CITY OF DELRAY BEACH
100 NW 1st AVENUE, DELRAY BEACH, FL 33444

AGREEMENT FOR PROFESSIONAL SERVICES

RFQ 2017-048 (918-42, 918-89, 906-56)

COASTAL SYSTEMS INTERNATIONAL, INC.

AGREEMENT
FOR
PROFESSIONAL SERVICES (CCNA)

AGREEMENT NO. RFQ 2017-048 (918-42, 918-89, 906-56)

THIS AGREEMENT is made and entered into this 31st day of August, 2017 (the "effective date"), by and between the **City of Delray Beach,** a Florida municipal corporation (hereinafter referred to as "City"), whose address is 100 NW 1st Avenue, Delray Beach, Florida, 33444, and **Coastal Systems International, Inc.,** a Florida corporation (hereinafter referred to as "Consultant"), whose principal address is 464 S. Dixie Highway, Coral Gables, Florida 33146.

WHEREAS, the City desires to retain the services of the Consultant to provide certain Professional Services in accordance with the City's Request for Qualifications RFQ 2017-048, Continuing Engineering, Surveying, and Landscaping Architectural Consulting Services (918-42, 918-89, 906-56), and the Consultant's response thereto, which are attached hereto and incorporated herein as Exhibit "A".

NOW, THEREFORE, in consideration of the mutual covenants and promises hereafter set forth, the Consultant and the City agree as follows:

ARTICLE 1. INCORPORATION OF REQUEST FOR QUALIFICATIONS

The terms and conditions of this Agreement shall include and incorporate the terms, conditions, and scope of services set forth in the City's Request for Qualifications, RFQ 2017-048, and the Consultant's response to the Request for Qualifications, including all addenda and documentation required thereunder.

ARTICLE 2. SCOPE OF SERVICES

The Consultant shall provide Professional Services to the City, under the following categories of work as defined in the Request for Qualifications:

a. Category(s)

i. Engineering Services
ii. Surveying/Mapping Services
iii. Landscape Architectural Services

The Consultant shall provide the services on an as-needed and project-by-project basis, based on work requests from City departments through the issuance of Service Authorizations.

ARTICLE 3. COMPENSATION

The City shall pay the Consultant for performing the Services based on the Prices and Rates shown in Exhibit "B", which is attached hereto and incorporated herein.

ARTICLE 4. TERM

The term of this Agreement shall be from the effective date until August 30, 2022, unless terminated beforehand as provided for in Article 5. Nothing contained in the Request for Qualifications or this Agreement shall be construed by the Consultant as a guarantee of work from the City. The City reserves the right to extend the Agreement for one, two-year term, providing all terms conditions and specifications remain the same, both parties agree to the extension, and such extension is approved by the City.

At the City's request, the Consultant shall continue services beyond the final expiration date. This extension period shall not extend for more than one year beyond the final expiration date of the Agreement. The Consultant shall be compensated at the rate in effect when this extension period is invoked by the City.

ARTICLE 5. TERMINATION

a. This Agreement may be terminated by the City, with or without cause, upon providing written notice to the Consultant. This Agreement may be terminated by the Consultant upon thirty (30) days' prior written notice to the City. Upon any such termination, the Consultant waives any claims for damages from such termination, including, but not limited to, loss of anticipated profits. Unless the Consultant is in breach of this Agreement, the City shall pay the Consultant for services rendered through the date of termination in accordance with the terms of this Agreement.

b. The continuation of this Agreement beyond the end of any fiscal year shall be subject to both the appropriation and the availability of funds in accordance with Florida law.

ARTICLE 6. LAW, JURISDICTION, VENUE, WAIVER OF JURY TRIAL

This Agreement shall be interpreted and construed in accordance with and governed by the laws of the state of Florida. All Parties agree and accept that jurisdiction of any controversies or legal problems arising out of this Agreement, and any action involving the enforcement or interpretation of any rights hereunder, shall be exclusively in the state courts of the Fifteenth Judicial Circuit in Palm Beach County, Florida, and venue for litigation arising out of this Agreement shall be exclusively in such state courts, forsaking any other jurisdiction which either party may claim by virtue of its

residency or other jurisdictional device. **BY ENTERING INTO THIS AGREEMENT, SECOND PARTY AND CITY HEREBY EXPRESSLY WAIVE ANY RIGHTS EITHER PARTY MAY HAVE TO A TRIAL BY JURY OF ANY CIVIL LITIGATION RELATED TO THIS AGREEMENT. IF A PARTY FAILS TO WITHDRAW A REQUEST FOR A JURY TRIAL IN A LAWSUIT ARISING OUT OF THIS AGREEMENT AFTER WRITTEN NOTICE BY THE OTHER PARTY OF VIOLATION OF THIS SECTION, THE PARTY MAKING THE REQUEST FOR JURY TRIAL SHALL BE LIABLE FOR THE REASONABLE ATTORNEYS' FEES AND COSTS OF THE OTHER PARTY IN CONTESTING THE REQUEST FOR JURY TRIAL, AND SUCH AMOUNTS SHALL BE AWARDED BY THE COURT IN ADJUDICATING THE MOTION.**

ARTICLE 7. ATTORNEY'S FEES

Any costs or expense (including reasonable attorney's fees) associated with the enforcement of the terms and for conditions of this Agreement shall be borne by the respective Parties, however, this clause pertains only to the Parties to this Agreement.

ARTICLE 8. MISCELLANEOUS PROVISIONS

a. Notice Format. All notices or other written communications required, contemplated, or permitted under this Agreement shall be in writing and shall sent by certified United States Mail, postage prepaid, return receipt requested, or sent by commercial express carrier with acknowledgement of delivery, or by hand delivery with a request for a written receipt of acknowledgment of delivery, addressed to the party for whom it is intended at the place last specified. The place for giving notice shall remain the same as set forth herein until changed in writing in the manner provided in this section. For the present, the Parties designate the following:

As to the City:

City of Delray Beach
100 NW 1st Avenue
Delray Beach, FL 33444
Attn: City Manager

With a copy to:

City of Delray Beach
200 NW 1st Avenue
Delray Beach, Florida 33444
Attn: City Attorney

As to the Consultant:

Coastal Systems International, Inc.
464 S. Dixie Highway
Coral Gables, Florida 33146
Attn: R. Harvey Sasso, President

b. Headings. The headings contained in this Agreement are for convenience of reference only and shall not limit or otherwise affect in any way the meaning or interpretation of this Agreement.

c. The documents listed below are a part of this Agreement and are hereby incorporated by reference. In the event of inconsistency between the documents, unless otherwise provided herein, the terms of the following documents will govern in the following order of precedence:

i. Terms and conditions as contained in this Agreement.

ii. Terms and conditions of RFQ 2017-048.

iii. Consultant's response to RFQ 2017-048 and any subsequent information submitted by Consultant during the evaluation and negotiation process.

(The remainder of this page intentionally left blank)

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date hereinabove first written.

CITY OF DELRAY BEACH, FLORIDA

By: _____
Cary D. Glickstein, Mayor

ATTEST:

By: _____
Katerri Johnson, City Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

By: _____
R. Max Lohman, City Attorney

CONSULTANT

By: _____

Title: _____

WITNESSES:

By: _____

Print Name: Andres Perez

By: _____

Print Name: Alessandra Salvo

EXHIBIT A

CITY OF DELRAY BEACH
Continuing Engineering, Surveying, and Landscaping Architectural Consulting Services
RFQ-2017-048
May 30, 2017 at 2:00 PM

Statement of Qualifications

Prepared For:
Purchasing Department
City of Delray Beach
100 NW 1st Avenue
Delray Beach, Florida 33444
P (561) 243-7123
purchasing@mydelraybeach.com

Prepared By:
R. Harvey Sasso, P.E.
Coastal Systems International, Inc.
464 South Dixie Highway
Coral Gables, FL 33146
P (305) 661-3655
F (305) 661-1914
info@coastalsystemsint.com

Table of Contents

Chapter 1
Letter of Intent

COASTAL SYSTEMS INTERNATIONAL, INC.
464 South Dixie Highway • Coral Gables, Florida 33146
Tel: 305-661-3655 • Fax: 305-661-1914
www.coastalsystemsint.com

368700

May 30, 2017

Purchasing Department
CITY OF DELRAY BEACH
100 NW 1st Avenue
Delray Beach, Florida 33444

RE: REQUEST FOR QUALIFICATIONS FOR CONTINUING ENGINEERING, SURVEYING, AND LANDSCAPING ARCHITECTURAL CONSULTING SERVICES, CITY OF DELRAY BEACH, FLORIDA

RFQ NO.: 2017-048

Ladies and Gentlemen:

Coastal Systems International, Inc. (Coastal Systems) is pleased to present this qualifications package in response to the City of Delray Beach (City) Request for Qualifications (RFQ). Coastal Systems is looking forward to the opportunity to begin a working relationship with the City to provide continuing services. This Statement of Qualifications (SOQ) is organized in the format provided in the RFQ with sections for organization profile, qualifications, past records of performance, references, and other required documentation.

Coastal Systems is known in Florida for delivering solutions for unique and complex engineering projects, and we look forward to applying our experience and innovative spirit to the benefit of the City of Delray Beach. Coastal Systems provides field-to-finish services with top quality hydrographic surveying, coastal/waterfront/civil engineering, marine environmental and regulatory permitting capabilities in-house.

Coastal Systems was founded on the belief that waterfront engineering offers a unique opportunity for development. We challenge ourselves to respond to problems with ingenuity and creativity. We are customer-focused, identifying and resolving clients' needs throughout the design process, and beyond. We analyze every project for opportunities to create value through innovations in design, construction, and system maintenance, pooling the diverse talents of our team to achieve a functional, cost-effective finished product. Our understanding of what it means to offer a "solution" to our clients uniquely distinguishes Coastal Systems from other consultants.

Coastal Systems is submitting qualifications for the following disciplines:

- Engineering
- Civil Engineering
- Environmental/Natural Resources
- Water Resources/Stormwater Management
- Coastal and Marine Engineering

Coastal Systems has included sub-consultants that may be required to provide the full range of services of projects to be issued under this contract:

- Ardaman and Associates, Inc. – (Palm Beach County) Geotechnical Engineering
- Avirom and Associates, Inc. – (Palm Beach County) Surveying and Mapping

Coastal Systems is also a small, individually-owned firm with no plans to be acquired by a large corporation. We have the ability to exercise flexibility during the various stages of project planning, permitting, and construction, enabling our firm to provide a higher level service to the City. The small firm format also allows direct involvement of the principal professionals and senior staff ensuring the highest possible level of experience is brought to the projects issued under this contract.

Coastal Systems looks forward to the opportunity to demonstrate our unique capabilities to the City of Delray Beach what we have successfully provided to municipal and county clients throughout Florida. Coastal Systems hereby commits its personnel and resources to the City should we receive an awarded contract. We are available to meet and present our qualifications and we encourage you to visit our website at www.coastalsystemsint.com. Should you have any questions or require any additional information, please do not hesitate to contact me at rhsasso@coastalsystemsint.com or at (305) 669-6236.

Sincerely,
COASTAL SYSTEMS INTERNATIONAL, INC.

R. Harvey Sasso, P.E.
President

Form A - Proposal Submittal Signature Page

By signing this Proposal, the Proposer certifies that it satisfies all legal requirements as an entity to do business with the City, including all Conflict of Interest and Code of Ethics provisions.

Firm Name: Coastal Systems International, Inc.

Street Address: 464 S. Dixie Highway, Coral Gables, FL 33146

Mailing Address (if different from Street Address):

Telephone Number(s): (305) 661-3655

Fax Number(s): (305)661-1914

Email Address: rhsasso@coastalsystemsint.com

Federal Identification Number: 65-0543399

Acknowledged by:

Coastal Systems International, Inc.
Firm Name

Signature

May 22, 2017
Date

R. Harvey Sasso, President
Printed Name and Title

By signing this document, the Proposer agrees to all terms and conditions of this RFQ which includes the Sample Agreement.

THE EXECUTION OF THIS FORM CONSTITUTES THE UNEQUIVOCAL OFFER OF PROPOSER TO BE BOUND BY THE TERMS OF ITS PROPOSAL. FAILURE TO SIGN THIS SOLICITATION WHERE INDICATED ABOVE BY AN AUTHORIZED REPRESENTATIVE SHALL RENDER THE PROPOSAL NON-RESPONSIVE. THE CITY MAY, HOWEVER, IN ITS SOLE DISCRETION, ACCEPT ANY PROPOSAL THAT INCLUDES AN EXECUTED DOCUMENT WHICH UNEQUIVOCALLY BINDS THE PROPOSER TO THE TERMS OF ITS PROPOSAL.

(Remainder of page intentionally left blank)

Chapter 2
Proposer Statement of Organization

STATEMENT OF ORGANIZATION

Coastal Systems International, Inc. is incorporated in the State of Florida, with its Principal, Mr. R. Harvey Sasso, as the sole owner. The firm will be primarily working from its Corporate Office located in Coral Gables, with support from its Regional Offices. We are also able to respond quickly and effectively when emergency or other short-notice projects/tasks arise unexpectedly. We have a proven track record for managing multiple projects and committing necessary resources to meet our clients' goals. All of our offices may be contacted at info@coastalsystemsint.com or visit our website at www.coastalsystemsint.com.

