWAS STATE HARBOR MARINA EXPANSION
Project Engineer/Project Manager
Following successful completion of the initial planning process, Mr. Hassenger led the detailed design of construction Phase One, including a new pedestrian promenade, fuel system, and floating dock and wave attenuator infrastructure for 48 new slips was completed. Mr. Hassenger then led the design, bidding, contracting and implementation of Phase Two which included the demolition of over SF of fixed and floating piers with modern floating dockage and code compliant utilities.

PORT OF ROCHESTER MARINA
Project Engineer
The Port of Rochester Marina project includes the transformation of an underutilized asphalt parking lot and ship loading area into a new 180 slips marina serving both seasonal and transient boaters. As part of the overall project design team, Mr. Hassenger performed the design and implementation oversight of the marine-based elements of the project along with coordinating their connectivity to the surrounding site infrastructure. The facility opened Spring 2016 and remained fully functional during the record high Lake Ontario water levels of 2017.

DISCOVERY CENTER GREAT LAKES MARINA
Project Engineer
The Discovery Center Great Lakes is home to a range of community and non-profit organizations interpreting historic shipping and boating on the Great Lakes. This project created the master plan for a completely renovated waterfront and marina to provide homes for a number of historic tall ships, wooden sailing vessels, and the Traverse Area Community Sailing program. In addition, a number of seasonal and transient slips will be made available for lease to help fund non-profit activities and offset the cost of construction.

NELSON PARK MARINA
Engineer
The Nelson Park Marina project involved the replacement of existing functional obsolete municipal slips with a new durable system with modern utilities (electricity and potable water) along with a public promenade and gathering area. The project was Phase 1 of the greater Nelson Park Master Plan which includes the revitalization of the 180-acre Nelson Park and adjacent parkland along the shores of Lake Decatur in Decatur, Illinois, with the fundamental goal of achieving both financial stability for the park and spurring economic growth within the greater Decatur Economy.

TRAIL CREEK MARINA IMPROVEMENTS PROJECT

Engineer/Assistant Project Manager

Mr. Hassenger served as assistant project manager and construction inspector for the replacement of a dilapidated shoreline with a new durable seawall to allow for easier access and parking accommodation for the marina's patrons. The project also addressed some significant utility and site infrastructure deficiencies to correct potential hazards and create modern services. Mr. Hassenger was actively involved in the project from inception through completion.

BROOKLYN BRIDGE PARK MARINA

Engineer/Assistant Project Manager

Mr. Hassenger is currently working to help create a new luxury marina in Brooklyn, New York. The project involves the creation of a new marina facility with full accommodations for vessels from small sailing dinghies through 200'+ super yachts. The project site is a former industrial shipping pier that has been partially removed and repurposed into public park space, creating a unique set of challenges and design constraints. Due to its size and location, the project requires detailed utility routing analysis and coordination with the surrounding public park to ensure compatibility with the current layout along with the park's proposed future improvements.

CAROLINE BAY MARINA, BERMUDA

Project Engineer/Project Manager

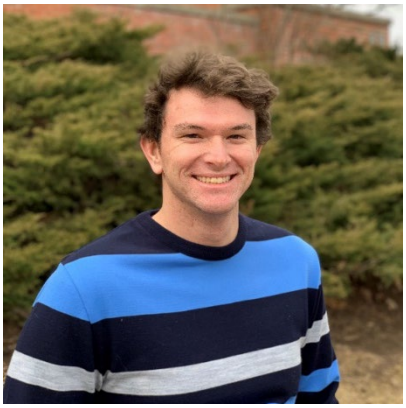
Caroline Bay Marina is a luxury marina on the south side of Morgan's Point in Southhampton, Bermuda. The facility features floating concrete wave attenuators protecting aluminum-framed floating docks on the interior with concrete floats and high-end furnishings. The facility can accommodate 100+ vessels and caters to 200' superyachts with its Mediterranean-style mooring system for large vessels. Mr. Hassenger was instrumental in the design, permitting, bidding, contracting and construction management of the marina. In addition, the $7M marina facility required coordination and integration with an adjacent $200M upland development in which Mr. Hassenger designed and coordinated utility, pedestrian, and structural connections between the two projects with teams of other consultants.