Corporate Office:

Principal & RFQ Primary Representative
R. Harvey Sasso
464 South Dixie Highway
Coral Gables, FL 33146
P: 305-661-3655
rhsasso@coastalsystemsint.com

RFQ Secondary Representative
Andres Perez
464 South Dixie Highway
Coral Gables, FL 33146
P: 305-665-3655
aperez@coastalsystemsint.com

Regional Offices:

West Palm Beach
801 Northpoint Parkway, Suite 151
West Palm Beach, FL 33407
P: 561-640-1003

Tallahassee
310 W. College Ave., Suite 211
Tallahassee, FL 32301
P: 850-765-4520

The company maintains a diversified staff of more than 25 individuals, including specialized Project Managers, Engineers, Marine Biologists, and Surveyors. Our team is dedicated to serving clients with a multi-disciplined approach, while ensuring diligent and personalized service. The firm is uniquely organized with field investigation, engineering and environmental/permitting teams to provide all of the technical elements required for any project implementation.

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
Coastal Systems International, Inc.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only one of the following seven boxes:
☐ Individual/sole proprietor or single-member LLC ☑ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate
☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶
Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.
☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
Exempt payee code (if any)
Exemption from FATCA reporting code (if any)
(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)
464 South Dixie Highway

Requester's name and address (optional)

6 City, state, and ZIP code
Coral Gables, FL 33146

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number
			–			–				

or

Employer identification number
6	5	–	0	5	4	3	3	9	9

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here Signature of U.S. person ▶ Harvey Sosa Date ▶ 5/3/2017

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

CURRENT/PENDING LITIGATION

American Automobile Ins Co vs GT McDonald Enterprises Inc
The plaintiff is the insurance company that provided coverage to the Gale Hotel for sewage back-up as a result of the City of Miami Beach sewage pump station not functioning. Sewage backed-up into the building, and the backflow preventers and other appurtenances referenced in the claim are the responsibility of the building Mechanical/Electrical/Plumbing (MEP) engineer and not Coastal Systems as the site/civil engineer. The claim was filed in September 2014. Coastal Systems disputes the claim. The client served a notice for trial and we will likely have to settle or attend mediation.

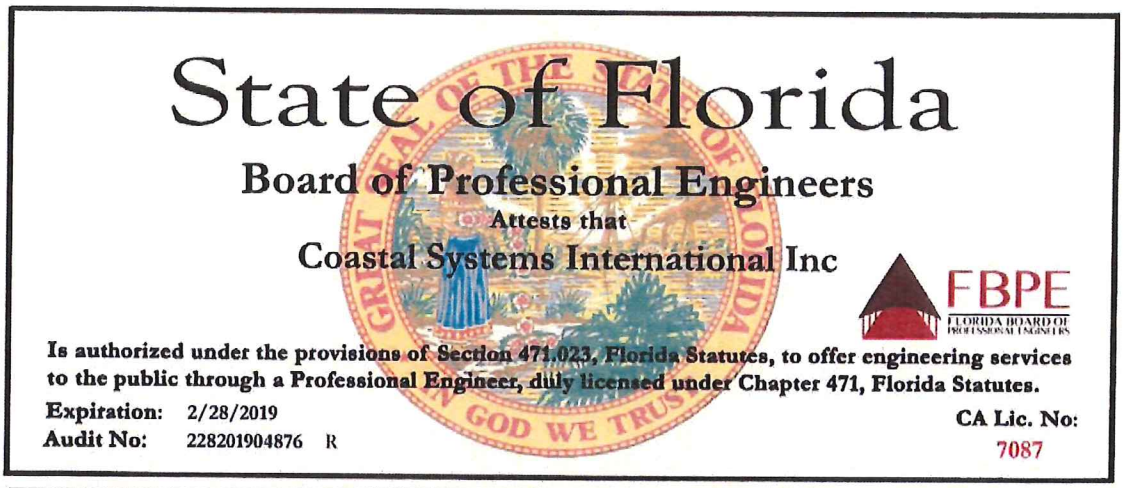
Horizon East
A legal notice was received in January 2016 from a neighboring property of the 3550 S Ocean Blvd. project Coastal Systems was providing services for. Coastal Systems prepared design documents for a seawall replacement project at 3550 which required the contractor to hire an independent testing lab to monitor vibrations during piling installation. The plans also required the contractor to repair any damage that might be caused by their work. Coastal Systems did not act as the contractor or testing lab and did not perform any construction activities at the location. Coastal declined the offer to inspect the damage described by the neighboring property and disclaims any responsibility or liability for the damage.

Liens
Coastal Systems has liens that have been filed against properties for non-payment of contracted services. To date, no litigation has been filed. A list of the liens can be provided to the City upon request.

Chapter 3
Minimum Qualifications

PROFESSIONAL LICENSURE

Coastal Systems International, Inc., a Florida corporation, which has filed on October 14, 1994. Corporation Number P94000075733.



State of Florida

Board of Professional Engineers

Attests that

Coastal Systems International Inc

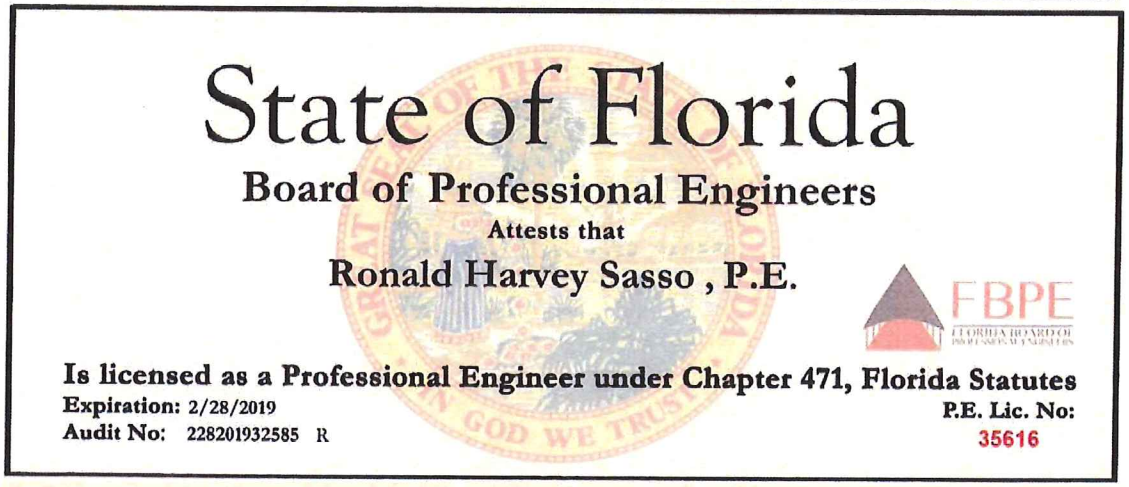
FBPE FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is authorized under the provisions of Section 471.023, Florida Statutes, to offer engineering services to the public through a Professional Engineer, duly licensed under Chapter 471, Florida Statutes.

Expiration: 2/28/2019

Audit No: 228201904876 R

CA Lic. No: 7087



State of Florida

Board of Professional Engineers

Attests that

Ronald Harvey Sasso , P.E.

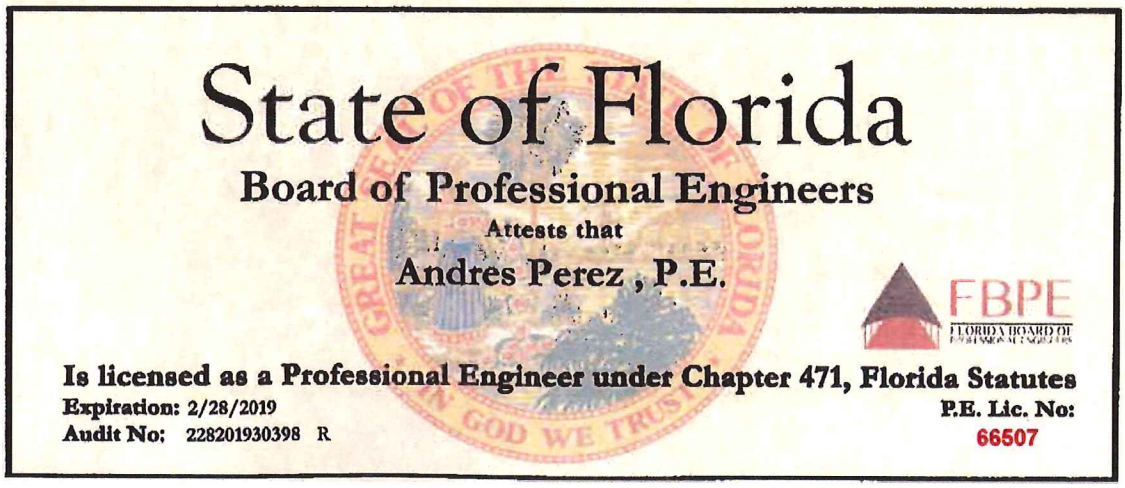
FBPE FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201932585 R

P.E. Lic. No: 35616



State of Florida

Board of Professional Engineers

Attests that

Andres Perez , P.E.

FBPE FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201930398 R

P.E. Lic. No: 66507

ARDAMAN AND ASSOCIATES, INC.

State of Florida

Board of Professional Engineers

Attests that

Ardaman & Associates, Inc.

FBPE FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is authorized under the provisions of Section 471.023, Florida Statutes, to offer engineering services to the public through a Professional Engineer, duly licensed under Chapter 471, Florida Statutes.

Expiration: 2/28/2019
Audit No: 228201900863 R

CA Lic. No:
5950

State of Florida

Board of Professional Engineers

Attests that

Andrew Joseph Nixon , P.E.

FBPE FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201917698 R

P.E. Lic. No:
71458

State of Florida

Board of Professional Engineers

Attests that

Kevin Ferguson , P.E.

FBPE FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201906725 R

P.E. Lic. No:
60712

State of Florida

Board of Professional Engineers

Attests that

Roberto Enrique Balbis , P.E.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201932487 SI

SPECIAL INSPECTOR

P.E. / SI Lic. No:
15832 13

AVIROM AND ASSOCIATES, INC.

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LB3300**
Expiration Date February 28, 2019

Professional Surveyor and Mapper Business License

Under the provisions of Chapter 472, Florida Statutes

AVIROM & ASSOCIATES INC
50 SW 2ND AVE #102
BOCA RATON, FL 33432-4799

ADAM H. PUTNAM
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LS3268**
Expiration Date February 28, 2019

Professional Surveyor and Mapper License

Under the provisions of Chapter 472, Florida Statutes

MICHAEL DAVID AVIROM
50 SW 2ND AVENUE
BOCA RATON, FL 33432

ADAM H. PUTNAM
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LS4409**
Expiration Date February 28, 2019

Professional Surveyor and Mapper License

Under the provisions of Chapter 472, Florida Statutes

JOHN TREIBER DOOGAN
8571 DYNASTY DR
BOCA RATON, FL 33433-6823

ADAM H. PUTNAM
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

CONFLICT OF INTEREST

No owner, officer, director, agent, representative, employee or parties of interest with Coastal Systems is an employee of the City of Delray Beach nor have in any way colluded or agreed, directly or indirectly, with person, firm, or other entity to circumvent the procurement process while submitting for our qualifications for this project.

Chapter 4
Proposal Response Requirements

- **Section A** Experience, Background, Reference Feedback
- **Section B** Approach to Project Management
- **Section C** Projects for Similar Services
- **Section D** Organization Structure

Section A

Experience, Background,
Reference Feedback

EXPERIENCE, BACKGROUND, REFERENCE FEEDBACK

Coastal Systems International, Inc. (Coastal Systems) has an established reputation for planning effective strategies and delivering complex projects in coastal and other waterfront environments. For over 20 years, Coastal Systems has helped clients realize their vision by engineering cost-effective solutions in the design of marinas, beaches, coastal structures, environmental and public space enhancements, and other specialized projects. We have amassed significant experience in completing projects with unique designs and requiring construction under challenging conditions. From initial field investigations in hydrographic surveying and marine resource assessments through environmental impact assessment, regulatory permitting, design and construction, we provide clients with a field-to-finish solution.

Coastal Systems began as a specialized coastal engineering and regulatory permitting firm in South Florida in the mid 1980's and incorporated in mid 1990's. Over the years, the firm has expanded our professional services provided to include:

- Coastal Engineering
- Civil Engineering
- Coastal Resilience
- Marine Environmental
- Construction Management
- Waterfront & Marinas
- Regulatory Permitting
- Site Investigations
- Destination Planning and Development

The company maintains a diversified staff of 25+ individuals, including specialized Project Managers, Engineers, Marine Scientists, and Surveyors. Our team is dedicated to serving clients with a multi-disciplined approach, while ensuring diligent and personalized service. The firm is uniquely organized with field investigation, engineering and environmental/permitting teams to provide all of the technical elements required for coastal and waterfront project implementation.

Coastal Systems is submitting qualifications for the following disciplines:

- Engineering
- Civil Engineering
- Environmental/Natural Resources
- Water/Stormwater Management
- Coastal and Marine Engineering

Coastal Systems has assembled an exemplary team of professionals to assist the City with completing the full scope of services for projects issued under the above-mentioned disciplines. Coastal Systems has worked previously with both sub-consultants on several projects. The following summarizes the firm descriptions of our proposed sub-consultants:

Ardaman and Associates, Inc. – Geotechnical Engineering

Ardaman was founded in 1959 by Dr. M.E. Ardaman, and the Company has continually provided engineering services in the ensuing years. The Company is led by Dr. Nadim F. Fuleihan, P.E. Ardaman maintains the high level of integrity and technical excellence that had become synonymous with the Ardaman name. At present, Ardaman employs a staff of nearly 400 professional engineers, scientists, technicians, drilling personnel, technical assistants and support staff state of Florida and Louisiana.

We firmly believe that the growth and reputation of our Company are the direct results of the individual efforts and commitment of all our employees. Our future success depends on continuing this commitment to technical excellence and professionalism.

Ardaman offers a broad range of professional engineering services including:

- Geotechnical engineering
- Construction materials testing and inspection
- Hydrogeology and surface water hydrology
- Soil/groundwater contamination assessments/remediation
- Building inspection
- Industrial waste engineering
- Facilities engineering

Ardaman has provided services on tens of thousands of projects ranging from single family residences to billion dollar industrial complexes. We work with both public and private clients including:

- Local, state and federal governments and agencies
- Public and private utilities
- Major industries and manufacturers
- Architects and engineers
- Banks and lending institutions
- Contractors
- National governments and agencies of other countries
- Retail and commercial companies

Avirom and Associates, Inc. – Surveyor

Michael D. Avirom, P.L.S. founded Avirom & Associates, Inc. in 1981. Since that time, we have established offices in Palm Beach, Monroe and Martin Counties. We are a company dedicated solely to the land surveying profession, with the philosophy to provide the highest quality product in a timely and professional manner. Our firm continues to achieve this through customer service, extensive knowledge of the land surveying profession and our commitment to excellence.

We have worked with many municipalities throughout South Florida, and we strive to provide them with a seamless product for their design. Our surveys have been the base maps for numerous designs, not only for engineering and architecture, but also landscape architectural and urban design firms.

Our firm has extensive knowledge and experience in providing the following surveying services: boundary surveys, ALTA/ACSM land title surveys, as-built surveys, utility locate surveys, coastal mapping, construction surveys, permitting surveys, expert witness testimony, GPS control surveys, hydrographic surveys, legal descriptions, mean high water surveys, platting, plat review for compliance with Chapter 177, restoration of corners, right-of-way surveys, route surveys, specific/special purpose surveys, submerged land lease surveys, topographic surveys and wetland location surveys.

Avirom & Associates, Inc. utilizes our firm's quality assurance, quality control and project management policy from the inception of a project to ensure the project is carried through to completion in the most efficient and timely manner.

We take the following steps to ensure the quality of the project:

- Develop survey plan for implementation of project scope
- Research for plats, right-of-ways, controls, prior surveys, benchmarks, etc.
- Meeting with survey crew to discuss parameters of the project and safety procedures
- Determine the technology necessary for the project and establish equipment to be used in the field
- Mobilize field crew(s)
- Ongoing review of project standards, criteria and checklist
- Daily review of field notes to ensure that the scope of work and standards are met
- Ongoing communication between project manager and field crew on a daily basis with special emphasis on the transmittal of data, quality control, safety, cost and schedule adherence
- Process survey field data and prepare final drawings
- Field review by project manager for quality assurance and to ensure that the work meets Florida State Statutes and Minimum Technical Standards

ENGINEERING

Coastal Systems has an established reputation for planning effective strategies and delivering complex projects in coastal and other waterfront environments. For over 20 years, Coastal Systems has helped clients realize their vision by engineering cost-effective solutions in the design of marinas, beaches, coastal structures, environmental and public space enhancements, and other specialized projects. We have amassed significant experience in completing projects with unique designs and requiring construction under challenging conditions. From initial field investigations in hydrographic surveying and marine resource assessments through environmental impact assessment, regulatory permitting, design and construction, we provide clients with a field-to-finish solution.

CIVIL ENGINEERING

The civil engineers at Coastal Systems specialize in coastal/waterfront projects and have extensive experience in marina utilities and shore support. Coastal Systems prepares and processes site designs for services including paving, grading, stormwater management, and sanitary sewer collection, as well as fire, gray, and potable water distribution. The design submissions are monitored as they are processed by city, county, and state agencies. Coastal Systems has retained several unique utility designs for reverse osmosis, water treatment/distribution, sewage treatment and collection, electrical generation, solid waste handling, and fuel systems management for use in private island destinations.

Coastal Systems also has extensive experience in the civil engineering design of public parks and open spaces. The team works closely with land planners and architects to provide comprehensive designs for public spaces. In addition, Coastal Systems has been the lead consultant on over five oceanfront pedestrian path projects in South Florida, totaling over 3 miles of paths including associated public spaces, beach access areas, and native dune vegetation improvements.

ENVIRONMENTAL/NATURAL RESOURCES

Coastal Systems offers a wide range of specialized marine environmental services including qualitative and quantitative resource surveys, impact assessment and environmental management planning, mitigation assessment and design, and site monitoring. Our depth of knowledge and experience is used to provide our clients with the appropriate scientific, technical, and regulatory solutions for coastal and marine projects. Each project is approached individually and holistically, using the best available technology to mesh environmental management and sustainable development concepts with economic analysis and strategic planning.

Our specialties include mapping of protected coastal and marine plants and wildlife, surveying in remote locations, and spatial/temporal analysis of resources (evaluation of changes over time). Data can be analyzed and presented in a number of formats, including modeling to provide integrated resource management options and GIS.

WATER RESOURCES/STORMWATER MANAGEMENT

Poor water quality caused by stormwater runoff poses a threat to human health, the ecosystem and the physical shapes of natural environments around which our businesses, homes and parks are built. Poor stormwater management can also lead to unnecessary flood damage, creating burdensome costs to landowners and taxpayers. The civil engineers at Coastal Systems have demonstrated project experience

with the design and permitting of stormwater management plans throughout Florida. Services are routinely provided to developers and architects in support of site development. Whether it is an infiltration trench or a Best Management Practice (BMP) project, the civil engineering team has all the necessary capabilities. The team strives to keep abreast of the constantly changing local, state and federal regulations in municipal stormwater projects.

COASTAL AND MARINE ENGINEERING

Working for both public and private clients, Coastal Systems has provided a vast array of coastal engineering services throughout the Caribbean and Florida. From initial field investigations to coastal process modeling with state-of-the-art software, Coastal Systems has the tools and experienced staff to understand coastal problems and provide cost-effective solutions. Our proven track record with complex projects throughout Florida and the Caribbean is a testament to our capabilities.

Waterfront development provides exciting opportunities for marinas, piers, and public areas. Coastal Systems provides innovative approaches to address environmental constraints as well as the corrosive and dynamic effects on marine structures. Projects have ranged from the design of mooring buoys and construction of facilities for the largest cruise ships in the world to urban waterfront revitalization projects in the Caribbean and the Americas.

Coastal Systems has extensive experience with marinas and docking facilities throughout South Florida. The firm has designed a variety of fixed and floating docks, with all types of materials including timber, concrete, steel and aluminum. Coastal Systems understands the advantages and disadvantages of different types of floating docks, both from a design perspective and as a member of the overall project team. Coastal Systems strives to specify the right product for proper application, and to allow a level of competition to reduce construction costs. Marina support structures can also be designed including seawalls/bulkheads, and other shoreline stabilization structures. Key staff has extensive experience evaluating in-service marine structures, and rely on this experience to specify materials and construction methods for the maximum service life within the project budget. Our team has designed floating structures for 10-foot tidal ranges, and fixed docks that can withstand coastal storm impacts. We understand the unique needs of boaters including fendering, finger docks, mooring accessories and slip layout. The firm understands vessel types and specific docking facility requirements. Designs have been completed for facilities ranging from 10 to 1000 slips, and for vessels ranging from 20 feet to over 450 feet (gigayachts).

Coastal Systems focuses on the unique, creating innovative designs such as wave baffles that also provide environmental habitat as part of the project mitigation efforts. The team is meticulous in specifying marine construction materials for maximum service life and minimal maintenance. The marina design team prepares marina project approaches that comply with regulatory requirements while continuing to meet and exceed the owner's objectives.

ADDITIONAL EXPERIENCE – UNMANNED AERIAL VEHICLE (UAV) AND SITE SURVEYING

Coastal Systems utilizes the latest aerial photogrammetric technology with our Unmanned Aerial Vehicle (UAV), more commonly known as a drone, to provide clients with precise topographical data. Aerial photogrammetric data can be collected to record essential geographical and physical features, such as terrain, coastlines and roadways. Drones also serve to aid in government planning and strategy. Our UAV can be utilized for projects issued under this contract to perform the following tasks:

Roadway Modeling: Aerial photogrammetry allows for detailed data collection of integral roads, paths and highways to create a base map for present and future evaluations.

- Roads
- Highways
- Curbs
- Gutters

Terrain Mapping: Drones provide detailed mapping data that range from biological resources to geological features.

- Morphology
- Beaches
- Resource Mapping
- 3D Modeling

Structural Assessment: Aerial photogrammetric technology offers rapid data collection of an area's vital infrastructural components, providing crucial evaluations of their structural conditions.

- Bridge Inspections
- Bulkheads
- Electrical Lines
- Infrastructural Damage

Coastal Management and Change Monitoring: Aerial photogrammetric data provides pre- and post-storm conditions in order to assess impacts and support insurance claims. Drones document the extent of erosion and sand migration of an area's shorelines over time, as well as after storm events.

- Erosion Monitoring
- Storm Damage Assessment
- Volume Calculations
- Beach Nourishment Planning
- Pre– and Post-event Comparison

Flood Assessment and Resilience Planning: Drones are capable of swiftly performing flood delineations subsequent to a storm event, assist in disaster relief planning and aid in designing resilient infrastructure prior to natural disasters.

- Coastal Resilience Planning

- Water-Flow Simulation
- Flood Damage Assessment
- Flood Defense Planning
- Disaster Relief Strategy

AWARDS

In 2016, Coastal Systems won the award for Outstanding Achievement in Civil Engineering for Museum Park from the Miami-Dade Branch of the American Society of Civil Engineers. Coastal Systems served as the Prime Consultant for the project, with Mr. Andres Perez as Project Manager.

REFERENCES

ENGINEERING

RICKENBACKER CAUSEWAY RECREATIONAL AREA, MIAMI-DADE COUNTY, FLORIDA
CLIENT/OWNER: Miami-Dade County Public Works
ADDRESS: 111 N.W. First Street, Miami FL 33128
CONTACT: Ms. Svetlana Moorey, P.E.
EMAIL: lana@miamigov.com
P: (305) 375-2863 **F:** (305) 679-7738
ADDRESS: 111 N.W. First Street, Miami FL 33128
PROJECT DATE: 2009-2011
PROJECT STATUS: Completed

KENNEDY PARK SHORELINE STABILIZATION & DOCK REPLACEMENT, FLORIDA
CLIENT/OWNER: City of Miami
ADDRESS: 444 SW 2nd Ave. 8th Floor, Miami, FL 33130
CONTACT: Mr. Carlos A. Vaszquez
EMAIL: cavasquez@miamigov.com
P: (305) 416-1206 **F:** (305) 416-2153
ADDRESS: 2400 S. Bayshore Drive, Miami, FL
PROJECT DATE: 2010-2012
PROJECT STATUS: Completed

NORTH BAY VILLAGE BAYWALK, FLORIDA
CLIENT/OWNER: North Bay Village
ADDRESS: 1666 Kennedy Causeway, Suite 300, North Bay Village, FL 33141
CONTACT: Mr. Frank Rollason
EMAIL: frollason@nbvillage.com
P: (305) 756-7171 Ext. 21
ADDRESS: 1415 NE 79th Street Causeway to 1755 79th Street Causeway, North Bay Village, FL 33141
PROJECT DATE: 2014-Ongoing
PROJECT STATUS: Professional Services Ongoing

HAULOVER MARINE CENTER, MIAMI-DADE COUNTY, FLORIDA
CLIENT/OWNER: Westrec Companies
ADDRESS: 251 Calming Water Trail, Dallas, GA 30132
CONTACT: Mr. Narvel Lassiter
EMAIL: nlassiter@westrec.com
P: (678) 574-6033 **F:** (770) 529-4792
ADDRESS: 15600 Collins Avenue, Miami Beach 33154
PROJECT DATE: 2013-2015
PROJECT STATUS: Completed

HILLSBORO INLET CHANNEL IMPROVEMENTS, FLORIDA
ADDRESS: 907 Hillsboro Mile, Hillsboro Beach, Florida 33062
CONTACT: Chairman Jack Holland
EMAIL: papajackbc@aol.com
P: (561) 479-5627
ADDRESS: 907 Hillsboro Mile, Hillsboro Beach, Florida 33062

PROJECT DATE: 2003- Ongoing
PROJECT STATUS: Professional Services Ongoing

MARINE/COASTAL ENGINEERING

CURRIE PARK STAGING DOCK, PALM BEACH COUNTY, FLORIDA
ADDRESS: 401 Clematis Greet, 4th FL, West Palm Beach, FL
CONTACT: Mr. Raul Mercado
EMAIL: rmercado@wpb.org
P: (561) 494-1088 **F:** (561) 494-1116
ADDRESS:
PROJECT DATE: 2014-Ongoing
PROJECT STATUS: Ongoing

MUSEUM PARK LARGE VESSEL MOORING FACILITY, MIAMI-DADE COUNTY, FLORIDA
ADDRESS: 444 SW 2nd Ave., 8th Floor, Miami, FL 33130
CONTACT: Mr. John De Pazos
EMAIL: jdepazos@miamigov.com
P: (305) 416-1094 **F:** (305) 416-1019
ADDRESS: 1075 Biscayne Boulevard, Miami, FL 33132
PROJECT DATE: 2006-2011
PROJECT STATUS: Completed

MUNYON ISLAND DOCKING FACILITY, PALM BEACH COUNTY, FLORIDA
CLIENT/OWNER: Florida Department of Environmental Protection (FDEP)
ADDRESS: 3900 Commonwealth Boulevard, 155/160, Tallahassee, FL 32399
CONTACT: Mr. Fred Hand
EMAIL: fred.hand@dep.state.fl.us
P: (850) 245-2684 **F:** (850) 245-2612
ADDRESS: 10900 Jack Nicklaus Dr., Munyon Island, North Palm Beach, FL 33408
PROJECT DATE: 2007-2012
PROJECT STATUS: Completed