HARRISVILLE HARBOR

Project Engineer/Project Manager

CLIENT: City of Harrisville

Mr. Hassenger assisted the City of Harrisville and the Harrisville Harbor commission on the multi-phased reconstruction of their marina. Along with the Commission, Mr. Hassenger developed a phasing plan to reconstruct the entire marina facility over 4 years and in 4 phases to meet available grant funding and overall project budget requirements while still keeping the facility operational and income-generating between phases. The phased construction was coordinated with MDNR representatives to ensure grant requirements were satisfied and cost remained in budget. The first two phases of construction are currently complete while design of the third phases is in progress with a Spring 2019 anticipated starting date.



EDUCATION

Master of Science - Geotechnical Engineering
University of Wisconsin, Madison, WI 2016

Bachelor of Science - Geological Engineering and Geology
University of Wisconsin, Madison WI 2014

CERTIFICATIONS

Professional Engineer
State of Wisconsin 2021

NICK STEFANI, PE

ENGINEER

Mr. Nick Stefani is the Section head for Coastal and Geotechnical Engineering for Edgewater Resources. He is responsible for design, calculations, modeling and Quality Control of Edgewater's various waterfront and shoreline projects. Additionally, he manages the projects out of the Madison office. Prior to joining Edgewater, Nick worked on variety of geotechnical engineering projects including field work and design support at the Racine Hydroelectric dam in Ohio and at the Prairie du Sac dam in Wisconsin. Mr. Stefani's expertise is in shoreline protection and stabilization, eroding bluff stability, and dam design. Mr. Stefani obtained a dual bachelor's degree in Geotechnical Engineering and Geology from the University of Wisconsin – Madison in 2014 and a master's degree in Geotechnical Engineering from the University of Wisconsin – Madison in 2016.

COASTAL ENGINEER
ILLINOIS BEACH STATE PARK SHORELINE STABILIZATION, ZION, IL

The project goal is to provide shoreline stabilization to protect and enhance a six mile, highly eco-sensitive coastline on Lake Michigan. Managed an extensive sand survey over lakebed in front of the park to help determine if locally dredged sand could be used for the beach nourishment aspect of the project. The sand survey also included researching existing data and the permit requirements to dredge sand from Lake Michigan as beach nourishment is extremely uncommon in that water body. Provided oversight and design optimization while the proposed solution was tested in a physical model. The work included altering and refining structures to reduce costs and maximize shoreline stabilization.

COASTAL ENGINEER
WHISPERING STRAITS SHORELINE NATURAL STABILIZATION, KOHLER, WI

Assisted the design of a rock revetment to protect the golf course's shoreline while trying to maintain the site aesthetics. Evaluated the coastal processes and local shoreline responses to identify areas where naturally occurring retreat could be allowed to continue without impacting course operations, and where physical protection needed be added. Assisted in developing a solution mix of natural pocket beaches and low profile and absorbing stone revetments. The proposed engineering solutions needed to be invisible from the course, perched on the bluff above, to allow natural processes to proceed with as little interference to the golfer's sight lines as possible.

COASTAL ENGINEER
OGDEN DUNES SHORE PROTECTION, OGDEN DUNES, IN

Provided engineering design services to reduce extensive overtopping and erosion induced by high Lake Michigan water levels for the village of Ogden Dunes shoreline, including approximately 100 households. Two of the existing steel sheet pile walls had failed due to extensive toe scour in front of the wall. The work included coastal engineering calculations and modeling to design an engineering solution to address the overtopping and erosion. Services also included providing temporary measures to immediately address erosion issues. The final design was a rock revetment adapted to be placed quickly with smaller than typical stone due to local sourcing restrictions. The stone needed to be placed as quickly as possible due to two sheet pile walls completely failing.