DINNER KEY MARINA MAINTENANCE DREDGING AND MOORING FIELD, FLORIDA
CLIENT/OWNER: City of Miami
ADDRESS: 444 S. W. 2nd Avenue, 8th FL, Miami FL 33130
CONTACT: Mr. Stephen Bogner
EMAIL: sbogner@ci.miami.fl.us
P: (305) 579-6950 **F:** (305) 579-6952
ADDRESS: 3400 Pan American Dr. Miami, FL 33133
PROJECT DATE: 02/2008- 11/2009
PROJECT STATUS: Completed

FORT ZACHARY TAYLOR STATE PARK, KEY WEST, FLORIDA
CLIENT/OWNER: Florida Department of Environmental Protection
ADDRESS: 3900 Commonwealth Boulevard, 155/160, Tallahassee, FL 32399
CONTACT: Mr. Fred Hand
EMAIL: fred.hand@dep.state.fl.us
P: (850) 245-2684 **F:** (850) 245-2612
ADDRESS: 601 Howard England Way, Key West, FL 33040

PROJECT DATE: 2014-2015
PROJECT STATUS: Professional Services Ongoing

CIVIL

BEACHWALK II, MIAMI BEACH, FLORIDA
CLIENT/OWNER: City of Miami Beach
ADDRESS: 1700 Convention Center Drive, Miami Beach, Fl 33139
CONTACT: Ms. Elizabeth Wheaton
EMAIL: ElizabethWheaton@miamibeachfl.gov
P: (305) 673-7080 x 6121 **F:** (305) 394-4770
ADDRESS: 1700 Convention Center Drive, Miami Beach, Fl 33139
PROJECT DATE: 2014 (Phase 1)
PROJECT STATUS: Professional Services Ongoing

MUSEUM PARK, MIAMI, FLORIDA
CLIENT/OWNER: City of Miami
ADDRESS: 444 SW 2nd Ave., 8th Floor, Miami, FL 33130
CONTACT: Mr. John De Pazos
EMAIL: jdepazos@miamigov.com
P: (305) 416-1094 **F:** (305) 416-1019
ADDRESS: Museum Park, 1075 Biscayne Boulevard, Miami, FL 33132
PROJECT DATE: 2011-2015
PROJECT STATUS: Professional Services Ongoing

MIRACLE MILE/GIRALDA STREETSCAPE, CORAL GABLES, FLORIDA
CLIENT/OWNER: Cooper Robertson and Partners/City of Coral Gables
ADDRESS: 123 William Street, New York, NY 10038
CONTACT: Mr. Donald Clinton
EMAIL: dclinton@cooperrobertson.com
P: (212) 547-1717 EXT. 221
ADDRESS: Miracle Mile/Giralda Ave., Coral Gables
PROJECT DATE: 2015-Ongoing
PROJECT STATUS: Ongoing

600 ALTON ROAD, CITY OF MIAMI BEACH, FLORIDA
CLIENT/OWNER: Crescent Heights
ADDRESS: 2200 Biscayne Boulevard, Miami FL 33137
CONTACT: Mr. Ian Kramer
EMAIL: ikramer@crescentheights.com
P: (305) 374-5700 x 7372
ADDRESS: 600 Alton Road, Miami Beach, FL
PROJECT DATE: N/A
PROJECT STATUS: Professional Services Ongoing

CORAL GABLES AUTO VAULT, CORAL GABLES, FLORIDA
CLIENT/OWNER: Current Builders
ADDRESS: 2251 Blount Road Pompano Beach, FL 33069
CONTACT: Aaron Butress

EMAIL: AButress@currentbuilders.net
P: (954) 977-4211 **F:** 954-978-4658
ADDRESS: Bird Road and SW 38th Court, Miami
PROJECT DATE: 2015-Ongoing
PROJECT STATUS: Ongoing

NATURAL RESOURCES/ENVIRONMENTAL

HOLLYWOOD BEACH MANAGEMENT, BROWARD COUNTY, FLORIDA
CLIENT/OWNER: City of Hollywood, Hollywood Community Redevelopment Agency
ADDRESS: 330 N. Federal Highway, FL 33020
CONTACT: Commissioner Carmen McGarry
EMAIL: cmcgarry@townofhillsborobeach.com
P: (954) 424-2932
ADDRESS: 330 N. Federal Highway, FL 33020
PROJECT DATE: 2012
PROJECT STATUS: Professional Services Ongoing

HILLSBORO/DEERFIELD NOURISHMENT, HILLSBORO BEACH, FLORIDA
CLIENT/OWNER: Town of Hillsboro Beach
ADDRESS: 1210 Hillsboro Mile, Hillsboro Beach, FL 33062
CONTACT: Commissioner Carmen McGarry
EMAIL: Jones-Rich@ monroecounty-fl. gov
P: (954) 424-2932
ADDRESS: 1210 Hillsboro Mile, Hillsboro Beach, FL 33062
PROJECT DATE: 2015
PROJECT STATUS: Completed

MONROE COUNTY MOORING FIELD, MONROE COUNTY, FLORIDA
CLIENT/OWNER: Monroe County, Florida Keys, Florida
ADDRESS: 2798 Overseas Highway, Marathon, FL 33050
CONTACT: Mr. Richard Jones
EMAIL: Jones-Rich@ monroecounty-fl. gov
P: (305) 289-2805
ADDRESS: 2798 Overseas Highway, Marathon, FL 33050
PROJECT DATE: 2014 Completed
PROJECT STATUS: Professional Services Ongoing

PORTMIAMI MONITORING, MIAMI, FLORIDA
CLIENT/OWNER: PortMiami
ADDRESS: 1015 North America Way, *FL* 33132
CONTACT: Ms. Becky Hope
EMAIL: bhope@miamidade.gov
P: (305) 347-4972
PROJECT DATE: 2016
PROJECT STATUS: Professional Services Ongoing

U.S. COAST GUARD SECTOR KEY WEST, KEY WEST, FLORIDA
CLIENT/OWNER: AGS Inc. / United States Coast Guard
ADDRESS: 5 Freelon Street, San Francisco, CA 94107

CONTACT: Mr. Dennis Wong
EMAIL: dennis.wong@agsinc.com
P: (415) 777-2166 x 12
ADDRESS: 100 Trumbo Road, Key West, FL 33040
PROJECT DATE: 2015
PROJECT STATUS: Completed

STORMWATER MANAGEMENT/WATER RESOURCES

1826 COLLINS PARKING GARAGE
CLIENT/OWNER: Crescent Heights
ADDRESS: 2200 Biscayne Boulevard, Miami FL 33137
CONTACT: Mr. Ian Kramer
EMAIL: ikramer@crescentheights.com
P: (305) 374-5700 x 7372
ADDRESS: 1826 Collins Ave. Miami Beach, FL
PROJECT DATE: 2011
PROJECT STATUS: Completed

AVIVA DEVELOPMENT, CORAL GABLES, FLORIDA
CLIENT/OWNER: Hines
ADDRESS: 2525 Ponce de Leon Blvd. Ste 1020, Coral Gables FL 33134
CONTACT: Mr. Matthew Barry
EMAIL: matthew.barry@hines.com
P: (305) 673-7080 x 6121 **F:** (305) 394-4770
ADDRESS: 3880 Bird Road, Miami, FL 33146
PROJECT DATE: 2013-2014
PROJECT STATUS: Completed

BAYFRONT STREET ENDS, MIAMI BEACH, FLORIDA
CLIENT/OWNER: City of Miami Beach
ADDRESS: 1700 Convention Center Drive, Miami Beach, Fl 33139
CONTACT: Ms. Elizabeth Wheaton
EMAIL: ElizabethWheaton@miamibeachfl.gov
P: (305) 673-7080 x 6121 **F:** (305) 394-4770
ADDRESS: 10th Street, 14th Street, Lincoln Road and Island View Park
PROJECT DATE: 2006-2015
PROJECT STATUS: Completed

SOUNDSCAPE PARK, MIAMI BEACH, FLORIDA
CLIENT/OWNER: West 8 New York/City of Miami Beach
ADDRESS: 333 Hudson Street, Suite 905, New York, New York 10013 / 1700 Convention Center Drive, Miami Beach, Fl 33139
CONTACT: Ms Jamie Maslyn-Larson
EMAIL: j.maslyn@west8.com
P: (212) 285-0088 **F:** (212) 285-0028
ADDRESS: 400 17th Street, Miami Beach, FL 33139
PROJECT DATE: 20011 -
PROJECT STATUS: Completed

HAULOVER UTILITIES, MIAMI-DADE COUNTY, FLORIDA
CLIENT/OWNER: Miami-Dade PROS Department
ADDRESS: 360 South County Road, Palm Beach, Florida 33480
CONTACT: Ms. Lydia Salas
EMAIL: lydias@miamidade.gov
P: (305) 755-5456 **F:** (305) 755-7995
ADDRESS: 15600 Collins Avenue, Miami Beach 33154
PROJECT DATE: 2014-2015
PROJECT STATUS: Completed

KEY PERSONNEL

Coastal Systems has extensive experience coordinating and implementing multi-disciplinary coastal and marine projects. Coastal Systems has assembled a highly qualified team of professionals with demonstrated experience and qualifications in all of the areas of expertise required to plan, design, permit and construct beach nourishment projects. Coastal Systems' organizational structure is designed for efficiency, cost-effectiveness, design optimization and quality production throughout all phases of project implementation. We have demonstrated capabilities in managing multiple projects for public sector clients and coordinating closely with their staff, as well as large teams of sub-consultants.

Key team personnel will work concurrently with each other depending on the scope of services. Detailed resumes of key personnel with individual representative project experience are included on the following pages.

EDUCATION

Master of Science, Civil Engineering, Queen's University, Kingston, Ontario, Canada, 1981

Bachelor of Science, Civil Engineering, Queen's University, Kingston, Ontario, Canada, 1979

LICENSURE

Professional Engineer, FL

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

Florida Engineering Society

Florida Shore and Beach Preservation Association

Florida Institute of Consulting Engineers

PUBLICATIONS

"Artificial Reef Construction: An Engineered Approach", R.H. Sasso, T.K. Blankenship, S. Higgins, and K. Banks, Feb. 2004 National Conference on Beach Preservation Technology

"Mooring Buoys for the Largest Cruise Ship in the World," J. Juhl, T.K. Blankenship, and R.H. Sasso, Proceedings, Ports 2001 Conference

"Village of Key Biscayne Beach Renourishment and the Management of Offshore Seagrasses," Cameron Perry and Harvey Sasso, P.E., Proceedings of the 2001 National Conference on Beach Preservation Technology

"Miami Beach 32nd Street Hot Spot: Numerical Modeling and Design Optimization," Adam Shah and Harvey Sasso, P.E., Proceedings of the 2001 National Conference on Beach Preservation Technology

"Regional Beach Restoration Plan for Three Consecutive Barrier Islands in South Florida," Paul C.-P. Lin, Ph.D., P.E., R. Harvey Sasso, P.E. and C. Anthony Spell, Proceedings of the 1997 National Conference on Beach Preservation Technology

"Combined Sand Bypassing and Navigation Improvements at Hillsboro Inlet, Broward County, Florida: The Importance of a Regional Approach," Dr. Paul C.-P. Lin, P.E., Inger Hansen, and R. Harvey Sasso, P.E., Proceedings of the 1996 National Conference on Beach Preservation Technology, St. Petersburg, Florida, 1996, pp. 43-59.

R. HARVEY SASSO, P.E.
Principal-in-Charge

As the Principal-In-Charge, Mr. Sasso is responsible for providing overall management, direction and coordination to the engineering team for professional services related to all projects undertaken by Coastal Systems. In this capacity, he determines time schedules; allocates resources; directs joint ventures, sub-consultants and team members in performing field investigations and technical evaluations; and directs the development and evaluates the feasibility of design alternatives.

Mr. Sasso has over 30 years experience as a professional coastal engineer, having worked on numerous projects in Florida, the Caribbean, and Europe. He has been involved in all aspects of coastal/marine projects, including project design, engineering analysis, environmental permitting, and the legal, political and managerial elements of project implementation.

He has a reputation for providing a business approach to engineering having planned, designed and implemented numerous coastal/waterfront development projects. Mr. Sasso pioneered a regional approach to coastal sediment budget from Hillsboro Inlet in Broward County to Government Cut in Dade County. This sediment study encompassed 35 miles of shoreline, two counties, four inlets, one taxing district and ten municipalities.

PROJECT EXPERIENCE WITH THIS FIRM

Ambergris Cay, Turks and Caicos
CLIENT: Ambergris Cay Partnership
Prepared EIA for development of private island. Performed hydrographic and GPS control surveys. Engineering design of coastal works including entrance channel, dredging, 150-slip marina, and RO/RO platform for shipments to remote island.

Bill Baggs Cape Florida State Park, Key Biscayne, Florida
CLIENT: DEP State Parks
Design and permitting of 4000 feet of seawall revetment with fishing piers for public access.

Biscayne Bay Deep Holes Restoration, Miami-Dade County, Florida
CLIENT: DEP State Parks
Design and permitting of 4000 feet of seawall revetment with fishing piers for public access.

Broward County Beach Restoration Project Mitigation, Florida
CLIENT: Broward County
Design/build 10 acres of artificial reef offshore of the Dania/Hollywood beaches - utilizing 66,000 tons of limerock boulders imported from Freeport, Bahamas. Project was implemented utilizing three rock barges, one crane barge, a 165-ton crane, front end loaders and two tug

R. HARVEY SASSO, P.E.

boats operating 24-hours/day, 7-days/week over 4 months. Marine positioning, resource surveys and hydrographic surveys were an integral part of rock placement needed to achieve a successful project.

Cap Cana Marine Works, Punta Cana, Dominican Republic
CLIENT: Sinercon
Coastal engineering design and construction management for the dredging of 1.25-mile canal to create the basin and real-estate offering surrounding a 1,000+ slip marina. Design of shoreline stabilization, beaches, entrance channel jetties, as well as numerical modeling of coastal processes and hydrographic surveying. Construction management included specifying construction techniques and the acquisition of appropriate equipment.

Cape Eleuthera Marina, Eleuthera, Bahamas
CLIENT: DP Fox Holdings
Hydrographic surveys, coastal structure evaluations, feasibility studies and design of docks and sheet pile seawall for 60-slip marina basin.

Cococay Site Infrastructure Improvements, Berry Islands, Bahamas
CLIENT: Royal Caribbean International
Design/build of site infrastructure and guest facilities required to accommodate cruise ship passengers and island staff on their private island. Heavy earthworks included underground utilities, filling and site grading. Utilities installed included fueling systems, R/O water treatment, diesel electrical generation, reclaimed water, solid waste incineration and sewage treatment. Guest facilities included bars, restaurants, restrooms, retail shops and water sport facilities.

Dinner Key Boatyard Marina, Miami, Florida
CLIENT: City of Miami
Design and environmental permitting for 110-slip marina and 600-foot bulkhead replacement. Mitigation design provided and maintenance dredging designed.

Frederiksted Urban Waterfront Revitalization: Phase I, St. Croix, USVI
CLIENT: USVI Public Finance Authority
Design/build project for park and cruise ship pier improvements in the historical town of Frederiksted. Directed the planning and engineering team during a design charrette involving local community and government representatives seeking to create a vision for their waterfront. Subsequently provided full engineering and executed a lump sum design-build contract for delivery of the waterfront park, cruise-ship pier improvements, clock tower and underground utilities along the main street.

Fort Zachary Taylor State Park, Key West, Florida
CLIENT: DEP State Parks
Coastal engineering design and environmental permitting for breakwaters, jetties, and beach fill project for shoreline protection at

R. HARVEY SASSO, P.E.

park.

Miamarina at Bayside, Miami, Florida
CLIENT: City of Miami
Design and environmental permitting for 130-slip marina. Coastal engineering design including numerical modeling and physical model tests were conducted for the wave baffle design.

Nassau Port Relocation Feasibility Study, New Providence, Bahamas
CLIENT: Government of the Bahamas
Environmental assessments and port feasibility studies to select the optimum site for relocation of the commercial port to the southwest side of the island. Participated closely with government and stakeholders to develop a financially viable and environmentally feasible solution.

Peanut Island Environmental Restoration, Palm Beach County, Florida
CLIENT: Palm Beach County
Coastal/civil and marine structures design for 1.5-acre artificial reef habitat and 1.3 acre shallow seagrass lagoon. Additional features include a tidal pond and flushing channel, shallow-draft marina with floating docks, pedestrian boardwalks, and site utility upgrades.

Rickenbacker Causeway Recreational Corridor, Miami-Dade County, Florida
CLIENT: Miami-Dade County
Design of shoreline stabilization and associated public recreation area improvements along 2.5 miles of shoreline of the Rickenbacker Causeway across Biscayne Bay. Marine resource and hydrographic surveys completed, and coastal engineering analysis conducted to assess design wave conditions, sediment transport and optimum shoreline stabilization methods. Design elements included landscaping, invasive species removal with native species restoration, parking improvements, stormwater management and vendor kiosks for waterfront activities.

Singer Island Sediment Transport Study, Palm Beach County, Florida
CLIENT: Palm Beach County
Coastal engineering analysis and numerical modeling of shoreline to evaluate shoreline recession/accretion trends relative to the hard bottom ridges. Utilized Danish Hydraulic Institute (DHI) LITPACK and MIKE 21 numerical models to simulate waves and sediment transport processes.

Village of Key Biscayne Beach Nourishment, Florida
CLIENT: Village of Key Biscayne
Coastal engineering and environmental permitting for 120,000 cy beach fill project. Marine resource and hydrographic surveys conducted, along with sand source search, jet probes, vibracores, and marine archeological surveys.

EDUCATION

Bachelor of Science in Civil Engineering, Florida International University, Miami, Florida, 2001

LICENSURE

Professional Engineer, FL

ANDRES PEREZ, P.E.
Engineering Department Head

Mr. Perez has over 17 years of civil engineering experience in Florida. He has completed the planning, design and construction administration for site/civil projects including parks, streetscape, and Right-of-Way. He has also completed designs for private site developments such as hotels, condominiums, parking lots/garages, commercial properties and dry stack marinas. These projects have required the design of stormwater management systems consisting of retention areas, drainage wells, exfiltration trenches, and outfalls. These projects have also required the design of water and sanitary sewer services.

His site/civil design experience in Florida includes the permitting of projects through agencies such as the Florida Department of Environmental Protection (DEP), South Florida Water Management District, and Florida Department of Transportation. He has processed stormwater management designs through these agencies to obtain Environmental Resource Permits (ERP), and he has demonstrated experience with projects adjacent to the coast and/or waterfront. These projects have required extensive coordination with diverse project teams to design projects that meet the development programming goals for both public and private sector clients, but that also meet the stringent regulatory permitting criteria to manage surface water runoff.

REPRESENTATIVE PROJECT EXPERIENCE

360 Condominiums Development, North Bay Village, Florida
CLIENT: Lennar Development
Civil engineering, bulkhead design and environmental permitting for 6-acre condominium development.

Bayfront Street Ends Improvements, Miami Beach, Florida
CLIENT: City of Miami Beach
Bulkhead design and environmental permitting for street ends at South Shore Drive, 10th Street, 14th Street, Lincoln Road as well as Island View Park. Streetscape design for street ends at South Shore Drive, 10th Street and Lincoln Road.

Bluepoints Marina, Port Canaveral, Brevard County, Florida
CLIENT: Bluepoints International Fisheries, Inc.
Marina design and environmental permitting for a 10-acre dry storage marina facility, including 940 dry slips, 10 wet slips, and 33 launching/holding slips. Hydrographic and marine resource surveys conducted. Civil engineering services also provided.

Casa Del Mar Yacht Club, Boynton Beach, Florida
CLIENT: Lancore Nursery
Design and permitting of 4.1 acre site for 320 dry stack marina project. Design of docks, bulkheads and dredging for 35 wet slips.

ANDRES PEREZ, P.E.

Haulover Marine Center, North Miami Beach, Florida
CLIENT: Westrec Marinas
Marine and site/civil improvements for the redevelopment of a new marina facility with approximately 400 feet of bulkhead. Surveying, water and sanitary sewer design, utility coordination, and construction administration services provided. Redesigned sheet pile bulkhead with augercastpile-supported reinforced concrete forklift launching platform.

Island Gardens Mega Yacht Harbour, Miami, Florida
CLIENT: Flagstone Properties
Marina design and environmental permitting for 50-slip megayacht harbor on Watson Island as part of $600M site redevelopment. Hydrographic and marine resource surveys and underwater bulkhead assessments provided. Design of dredging, mitigation, fixed piers, and utilities for vessels up to 450 feet long.

Latitude Development, Miami, Florida
CLIENT: Miami Riverfront Partners, LLC
Civil engineering and marine structures design and environmental permitting for a multi-tower condominium development on the Miami River. Hydrographic, marine resource surveys and tidal hydraulic numerical modeling were conducted.

Museum Park, Miami, Florida
CLIENT: City of Miami
Planning of marine amenities and environmental permitting feasibility study completion relative to a proposed baywalk, waterfront enhancement, and other public park amenities along the shoreline and within a basin on Biscayne Bay as part of the proposed $50M Museum Park improvements project. Design and permitting of stormwater management for the 22-acre master planned park, and planning/design of large vessel mooring facility.

North Beach Recreational Corridor (NBRC), Miami Beach, Florida
CLIENT: City of Miami Beach
Design and environmental permitting of multi-purpose public access corridor to traverse along the western edge of the beach dunes between 64th Street and 79th Street. Design encompasses 15 blocks and three city parks.

Peanut Island Environmental Restoration, Palm Beach County, Florida
CLIENT: Palm Beach County
Coastal/civil and marine structures design for 1.5-acre artificial reef habitat and 1.3 acre shallow seagrass lagoon. Additional features include a tidal pond and flushing channel, shallow-draft marina, pedestrian boardwalks, and site utility upgrades.

Pier 66 Marina, Ft. Lauderdale, Florida
CLIENT: LXR Luxury Resorts
Planning and design of 100-slip mega-yacht marina facility. Design of upland excavation and basin dredging, including material handling and disposal design. Design of bulkhead improvements and associated shore-support structures, along with a portion of fixed docks.

ANDRES PEREZ, P.E.

Pinetree Park, Miami Beach, Florida
CLIENT: City of Miami Beach
Shoreline, marine resource and hydrographic surveys along park waterfront. Feasibility and preliminary design of canal and public water access structures. Concepts were prepared for the City to review that included lagoons, mangrove planters and kayak launching areas. Designed the kayak launching area with a unique vinyl bulkhead system that incorporates an architectural fascia.

Quiet Waters Business Park, Deerfield Beach, Florida
CLIENT: CLW Real Estate Services Group
Evaluated the existing drainage system at the 49-acre Quiet Waters Business Park in Deerfield Beach, Florida. The area flooded during rainfall events, and the hydrology and stormwater management system was surveyed and evaluated as part of a comprehensive engineering assessment. A pump station was designed to prevent the parking lots and loading areas from flooding as these areas were critical to the operations. The pump station was designed to convey the runoff to the site retention pond. Environmental permits were modified, and construction administration services provided.

Rickenbacker Causeway Recreational Corridor, Miami-Dade County, Florida
CLIENT: Miami-Dade County
Design of shoreline stabilization and associated public recreation area improvements along 2.5 miles of shoreline of the Rickenbacker Causeway across Biscayne Bay. Marine resource and hydrographic surveys completed, and coastal engineering analysis conducted to assess design wave conditions, sediment transport and optimum shoreline stabilization methods. Design elements included landscaping, invasive species removal with native species restoration, parking improvements, stormwater management and vendor kiosks for waterfront activities.

South Pointe Park, Miami Beach, Florida
CLIENT: Hargreaves and Associates
Civil engineering and coastal/environmental permitting for the design of park improvements at the 16-acre oceanfront park.

Stormwater Treatment Distribution Area (STDA), Miami-Dade County, Florida
CLIENT: Miami-Dade County DERM
Civil engineering design for an 88-acre basin pump stormwater runoff for treatment from the Homestead Military base utilizing natural wetlands. Design included the pumping station consisting of twin 18,000 GPM pumps, dikes and outfall structures with telemetry for remote control of facility and performance monitoring.

EDUCATION

Bachelor of Science, Civil Engineering, U.P. Technical University, India, 2005

Master of Engineering, Water Resources and Hydrodynamics, Indian Institute of Science, India 2007

PUBLICATIONS

Sibtey Hasan., 2016. *Changes in Flow Hydro-Dynamics during Moderate, Typical and Extreme Historical Discharge Events at the Gautami Godavari River Entrance, India-A Case Study.***Jr of Water Res and Hyd Eng. 5 (4), pp. 160-171.**

Sibtey Hasan[1], ChiranjeeviRambabu A[2], 2017. *Enhanced Representation of Java Sea Tidal Propagation through Sensitivity Analysis.* Jr of Water Res and Hyd Eng. 6 (1), pp. 9-21.

SPEAKING ENGAGEMENTS

Lead speaker at Association of State Flood Plain Manager (ASFPM) conference at Michigan United States, 2016.

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers – ASCE

American Shore & Beach Preservation Association (ASBPA)

The International Association for Hydro Environment Engineering and Research (IAHR)

Consulting Engineers Society of India – CES

SIBTEY HASAN
Sr. Coastal Engineer

As Sr. Coastal Engineer with Coastal Systems, Mr. Hasan conducts and interprets numerical models, and subsequently applies the results for coastal and waterfront projects. He was involved in several coastal resiliency projects in the New York and New Jersey city area while working with Dewberry Engineers. He has over 10 years of worldwide experience in providing engineering solutions related to hydraulic structure design, waterfront development studies, beach protection, recreational beach management, scour analysis and offshore dredging/reclamation. His expertise lies in numerical modeling of coastal-river hydrodynamics, sediment transport, near shore spectral wave transformation, oil spill tracking, bathymetric evolution, littoral transport and two & three-dimensional hydrodynamic processes. His expertise also includes detailed knowledge of MIKE21, MIKE3 DELFT3D, TELEMAC, MIKE URBAN, LITPACK and MIKE FLOOD modeling tools to analyze and solve complex engineering and scientific problems.

REPRESENTATIVE PROJECT EXPERIENCE

Rebuild by Design Hudson River, New Jersey Transit, Hoboken, Weehawken and Jersey city, NJ

CLIENT: New Jersey Department of Environmental Protection

' etailed street scale coastal modeling to address the issues related to inland flooding to build community resilience to prevent from both major storm surges and as well as from heavy rainfall events.