COASTAL ENGINEER – PROJECT MANAGER
OAK CREEK SHORELINE STABILIZATION. OAK CREEK, WI
Provided engineering services to design a traditional rock revetment to mitigate wave inducted toe erosion. The project is unique in that the City of Oak must build into the lake, much more than typically allowed by the agencies, due to environmental and constructability constraints. Services also included monitoring the bluff for erosion after significant storms, field surveying for bathymetry, engineering support to obtain applicable grants for construction.

COASTAL ENGINEER
MANCORA MARINA, MANCORA, PERU
Assisted a variety of design services to support the design and construction of a marina and breakwater. The breakwater was also designed with spurs and extensions to contain a recreational beach using the diffraction of the waves. Services also included engineering reviews of currently constructed steel sheet pile walls and assisting with the design of a pile supported travel lift.

COASTAL ENGINEER
EGG HARBOR OVERTOPPING ANALYSIS, EGG HARBOR, WI
Provided engineering services to analyze excessive overtopping at Egg Harbor. When it was built in the 2000's, the marina was intentionally constructed low to limit obstructed sightlines. The Village was concerned about damaging overtopping due to the high water on Lake Michigan. Assisted in Coastal Engineering calculations to provide several solutions to mitigate excessive overtopping.

COASTAL ENGINEER
SOO LOCKS CHANNEL DEPTH EXPANSION, SAULT SAINT MARIE, MI
Assisted in providing engineering calculations and support for a contractor that will be channel deepening in the Soo Locks. Support included calculations for steel sheet pile cofferdams to allow dewatering of the channel so that excavation could be completed in the dry.

GEOTECNHICAL ENGINEER
GALESBURG DAM, GALESBURG, IL
Edgewater Resources was retained by The City of Galesburg for a feasibility and implementation study, planning and community engagement and real estate planning and development strategies regarding the construction of a dam that would expand Lake Storey in Galesburg, Illinois. Earthwork, materials, hydraulic and utility cost estimating was completed to understand the scope of work needed to expand the reservoir An extensive number of preliminary discussions with permitting regulators took place to assess potential project concerns at the regulatory level. All data and information were summarized for the city of Galesburg..

COASTAL ENGINEER
NEAL HARBOR RECONSTRUCTION, STURGEON BAY, WI
The private harbor on Lake Michigan is experiencing high water levels and an aging infrastructure and requires amendments to accommodate the high water and large fetch of wave exposure. Mr. Stefani assisted with a dive inspection to assess the quality of the existing armor stone. The findings were summarized and used to complete a preliminary engineering report to amend the existing harbor infrastructure.

COASTAL ENGINEER – PROJECT MANAGER
STURGEON BAY BOLLARDS, STURGEON BAY, WI
The City of Sturgeon Bay's public waterfront at the location of the Door County Maritime Museum wanted to redesign the existing walkway to make the waterfront more accessible to the public. In the same general location, a local tug company is leasing the bulkhead and requested additional bollards for mooring. Edgewater Resources created a design to add more bollards while using means and methods that prevented impacting the existing infrastructure of the bulkhead.

COASTAL ENGINEER – PROJECT MANAGER
KERN SHORELINE, FOX POINTE, WI
The Kern shoreline is a private residence with a shallow bluff located about 75 feet from the house. The bluff erodes with each storm event and the high Lake Michigan water level. The owner desired a "softer", lower impact shore protection system and a Geotube/Sandbag solution was designed and permitted to be installed to protect the bluff.

COASTAL ENGINEER
SOUTH BAY MARINA, GREEN BAY, WI
South Bay Marina is in Green Bay, WI and the marina received a Boating Infrastructure Grant to alter the marina opening. The marina current experiences adverse harbor tranquility and experiences significant damage on April 17, 2020. Additionally, the breakwater crest is being overtopped by weekly events under a high-water condition. Different gap openings and protection strategies were modeled.

COASTAL/GEOTECHNICAL ENGINEER
SOUTHPORT MARINA, SOUTHPORT, NC
Southport Marina experiences substantial damage to their docks and anchorage system during Hurricane Isiah. 90% of the piles failed and virtually all the docks were broken loose and significantly damaged. Edgewater Resources was asked to provide a peer review of the event and provide their professional opinion of the damage and help assess the probable failure mechanism. About 25% of the failed due to insufficient soil support at the base of the pile and the rest failed in shear or due to bending. The collected geotechnical data was reviewed and analyzed to help characterize the failure of the marina piles.