Red Hook Integrated Flood Protection Feasibility Study, New York

CLIENT: New York City Economic Development Corporation

Coastal modeling for Red Hook NY, which had unprecedented flooding during Hurricane Sandy. Participated in a detailed "Integrated Flood Protection Study" (IFPS) in order to ensuring a more resilient Red Hook community in the face of future extreme weather and a changing climate.

#

HOCHTIEF Offshore Development 1-4 (HTOD 1-4) Met-ocean Study, Germany

CLIENT: HOCHTIEF Offshore Development Solutions

Conducted detailed mathematical modeling study to deliver met-ocean parameters of water levels, currents, waves, temperature and salinity relevant to creating a design basis (in the frame of BSH's (Maritime and Hydrographic Agency) first approval).

#

Preparation of FEED Package for LNG Terminal at Gangavaram, India

CLIENT: Petronet LNG Ltd.

Hydrodynamic, extreme wave analysis and siltation study for the first phase development of the Gangavaram LNG terminal. The main feature of this study was to prepare the FEED (Front End Engineering Design) package in order to complete the first phase of development.

#

SIBTEY HASAN

Hydrological Study for Deen Dayal Field Development Project, Kakinada, India

CLIENT: Punj Lloyd Limited

Study involved detailed hydrodynamic wave conditions during extreme weather, morphological and littoral drift transport modeling to provide the burial depth for the proposed gas pipeline route in Kakinada India. Provided estimation for required amount of dredging, as well as amount of rock-fill material.

#

Harbour Sediment Transport Study for the Ports of Dar-es-Salaam and Lindi, Tanzania

CLIENT: TPA (Tanzania Port Authority)

Hydrological and morphological modeling for Dar-es-Salaam and Lindi Harbour to provide a long-term solution for a sediment transport budget.

EDUCATION

Bachelors of Science, Biology, University of Southern California, Los Angeles, California, 1998

Bachelors of Art, Environmental Studies, University of Southern California, Los Angeles, California, 1998

Master of Science, Oceanography, Florida State University, Tallahassee, Florida, 2001

PROFESSIONAL AFFILIATIONS

Florida Association of Environmental Professionals, Tallahassee Area Chapter Board Member

Society of Wetland Scientists

United States Green Building Council

CERTIFICATIONS

Professional Wetland Scientist

LEED Accredited Professional, BD&C

SPEAKING ENGAGEMENTS

Coastal Construction Permitting, Current Trends in Coastal Permitting & Mitigation, Beach Nourishment & Nearshore Hardbottom, Florida Chamber Environmental Permitting Summer School – July 2015

Streamlining the Regulation of Florida Coastal Resources , American Shore and Beach Preservation (ASPBA), Virginia Beach, VA – October 2014

Environmental Windows, Beach Renourishment and Nearshore Hardbottom, Florida Shore and Beach Preservation Association (FSBPA), FL – September 2014

Expanding Focus on Florida Natural Gas, Florida Chamber Environmental Permitting Summer School, Marco Island, FL – July 2014

Beach Nourishment and Nearshore Hardbottom, Coastal Construction Permitting, Coastal Marine Permitting and Mitigation, Florida Chamber Environmental Permitting Summer School, Marco Island, FL – July 2014, 2013 & 2012

Opening Speaker, Submerged Lands and Environmental Resources Coordination Conference (SLERCon), Orlando, FL – June 2013

Public Meeting FDEP Oil and Gas Q&A with Collier County Residents – September 2013

DANIELLE H. IRWIN
Director

Ms. Irwin has over 15 years of experience in the field of water resource management including environmental monitoring, assessment, planning and regulatory permitting in the State of Florida. Ms. Irwin has a proven track record negotiating complex technical issues, particularly with regard to wetland, aquatic and coastal ecosystems, with a variety of interest groups. Ms. Irwin very effectively interprets and applies rules and statutes to the benefit of projects, considering scientific facts and political pressures to achieve successful outcomes. She effectively manages workflow and product delivery, accurately identifies key issues and project needs to achieve environmentally sustainable ecosystem solutions.

Ms. Irwin has extensive background in regulatory permitting of recreational water access, wetland mitigation, coastal development, and beach projects having worked as a regulator for the Florida Department of Environmental Protection (FDEP). Her regulatory experience includes oversight of statewide programs including Beaches, Inlets and Ports Joint Coastal Permitting, Coastal Construction Control Line Permitting, Environmental Resource Permitting, Beach Management Funding Assistance, Mitigation Banking, Mining, and Oil and Gas Regulation. Her background is key to facilitating project development from a policy, permitting, and funding perspective. As a former business owner of an environmental consulting firm, Ms. Irwin also understands the need for accurate, efficient work products as well as the importance of meeting the needs of clients.

REPRESENTATIVE PROJECT EXPERIENCE

St. Lucie Inlet, Martin County, Florida
APPLICANT: Martin County
Coordinated the FDEP review and approval of the update to the sediment budget, sand bypassing volume, and Inlet Management Plan. Negotiated agreements with the County, City of Jupiter Island, and residents on inlet dredging and beach placement frequency and locations.

SE Florida Sediment Assessment & Needs Determination, Florida
SPONSORS: FDEP & Corps
Supervised a joint study by FDEP and the Corps, which included an SE Florida Sediment Assessment and Needs Determination (SAND) Study on offshore sand availability to service permitted beach nourishment projects for the next 50 years. The joint study focused on the five southeastern counties, from St. Lucie to Miami-Dade county.

Summerhaven River Restoration, St. Johns County, Florida
APPLICANT: St. Augustine Port, Waterway & Beach District
Coordinated the FDEP review and approval of the Joint Coastal Permit for restoration of a historical river in St. Johns County. Project involved

DANIELLE H. IRWIN

FDEP Offshore Sand Management Discussions with State Congressional Representatives and County Commissioners in St. Lucie, Martin, Palm Beach, Broward and Miami-Dade County – June 2013

Public Meeting FDEP Q&A Beach Nourishment with Town of Palm Beach Residents, Save Our Shoreline (SOS) Inc., FL – March 2013

Hardbottom Impacts and Mitigation: Developing a Persistent Policy on an Ephemeral Situation, FSBPA, Jacksonville, FL – February 2013

Stakeholder Meetings for the FDEP Pilot Beach Management Agreement with Palm Beach Island Municipalities, Palm Beach County, State/Federal Regulators, and the Public, Town of Palm Beach, FL – Summer 2012

Presented FDEP Beach Management Agreement with the Palm Beach Board of County Commissioners, Palm Beach, FL – July 2012

shorebird mitigation coordination with FFWCC, sand excavation, and dune and beach nourishment for sand disposal.

A1A Reconstruction, Ft. Lauderdale, Broward County, Florida
APPLICANT: FDOT
Coordination of FDEP staff review for re-construction of storm damaged North Ocean Blvd. (aka State Road A1A). The project included reconstruction of the road, dune enhancement and plantings, sidewalk, curb and gutter demolition and reconstruction, construction of a decorative and retaining wall with pedestrian cut outs, new stormwater runoff management system, hot spot nourishment, and reconstruction of street accesses, driveways and entrances.

Surf Club Re-Development, Surfside, Miami-Dade County, Florida
APPLICANT: Fort Capital Management, LLC
Provided consulting services for the re-development of the 9-acre historic Surf Club property including oversight of the Coastal Construction Control Line Permitting, 100-Year Storm Impact Analysis, review of exterior lighting for the protection of marine turtles; and sand management with beach nourishment. Directly involved in resolving non-compliance issues resulting in a Consent Order detailing the sand removal and replacement activities required by FDEP.

Indigo Branch Drainage Basin, Clay County, Florida
CLIENT: Tocoi Engineering & County
Bank evaluation of channelized stream through urban communities including riparian wetland assessment. Evaluated proposed flow attenuation approaches and bank stabilization methods in conjunction with the project engineer. Permit processing involving SJRWMD & ACOE.

Governor's Pointe, Green Cove Springs, Florida
CLIENT: Governor's Point Yacht Club LLC
Provided environmental assessment and coordination for a new planned residential community with associated 49-slip marina. Delineated project wetlands, developed wetland impact and mitigation plans, and established the shoreline stabilization approach including performing the bulkhead construction administration for the project which fronted two water bodies. Coordinated the environmental permits at the local, state and federal levels including a hybrid residential/commercial sovereignty submerged lands lease for the marina.

Florida Gulf Coast Mitigation Bank, Levy County, Florida
APPLICANT: Florida Gulf Coastal LLC
Coordination of FDEP staff review for proposed ~1587 acre mitigation bank with enhancement of salt marshes, freshwater marshes, coastal scrub, and mesic flatwoods in Cedar Key. Involvement included coordination with permit reviewer and applicant, Division of State Lands and other governing agencies, policy and applicable regulation review, review of mitigation plan and service area.

DANIELLE H. IRWIN

Long Bar Pointe Mitigation Bank, Manatee County, Florida
APPLICANT: Long Bar Pointe LLLP & Cargor Partners VII
Coordination of FDEP staff review for proposed mitigation bank with enhancement of seagrasses and mangrove areas. Involvement included coordination with permit reviewer and applicant, Division of State Lands and other governing agencies, policy and applicable regulation review, review of mitigation plan and service area in a pre-application manner.

235 Wingate LLC, St. Johns River, Clay County, Florida
Multi-family residential marina in Riverdale including seagreass & manatee impact evaluation. Permit processing involving FDEP, ACOE.

Town of Orange Park, Clay County, Florida
Conversion of right of way adjacent to St. Johns River to a pocket park with a stormwater nutrient separating baffle box, bulkhead and community pier. Permit processing involving FDEP and ACOE.

City of Green Cove Springs, Clay County, Florida
Cypress St. stormwater outfall retrofit and shoal removal. Project involved beneficial use of dredged materials for landscaping at the public utilities facility. Permit processing involving FDEP and ACOE.

Morgan Fish Camp, Clay County, Florida
St. Johns County shoreline historical aerial analysis and Division of State Land application for recordable document for lands filled prior to 1975. Sovereign submerged land authorization involving FDEP.

Watersedge LLC – ICWW, St. Johns County, Florida
Commercial marina layout and dredging, bulkhead, wetland delineation, salt marsh mitigation design, implementation and monitoring. Permit processing involving SJRWMD and ACOE.

City of Green Cove Springs, Clay County, Florida
Governors Creek boat ramp expansion and accessory docks layout. Permit processing involving FDOT, FDEP, ACOE.

Clay County Parks & Recreation, Clay County, Florida
Governors Creek boat ramp expansion and accessory docks layout & permitting. Permit processing involving FDOT, FDEP, ACOE.

Mayport Marina, Duval County, Florida
Dock replacement and dredge. Permit processing and sovereign submerged lands authorizations involving FDEP and ACOE

Julington Creek Marina, Duval County, Florida
Dock replacement and dredge. Permit processing and sovereign submerged lands authorizations involving FDEP and ACOE

EDUCATION

Bachelor of Arts, Marine Affairs and Ocean Policy, University of Miami, Coral Gables, Florida, 2000

Master of Arts, Marine Affairs and Policy, University of Miami – Rosenstiel School of Marine and Atmospheric Science, Miami, Florida, 2006

Florida Coastal and Wetlands Master Naturalist, 2014

PROFESSIONAL AFFILIATIONS

Association of States Floodplain Managers
Florida Floodplain Manager Association
South Florida Association of Environmental Professionals

CERTIFICATIONS

DEP Qualified Stormwater Management Inspector

Certified Floodplain Manager

ADRIANA CABRERA

Environmental/Permitting Department Head

Ms. Cabrera provides a range of services to public and private clients in her role as Environmental/Permitting Department Head. Her responsibilities include coordination with project teams and regulatory agencies relative to code compliance requirements for securing environmental permit approvals at local, county, state, and federal levels. She specifically manages projects involving coastal and environmental permit applications, marine turtle lighting permit applications and other specialized regulatory agency requirements.

Ms. Cabrera's project management responsibilities include coordination and review of project design plans, and other technical/legal data to determine a project's scope of work, including the elements required to efficiently obtain environmental and construction permits. She also assists project teams in facilitating project design relative to code compliance and permit issuance. In addition, Ms. Cabrera applies her experience to the evaluation of technical and legal data required to effectively determine the feasibility of proposed projects and facilitate their implementation. She also coordinates project teams for coastal and waterfront development projects; including design professionals, technical disciplines, and legal counsel.

She has an in-depth understanding of many regulations and procedures governing coastal construction, and has established relationships with key regulatory agency personnel to expedite processing. Ms. Cabrera is accustomed to tight schedules and regularly coordinates teams of architects, engineers, scientist and environmental attorneys.

REPRESENTATIVE PROJECT EXPERIENCE

315 Gulfview Blvd, Clearwater, Florida
CLIENT: L.O.M., Inc.
Provided post-construction guidance relative to reducing the National Flood Insurance Program Rating and flood insurance cost for the six-story, mixed-use structure. Coastal Systems designed and permitted a wave dissipating wall and obtained a Conditional Letter of Map Revision and Letter of Map Revision through Federal Emergency Management Agency (FEMA) for the project site.

Altos del Mar, Miami Beach, Florida
CLIENT: General Real Estate Corp.
DEP coastal construction control line permitting, flood regulation compliance review, and DEP exterior lighting approval compliance for a several single family residence development within the Altos Del Mar section of North Miami Beach. The project included the permitting of six single family sites.

ADRIANA CABRERA

Armani Sales Center, Sunny Isles Beach, Florida
CLIENT: The Related Group
Consulting services relative to performing an initial coastal engineering analysis to confirm the feasibility of securing a Federal Emergency Management Agency (FEMA) Letter of Map Revision (LOMR).