COASTAL ENGINEER – PROJECT MANAGER
BONNEAU-MYKLEBY SHORELINE, OGDEN DUNES, IN
These two private residences are experiencing adverse bluff erosion that will soon impact their lot's directly. Assisted in preparing conceptual solutions that will be located on the Town of Ogden Dunes property and the solution needs to balance the Town's and the private residences desires. Cost estimates were generated for the variety of engineered solutions. Site access is also extremely limited.

GEOTECHNICAL/FIELD ENGINEER
EXACT SCIENCES, MADISON, WI
Managed the Geotechnical Subsurface Investigation for the planning geotechnical design of the Exact Sciences Campus. Approximately 40 borings were advanced, including 4 pressure meter tests to justify higher than typical bearing capacity recommendations. The investigation also included testing for infiltration rates to be used for stormwater detention basin design. The structures included several

warehouse buildings, a three-story office building, and a five-story parking garage, stormwater basins for detention and infiltration, and asphalt pavement drives between buildings. After the geotechnical investigation, construction quality assurance services were provided. Services included, soil foundation checks, soil subgrade checks, concrete testing, post tensioning quality control, concrete temperature monitoring for mass pours, asphalt pavement testing, and fire proofing quality assurance. The parking garage decks were mass pours with approximately 800-1,000 cubic yards of concrete placed.

GEOTECHNICAL/FIELD ENGINEER
PRAIRIE DU SAC HYDROELECTRIC DAM, PRAIRIE DU SAC, WI

Provided field engineering services for an extensive mircopile foundation system installed at Prairie du Sac, Wisconsin. The dam is over 100 years old with a timber pile foundation that was replaced with a micropile system to extend the dam's life. The work included construction quality insurance and contractor support in a design build format.

GEOTECHNICAL/FIELD ENGINEER
RACINE HYDROELECTRIC DAM, RACINE, OH

Provided field engineering and engineering design services for a partially failed steel sheet cofferdam. The project was a design build project to construct a full dam replacement for the partially failed steel sheet cofferdam. The work included mass dredging, compaction grouting, dewatering wells, sheet piling, drilled shaft, secant piles, mass concrete pours, and geotechnical instrumentation installation and monitoring.

State of Florida
Department of State

I certify from the records of this office that EDGEWATER RESOURCES, LLC is a Michigan limited liability company authorized to transact business in the State of Florida, qualified on July 27, 2015.

The document number of this limited liability company is M15000009160.

I further certify that said limited liability company has paid all fees due this office through December 31, 2021, that its most recent annual report was filed on January 13, 2021, and that its status is active.

I further certify that said limited liability company has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Thirteenth day of January, 2021

Secretary of State

Tracking Number: 4946345886CC

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Ron DeSantis, Governor

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

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

SCHULTS, RONALD ERIC

103 LIGHTHOUSE DUNES PATH
SAINT JOSEPH MI 49085

LICENSE NUMBER: PE80101

EXPIRATION DATE: FEBRUARY 28, 2023

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Ron DeSantis, Governor

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

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

COX, JACK C

4853 TRIPLE CROWN COURT
MIDDLETON WI 53562

LICENSE NUMBER: PE46944

EXPIRATION DATE: FEBRUARY 28, 2023

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Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF LANDSCAPE ARCHITECTURE

THE LANDSCAPE ARCHITECT HEREIN HAS REGISTERED UNDER THE
PROVISIONS OF CHAPTER 481, FLORIDA STATUTES

MEYERS, MICHAEL HOWARD

33336 WYNDWICKE DRIVE
SAINT JOSEPH MI 49085

LICENSE NUMBER: LA6666998

EXPIRATION DATE: NOVEMBER 30, 2021

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"The Best Waterfront City in Which to Live, Work and Play."

CITY OF RIVIERA BEACH
ADDENDUM NO. 1

TO: ALL PROPOSERS

FROM: CITY OF RIVIERA BEACH PROCUREMENT DEPARMENT

SUBJECT: ADDENDUM NO. TWO (2) TO RFQ 1023-21-2, MARINE COASTAL ENGINEERING AND CONSULTING SERVICES

DATE: MARCH 15, 2021

CC: GENERAL PUBLIC

A. **NOTICE: The purpose of this Addendum is to address Requests for Information (RFIs) and provide a written response. All other terms and conditions of the solicitation remain unchanged.**

QUESTIONS AND ANSWERS:

1. 20-page limit – double or single sided? How are pages counted?

   Answer: *The pages can be double sided; the intent is to limit the length of the response in order to obtain succinct responses.*

2. Does the 20-page limit include the tabs?

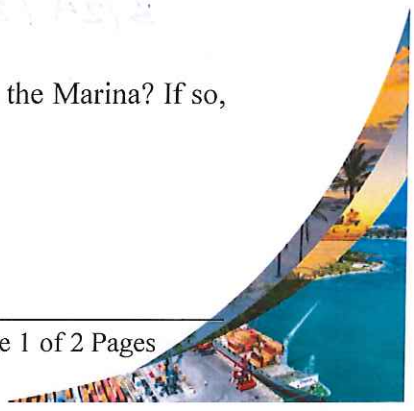
   Answer: *No, the tabs are not counted as pages.*

3. Does the 20-page limit include the title page/TOC?

   Answer: *No. The table of contents are excluded from the page count.*

4. Is the City currently working with a consultant on this type of work on the Marina? If so, with whom?

   Answer: *The current Engineering Consultant is Sea Diversified, Inc.*



5. Regarding your recent RFP, Marine Coastal Engineering RFQ-RFQ 1023-21-2-0-2021/AP, I have been trying to locate the identity of the incumbent for your coastal engineering work, but have been unable to find the information on your website or through opportunity online vendors. Would it be possible to disclose the name of the company awarded earlier contracts?

   Answer: *The current Engineering Consultant is Sea Diversified, Inc.*

6. Do you wish us to submit resumes? If so, are they in the 20-page count?

   Answer: *Yes. They are a part of the 20 double-sided page count.*

7. For your local participation goal, what does 'local' mean? Does the City have specific goals for types of firms or professionals working on the project?

   Answer: Local means firms within the City limits and Palm Beach County, our goal is 15%.

8. What is the primary driver for this RFQ? What does the City hope to achieve through this coastal engineering work?

   Answer: *The City seeks to obtain engineering consulting services for on-going projects at the Marina.*

Addendum No. 2 must be signed as acknowledgment of receipt, and attached to the proposal when submitted at **3:00 p.m., Wednesday, March 24, 2021** at the Office of the City Clerk, 600 W. Blue Heron Boulevard, Suite 140, Riviera Beach, Florida, 33404. For information on this solicitation, please contact:

Althea Pemsel, Director of Procurement
1481 West 15th Street
Riviera Beach, FL 33404
apemsel@rivierabeach.org

EDGEWATER RESOURCES
NAME OF COMPANY

PROPOSER'S SIGNATURE

3/24/2021
DATE

RONALD SCHULTS
PROPOSER'S PRINTED NAME

NOTICE

ADDENDUM NO. ONE (1) **FEBRUARY 25, 2021**

CITY OF RIVIERA BEACH
RFQ NO. 1023-21-2
MARINE COASTAL ENGINEERING AND CONSULTING SERVICES

TO ALL PROPOSERS ON THE ABOVE PROJECT: PLEASE NOTE CONTENTS HEREIN AND AFFIX (PASTE OR STAPLE) TO PROPOSAL DOCUMENTS YOU HAVE ON HAND.