Aviva Development, Coral Gables, Florida
CLIENT: Ponce and Bird Miami Development, LLC
Provide environmental and civil permitting services for the development of an eight story apartment building containing approximately 272 units, together with an attached 8 story parking structure. Secured environmental permits through the FDOT, FDEP, DRER. The permits secured included FDOT Drainage and Driveway Connection, ERP, and NPDES.

Bath Club, Miami Beach, Florida
CLIENT: Arquitectonica
DEP coastal construction control line permitting and flood regulation compliance review for residential project with recreational amenities.

Cadillac Hotel, Miami Beach, Florida
CLIENT: HHLP Miami Beach Associates, LLC
Development a 10-story hotel with understructure garage, swimming pool, and cabanas. Obtained environmental resource permits from the Florida Department of Environmental Protection (FDEP) that included lighting review from the Florida Fish and Wildlife Conservation Commission (FWC). Secured environmental permits for drainage connection through the Florida Department of Transportation (FDOT), temporary and permanent well and storm water through the FDEP and Miami-Dade County Department of Regulatory and Economic Resources(DRER).

Canyon Ranch, Miami Beach, Florida
CLIENT: WSG
Redevelopment of a 34 story and 28 story towers with understructure parking garage, swimming pools, spas, restaurant, and spa complex. Provided environmental permitting services in securing permits through the Department of Environmental Protection and lighting approval through the Florida Fish and Wildlife Conservation Commission FWC. Also provided Florida Building Code, City Code and FEMA compliance reviews.

Capri, Fort Lauderdale, Florida
CLIENT: Adache Architects.
Development a 26-story hotel with five (5) levels of parking/retail structure. Obtained environmental resource permits from the Florida Department of Environmental Protection that included lighting review from the Florida Fish and Wildlife Conservation Commission. Also provided Florida Building Code, City Code, and Federal Emergency

ADRIANA CABRERA

Management Agency flood compliance reviews.

Clevelander Hotel, Miami Beach, Florida
CLIENT: STA Architectural Group
Consulting services relative to the modification of the DEP coastal construction permit.

Continental South Beach, Miami Beach, Florida
CLIENT: Insite Miami Beach, LLC
Evaluated design and obtained environmental permits for hotel renovations for the Florida Department of Environmental Protection coastal construction control line (CCCL) and Environmental Resource Permits. Coordinated lighting review with the Florida Fish and Wildlife Conservation Commission (FWC).

The Crown Hotel, Miami Beach, Florida
CLIENT: STA Architects
Redevelopment of historic structure with condominium/hotel units. Provided coastal and civil permitting services for site redevelopment. Also provided Florida Building Code (FBC) and City Code compliance reviews. Services are estimated to complete mid-2015.

Eighty-Seven Park, Miami Beach, Florida
Responsible for obtaining FDEP CCCL Permit for the proposed 22-story condominium tower with an underground garage, pools, landscape areas, exterior lighting, and common areas including a beach walk extension as well as two pedestrian beach access connections along 87th Street and 87th Terrace street ends, at North Miami Beach.

Hallandale Beach Club, Hallandale Beach, Florida
CLIENT: The Related Group
Consulting services relative to DEP Coastal Construction Control Line (CCCL) permitting for site development.

Hollywood Beach Mobi Mats, City of Hollywood, Florida
CLIENT: City of Hollywood
Provided consulting services relative to the permanent placement of mobi mats on Hollywood Beach to provide ADA access to the general public. Secured an environmental permit from the Department of Environmental Protection (DEP).

La Perla, Sunny Isles Beach, Florida
CLIENT: La Perla Sunny Isles, LLC
Services relative to securing a "replacement" DEP Coastal Construction Control Line (CCCL) permit for specific elements of the development that were not yet completed.

ADRIANA CABRERA

Loews Hotel, Miami Beach Florida
CLIENT: MB Development LLC
Consulting services relative to DEP Coastal Construction Control Line (CCCL) permitting for site development.

Museum Park, City of Miami, Florida
CLIENT: City of Miami
Planning of marine amenities and environmental permitting feasibility study completion relative to a proposed baywalk, waterfront enhancement, and other public park amenities along the shoreline and within a basin on Biscayne Bay as part of the proposed $50M Museum Park improvements project. Permitting of stormwater management for the 22-acre master planned park through FDOT, DRER, and FDEP. The permits secured included FDOT Drainage and Driveway connection, Environmental Resource Permit (ERP), National Pollutant Discharge Elimination System (NPDES).

National Hotel, Miami Beach, Florida (272004)
CLIENT: New National, LLC
Obtained FDEP Coastal Construction and CCCL Permits for the hotel improvements located at 1677 Collins Ave. Improvements included cabana structure, Airstream trailer, and expansion of an additional building. Reviewed structural design elements for compliance with FBC coastal regulations. Also processed marine turtle lighting review compliance.

Oriana, Lauderdale-by-the-Sea, Florida
CLIENT: Pier Point Developers, LLC
DEP coastal construction control line permitting, Florida Building Code coastal section compliance review, and flood regulation compliance review for townhome and condominium project with dune restoration.

Porsche Design Tower Condominium, City of Sunny Isles Beach, Florida
CLIENT: Dezer Properties Company
DEP coastal construction control line permitting, Florida Building Code coastal section compliance review, and flood regulation compliance consultations for oceanfront condominium with parking pedestal, innovative car elevator and deep mat foundation. Negotiated approval of lighting in compliance with DEP/FWC marine turtle protection regulations.

Quantum on the Bay, Miami, Florida
CLIENT: Terra Group
Provided post-construction guidance relative to reducing the National Flood Insurance Program Rating and flood insurance cost for the two tower interconnected residential buildings with 44 and 51 stories. Assisted team in securing a FEMA Letter of Map Revision for the project site.

ADRIANA CABRERA

Raleigh Hotel, Miami Beach, Florida
CLIENT: Claro Development
Obtained FDEP CCCL Field Permit for new pavilions and basement construction, landscape and exterior lighting improvements.

Ritz Residences, Sunny Isles Beach, Florida
CLIENT: Sunny Isles Property Venture, LLC
Coastal permitting services relative to the FDEP Environmental Resource Permit and CCCL permitting processes. Coordinated with County and regulatory agencies to process required Notices to Proceed for beach fill activities.

Sand Castles, Hollywood, Florida
CLIENT: Dupont Hollywood Limited Partnership
Conceptual design review services relative to the coastal construction permitting of condominium project.

Seville Redevelopment and Beachwalk Extension, Miami Beach, Florida
CLIENT: Marriott International Design and Construction Services
Provided environmental services for the redevelopment of the historic Seville site, which included the construction of a 5 story, 30 unit hotel inclusive of a seaward 2 story cabana structure, swimming pools, spa building, and wood cabanas. As well as the replacement of the existing City boardwalk with an on-grade paver-on-sand pedestrian path. Obtained environmental resource permits from the Florida Department of Environmental Protection that included lighting review from the Florida Fish and Wildlife Conservation Commission.

Shore Club, Miami Beach, Florida
CLIENT: Shore Club Property Owner, LLC
Consulting services relative to FDEP Coastal Construction Control Line (CCCL) permitting of the proposed development.

SoHo Beach House, Miami Beach, Florida
CLIENT: Ryder Properties, LLC
Coastal consulting services relative to DEP coastal construction control line (CCCL) permitting of the proposed development.

South of Fifth, Miami Beach, Florida
CLIENT: BR Villa Luisa, LLC.
Development of four condominium buildings on a garage pedestal with an on-grade pool deck area and dune restoration project. Provided coastal permitting and engineering services that included permits from the FDEP and marine turtle lighting review through the FWC. Also provided Florida Building Code, City Code, and FEMA flood compliance reviews. Permits secured included FDEP Coastal Construction Control Line Permit (CCCL), ERP and NPDES.

ADRIANA CABRERA

South Pointe Park, Miami Beach, Florida
CLIENT: City of Miami Beach
Provided environmental and civil permitting services for an award winning multi-purpose recreational park area in excess of 16-acres. Activities include the construction of a main park structure with offices/concession/restrooms, a storage facility for park vehicles, a raised serpentine walkway, and playground facilities. The permits secured included FDOT Drainage and Driveway Connection, ERP, NPDES and FDEP CCCL.

Trump Royale, Sunny Isles Beach, Florida
CLIENT: Royale Florida Enterprises, Inc.
Coastal consulting services relative to DEP coastal construction control line (CCCL) permitting of the proposed development.

Turnberry Isle Beach Club, Sunny Isles Beach, Florida
CLIENT: Beach Club Acquisition, LLC
Evaluated design and obtained environmental permits for a 52-story condominium tower with a cantilevered deck and swimming pool for the Florida Department of Environmental Protection coastal construction control line (CCCL) permit. Coordinated lighting review with the Florida Fish and Wildlife Conservation Commission (FWC).

Versailles, Miami Beach, Florida
CLIENT: CG Properties, LLC
Responsible for transferring the existing FDEP CCCL permit to the new property owner of the condo building located at 3425 Collins Ave. A Coastal A Zone analysis and 100-year Storm Impact analysis were also conducted. Supervised sand management strategies.

W Hotel, Ft. Lauderdale, Florida
CLIENT: Adache Associates Architects P.A.
Coastal consulting services relative to DEP coastal construction control line (CCCL) permitting of the proposed development.

EDUCATION

Master of Science, Marine Science, Florida Atlantic University, Boca Raton, Florida, 2004

Bachelor of Arts, Anthropology, University of Arizona, Tucson, Arizona, 2000

CERTIFICATIONS

Florida Master Naturalist Program Graduate (Uplands, Wetlands and Coastal) February 2012
DAN (First Aid, CPR, AED & Oxygen) 2011
Protected Species Observer, 2007
PADI Emergency First Responder (CPR, First Aid, AED), 2007
NITROX, 2005
Coast Guard Coastal Piloting Certification, 2005
Boat Safe USA Safe Operation Certification, 2001
PADI Rescue Diver, 2001
PADI Advanced Diver, 1998
PADI Open Water Diver, 1996

PROFESSIONAL AFFILIATIONS

AAUS, American Academy of Underwater Scientists Scientific Diver
FAEP, Florida Association of Environmental Professionals

CHRISTIE BARRETT

Environmental/Permitting Project Manager/Marine Biologist

Ms. Barrett has over 12 years of experience in the field of environmental monitoring, assessment, planning and regulatory permitting at the local, State and Federal levels. Experience includes environmental assessments associated with beach nourishment, marina construction, marina and canal dredging, coastal structures, fiber-optic cable installation, coral reef damage by vessels, dune restoration, artificial reefs construction and long term monitoring, evaluation of the effectiveness of mitigation artificial reefs and seagrass transplants, biological monitoring of nearshore and offshore coral reef and ephemeral hardbottom habitats in association with beach nourishment related projects, threatened and endangered species surveys, biological surveys involving seagrass habitat, dune and upland vegetation surveys, shorebird and in-water sea turtle surveys.

Ms. Barrett has obtained environmental approvals and permits working directly with the staff of Federal, State and Regional agencies including the National Marine Fisheries Service, U.S. Army Corps of Engineers, Florida Department of Environmental Protection, and other local government marine resource management agencies on a variety of ocean and coastal resource management and science issues. Experience also includes application of grants, funding applications, Joint Coastal Permits, Environmental Resource Licenses, and preparation of Environmental Impact Statements, Environmental Assessments, Biological Assessments, Cumulative Impact Assessments, Essential Fish Habitats, Biological Opinions (in conjunctions with FWS) and UMAM documentation.

PROJECT EXPERIENCE WITH FORMER FIRM

Anna Maria Island Beach Renourishment Project, Manatee County, Florida
CLIENT: Manatee County
Ms. Barrett has 4 years of experience working with Manatee County as a project scientist. During that time she was responsible for the biological monitoring and mapping of the natural and artificial reefs in the nearshore region of the Gulf of Mexico, data analysis, and report preparation.

Bogue Inlet Channel Erosion Response Project, Bogue Inlet, North Carolina
CLIENT: Bogue Inlet
Assisted in development of an Environmental Impact Statement (EIS), Cumulative Effects Assessment and Essential Fish Habitat Document in accordance with the State of North Carolina and Federal National Environmental Policy Act (NEPA) requirements for the Bogue Inlet Channel Erosion Response Project, Bogue Inlet, NC (2003).

Broward County Segment III Shore Protection Project
CLIENT: Broward County
Ms. Barrett has 4 years of experience working with Broward County, Florida as a co-manager. She was responsible for the scheduling of

CHRISTIE BARRETT

biological monitoring activities on the natural and artificial reefs, personnel and sub-contractors; she managed the crew in the field, conducted biological monitoring requirements, data analysis, report preparation and submittals. scientist responsible for establishing natural nearshore hardbottom transects (75) and artificial reef transects (27) and performed environmental monitoring (including *in situ* and video documentation) of nearshore hardbottom resources from pre-construction through 18-months post-construction. Monitoring methodology included nearshore hardbottom delineation, sediment depth measurements, video documentation followed by point count analysis, coral stress monitoring, coral fate-tracking stations, and the in situ quadrat Benthic Ecological Assessment for Marginal Reefs (BEAMR) technique. Also conducted in-water sea turtle population surveys, hardbottom edge mapping using DGPS software and Hypack® and pipeline route inspections. She also assisted in the preparation of all compliance monitoring reports including the Governor's Report.