The following statements supersede and supplant corresponding items in the above subject proposal as follows:

GENERAL INFORMATION:

SPECIFICATION:

PLANSHEETS:

I. NOTICE: PLEASE SEE REQUIRED FORMS BELOW TO BE COMPLETED AND SUBMITTED WITH YOUR PROPOSAL.

It will be required that Addendum No. 1 be signed in acknowledgment of receipt and that it be attached to the proposal when same is submitted at **3:00 p.m., Wednesday, March 24, 2021** at the office of the City Clerk, 600 W. Blue Heron Boulevard, Suite 140, Riviera Beach, Florida. For information on this RFQ, please contact:

Althea Pemsel, Director of Procurement
1481 West 15th Street
Riviera Beach, FL 33404
apemsel@rivierabeach.org

EDGEWATER RESOURCES
NAME OF COMPANY

PROPOSER'S SIGNATURE

DATE: 3/24/2021

BIDDER'S CERTIFICATION

I have carefully examined the Invitation to Bid, Instructions to Bidders, General and/or Special Conditions, Specifications, Bid Proposal and any other documents accompanying or made a part of this invitation.

I hereby propose to furnish the goods or services specified in the Invitation to Bid at the prices or rates quoted in my bid. I agree that my bid will remain firm for a period of up to ninety (90) days in order to allow the City adequate time to evaluate the bids. Furthermore, I agree to abide by all conditions of the bid.

I certify that all information contained in this bid is truthful to the best of my knowledge and belief. I further certify that I am duly authorized to submit this bid on behalf of the vendor / contractor as its act and deed and that the vendor / contractor is ready, willing and able to perform if awarded the bid.

I further certify that this bid is made without prior understanding, agreement, connection, discussion, or collusion with any person, firm or corporation submitting a bid for the same product or service; no officer, employee or agent of the CITY OF RIVIERA BEACH or of any other bidder interested in said bid; and that the undersigned executed this Bidder's Certification with full knowledge and understanding of the matters therein contained and was duly authorized to do so.

EDGEWATER RESOURCES
NAME OF BUSINESS

BY: _____
SIGNATURE OF AUTHORIZED OFFICER

RONALD SCHULTS
PRINTED NAME AND TITLE

2001 NORTH FEDERAL HWY, G204
MAILING ADDRESS

POMPANO BEACH FL 33062
CITY, STATE, ZIP CODE

269 - 876 - 9300
TELEPHONE NUMBER

FAX NUMBER

VSCHULTS@EDGEWATERRESOURCES.COM
E-MAIL ADDRESS

Sworn to and subscribed before me this 24TH day of MARCH, 2021.

_____
SIGNATURE OF NOTARY

MY COMMISSION EXPIRES: 9/26/2023

PERSONALLY KNOWN ✓

ELLEN A. SKEELE
MY COMMISSION # GG916917
EXPIRES: September 26, 2023

OR PRODUCED

IDENTIFICATION_____

TYPE: _____

ADDENDUM PAGE

The undersigned acknowledges receipt of the following addenda to the Request to Qualify (indicate number and date of each):

Addendum No. 1 Dated 2/25/2021

Addendum No. 2 Dated 3/15/2021

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

EDGEWATER RESOURCES
COMPANY

ROM
SIGNATURE

PRINCIPAL
TITLE

DRUG FREE WORKPLACE

Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids, which are equal with respect to price, quality, and service, are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

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 contender 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 form complies fully with the above requirements.

THIS CERTIFICATION is submitted by RONALD SCHULTS the
(INDIVIDUAL'S NAME)

PRINCIPAL of EDGEWATER RESOURCES
(TITLE/POSITION WITH COMPANY/VENDOR) (NAME OF COMPANY/VENDOR)

who does hereby certify that said Company/Vendor has implemented a drug free workplace program which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

SIGNATURE

3/24/2021
DATE

CITY OF RIVIERA BEACH

NOTIFICATION OF PUBLIC ENTITY CRIMES LAW

Pursuant to Section 287.133, Florida Statutes (1995), you are hereby notified that a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 [F.S.] for CATEGORY TWO [$35,000.00] for a period of 36 months from the date of being placed on the convicted vendor list.

Acknowledged by:

EDGEWATER RESOURCES

Firm Name

Signature

RONALD SCHULTS

Name & Title (Print or Type)