Collier County Beach Renourishment Project 2003 and 2006 / Doctors Pass Maintenance Dredging, Collier County, Florida

CLIENT: Collier County

Ms. Barrett has 3 years of experience working in Collier County as a principal investigator for environmental permitting and seagrass monitoring for the Doctors Pass Inlet Maintenance Dredging Project and as a project scientist for the Collier County Beach Nourishment Project, Collier County, FL (2004-2006). During which time she conducted nearshore hardbottom edge mapping, biological monitoring using Benthic Ecological Assessment for Marginal Reefs (BEAMR) on nearshore transects, a resource investigation along the nearshore spoil site located between Florida Department of Environmental Protection (FDEP) survey monuments R-60 to R-62, a seagrass survey along the shoal at Doctors Pass Inlet and she assisted with data analysis and report preparation of the Marine Resource Investigation Report for the North Collier County, FL Beach Renourishment Project.

Midtown Beach Renourishment Project, Palm Beach County, Florida

CLIENT: Palm Beach County

Performed biological assessment using Benthic Ecological Assessment for Marginal Reefs (BEAMR), sediment measurements and still photography on the Breakers Rock Pile artificial reef and natural reef offshore of Mid-Town Beach Renourishment and Expansion Project. Conducted beach suitability assessments, including penetrometer testing and data analysis, of marine turtle nesting beaches as required by State and Federal approvals.

North, South, and Central Boca Raton Beach Renourishment Projects, Palm Beach County, Florida

CLIENT: City of Boca Raton

Ms. Barrett has 3 years of experience working with the City of Boca Raton as a project scientist. During that time she was responsible for the biological monitoring and mapping of the natural and artificial reefs in

CHRISTIE BARRETT

the nearshore and offshore region of the Atlantic waters off of North, Central and South Boca Raton, data analysis, and report preparation.

South Siesta Key Restoration Project, Siesta Key, Sarasota County, Florida

CLIENT: Siesta Key

Ms. Barrett worked with Sarasota County for 3 years as a project manager. During that time she helped with the application for permits and the necessary documentation to acquire the permit including an Environmental Assessment, Biological Opinion, Essential Fish Habitat, and Cumulative Impact Assessment. She was also responsible for the development of a biological and shorebird monitoring plan, implementation of the nearshore and offshore hardbottom monitoring, personnel and monitoring scheduling, budgeting, data analysis, data presentation, and report preparation. Biological monitoring included coral fate tracking, BEAMR, sediment measurements, video and still photography, hardbottom edge mapping using DGPS software and Hypack®, pipeline route inspections, artificial reef mapping and monitoring and a coastal dune vegetation survey. Performed hardbottom damage assessment offshore of Sarasota after a shrimp trawlers net damaged corals along a 2 acre area. Conducted a restoration effort to reattach approximately 200 damaged corals to the hardbottom, installed transects and tagged restored corals and conducted future survivability monitoring.

Town of Longboat Key Beach Longboat Key, FL Canal Dredging and Seagrass Mitigation

CLIENT: Town of Longboat Key

Assisted in seagrass transplantation of Shoal Grass (*Halodule wrightii*) and completed post-construction seagrass transplantation monitoring from 2004 to 2007. Monitoring methodology included randomize grid samples ($1m^2$ quadrats) to survey each receiver site. In each receiver site a $1m^2$ quadrat was randomly placed on the substrate and overall percent cover of shoal grass (*Halodule wrightii*) was noted. The random samples were averaged to determine overall percent cover within each site. During each survey, 369 samples were characterized. Performed all of the data analysis and co-authored the post-construction seagrass survival assessment monitoring reports.

Town of Palm Beach Coastal Strategic Planning, Engineering and Permitting, Palm Beach, Palm Beach County, Florida

CLIENT: Town of Palm Beach

Currently writing an Essential Fish Habitat Assessment for the National Marine Fisheries Service in accordance with Magnuson-Stevens Fishery Conservation and Management Act in conjunction with the South End Reach 8 Nourishment Project, Palm Beach, FL (2011). Assisted in the development of an Environmental Assessment for the Reach 8 Renourishment Project, Palm Beach County, Fl (2005).

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REPRESENTATIVE PROJECT EXPERIENCE

Hallandale Beach Renourishment, Broward County, Florida
CLIENT: City Hallandale Beach
Coastal Systems is providing engineering, design, permitting and resource assessment consulting services to the City of Hallandale Beach related to beach renourishment. Design, resource assessment and permit application processing are ongoing for a renourishment of approximately 2 miles of beach. Resource assessment involves preparation of a Biological Evaluation for endangered corals listed under the federal Endangered Species Act.

Hillsboro/Deerfield Beach Renourishment, Broward County, Florida
CLIENT: Town of Hillsboro Beach
Secured Environmental Resource Permit, Corps Individual Permit, and Environmental Resource License, for 375,000 beach fill project. Prepared yearly funding applications and provide permit compliance services. Conducting hardbottom mapping, pipeline corridor, *Acropora* sp. and in-water sea turtle surveys and year-long shorebird monitoring.

Hollywood Beach Renourishment Project, City of Hollywood, Florida
CLIENT: City of Hollywood Beach
Secured Environmental Resource Permit, Corps Individual Permit, and Environmental Resource License, for 69,400 beach fill project. Prepared yearly funding applications and provide permit compliance services. Conducted pre- and post-construction biological monitoring including hardbottom edge and emergent epifauna surveys, nearshore transect data (quadrats, sediment & video), *Acropora cervicornis*, and artificial reef monitoring.

Jensen Beach Managed Mooring Field, Martin County, Florida
CLIENT: Martin County
Project manager responsible for the design and environmental permitting of 51-slip managed mooring field buoys to accommodate the mooring of vessels ranging from 20 to 60 feet in length. Conducted marine resource survey for the federally listed Johnson's seagrass (*H. johnsonii*) within a 34.29 acre area of the Indian River Lagoon, prepared grant funding applications, and represented the County in an 120 Administrative Hearing.

Key Biscayne Beach Seagrass Mapping and Monitoring, Florida
CLIENT: Village of Key Biscayne
Provided project management, planning, and permitting services, as well as conducted biological surveys. Conducted resource assessments of the proposed offshore borrow areas, nearshore seagrass edge mapping, and *Acropora* habitat surveys to facilitate project design and permitting. A project specific Biological Monitoring Plan was prepared and prior to commencement of construction. Conducted Braun Blanquet monitoring along twenty-seven 35 meter long transects to establish a baseline for evaluation of any unanticipated project related impacts. Field Observation

CHRISTIE BARRETT

Reports were prepared documenting the findings of the borrow area surveys, nearshore seagrass edge surveys, and Braun Blanquet monitoring data with report submittal to the environmental regulatory agencies. Prepared DEP Local Government Funding Requests. Continuing to assist with long term beach management strategies.

Miami Harbor Phase III, Miami-Dade County, Florida
CLIENT: CDM Smith for PortMiami
Performed installation of 25 transects (each 200m long) and pre-construction baseline monitoring. Monitoring methodology included video documentation of seagrass beds within a 1m wide area centered on the transect line and quadrat assessments to quantitatively describe seagrass cover within the project area. An overall visual percent cover was estimated for all seagrass within each quadrat and a score was assigned according to a modified Braun Blanquet abundance scale.

Munyon Island Small Boat Docking Facility, Palm Beach County, Florida
CLIENT: DEP State Parks
Design of 20-slip docking facility to provide access to Munyon Island within John D. MacArthur State Park. Coastal engineering study performed to design pile crib breakwater within access pier. Provided Resident Project Representative services during construction and post-construction seagrass monitoring services for environmental permit compliance.

Town of Palm Beach South End Beach Nourishment, Florida
CLIENT: Town of Palm Beach
Responsible for on-going State and Federal permitting of an interim truck haul beach nourishment project for the Reach 8 area. Evaluated beach management, environmental permitting and funding options. Conducted marine resource investigations including hardbottom mapping and *Acropora* sp. surveys. Designed truck haul beach renourishment to minimize impacts to resources, resulting in 0.9 acre of impact. Designed mitigation reef and conducted UMAM assessment to ensure aquatic functions and values adequately offset by proposed mitigation.

U.S. Coast Guard Sector Key West, Key West, Florida
CLIENT: U.S. Coast Guard
Conducted a marine resource assessment of the existing dock and bulkhead structures and navigational aids, in accordance with the NMFS recommendations for sampling *Halophila johnsonii*, the Recommended Survey Protocol for *Acropora* spp., and the with the Florida Keys National Marine Sanctuary (FKNMS) Protocol for Benthic Surveys of Coral Resources in FKNMS, to document the extent, species, and density of corals, sponges, and seagrasses growing within the Project area.

U.S. Coast Guard Sector Tampa Bay Cut "A", Tampa, Florida
CLIENT: U.S. Coast Guard
Conducted a marine resource assessment of the existing dock and bulkhead structures and navigational aids, in accordance with the NMFS

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recommendations for sampling *Halophila johnsonii*, the Recommended Survey Protocol for *Acropora* spp., and the with the FKNMS Protocol for Benthic Surveys of Coral Resources in FKNMS, to document the extent, species, and density of corals, sponges, and seagrasses growing within the Project area.

EDUCATION

Bachelors in Business Administration, University of Miami, Coral Gables, 2004

Project Management Professional Certification, University of Miami, Coral Gables, 2016

PROFESSIONAL AFFILIATIONS

Project Management Institute

Florida Floodplain Managers Association

OFFICE LOCATION

Coral Gables, FL

LILIANE SMATT

Senior Project Manager

Ms. Smatt has over 12 years of project management experience in construction, environmental permitting and design consulting. Areas of expertise include coastal and waterfront site development focusing on project feasibility, conceptual design and permitting strategy. Ms. Smatt oversees implementation of specialized projects that include coastal/waterfront resorts, residential, and mixed-use structures, docks and marinas, beach nourishment, inlet stabilization and maintenance, beach and inland coastal waters shoreline stabilization structures, stormwater drainage systems, parks and other recreational facilities, and environmental enhancement projects She has ample experience working with various environmental agencies such as the Florida Department of Environmental Protection (FDEP), Florida Fish and Wildlife Conservation Commission (FWC), Federal Emergency Management Agency (FEMA), US Army Corps of Engineers (USACOE), as well as all local municipalities in Miami-Dade, Broward and Palm Beach counties.

Ms. Smatt coordinates with project teams and regulatory agencies relative to code compliance requirements for securing comprehensive permit approvals at local, county, state, and federal levels. She has an in-depth understanding of the many regulations and procedures governing coastal/waterfront construction, and has established relationships with key regulatory agency personnel.

REPRESENTATIVE PROJECT EXPERIENCE

Beachwalk, Miami Beach, Florida
CLIENT: City of Miami Beach
Civil/coastal engineering design and environmental permitting for the on-grade paver walkway that connects 22nd Street and Lummus Park in the South Beach district of Miami Beach.

Beachwalk II, Miami Beach, Florida
CLIENT: City of Miami Beach
Civil/coastal engineering design and environmental permitting for the 2,300 linear feet on-grade paver walkway that connects South Pointe Park, Marjory Stoneman Douglas Park, and Lummus Park in the South of Fifth district of Miami Beach.

Beachwalk North Extension, Miami Beach, Florida
CLIENT: City of Miami Beach
Design coordination, environmental permitting, and marine turtle lighting approval for an extension of the City Miami Beach's original Beachwalk path between 21st and 23rd Streets, east of the W Hotel and City Park.

North Beach Recreational Corridor (NBRC), Miami Beach, Florida
CLIENT: City of Miami Beach
Design and environmental permitting of multi-purpose public access corridor to traverse along the western edge of the beach dunes between

LILIANE SMATT

64th and 79th Street. Design encompassed 15 blocks and three city parks.

Disney Vero Beach, Vero Beach, Florida
CLIENT: Walt Disney World Co.
Design and permitting services related to annual treatment of dune erosion along approximately 1,500 linear feet of shoreline.

Highland Oaks Park, Miami-Dade County, Florida
CLIENT: J. Milton & Associates
Design and permitting of 3.1 acres of wetlands restoration as a mitigation project that included removal of exotic species, excavation to established grades, and planting of native freshwater wetland species.

South Pointe Park, Miami Beach, Florida
CLIENT: Hargreaves and Associates for the City of Miami Beach
Civil design and coastal/environmental permitting of a multi-purpose recreational park area in excess of 16 acres. Activities include the construction of a main park structure with offices/concession/restrooms, a storage facility for park vehicles, a raised serpentine walkway, and playground facilities.

Fairmont Turnberry Isle Beach Club, Sunny Isles Beach, Florida
CLIENT: Turnberry Limited
DEP coastal permitting and flood regulation compliance review for beach club project and dune restoration activities

Epic Miami Hotel and Residences, Miami, Florida
CLIENT: CMC Group
Design of permitting of an 800-foot steel sheet pile seawall replacement for waterfront development along with docks for 22 slips on the Miami River. Performed coastal engineering analysis for FEMA Certificate of Letter of Map Revision (CLOMR).

The Saxony Hotel and Condominium Development, Miami Beach, Florida
CLIENT: Patrinely Group, LLC
Florida Department of Environmental Protection coastal permitting of the Saxony Hotel and Condominium site development, within the Middle Beach Neighborhood, adjacent to the City's existing, historic boardwalk. Coastal Systems obtained coastal as well as civil permits for the site.

Ritz Carlton Gala Beach Club, Miami Beach, Florida
CLIENT: Ritz Carlton
Provided feasibility assessment and coastal/environmental permitting for a new multi-purpose space consisting of restaurant, bar, lounge, and event space for the hotel guests and patrons.

Doral Palms Development, Doral, Florida
CLIENT: Terra Group
Processed and obtained Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) based on fill for approximately 3 acres of residential development in the City of Doral.

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Samson Oceanfront Park, Sunny Isles Beach, Florida
CLIENT: City of Sunny Isles
Conducted negotiations with Florida Fish and Wildlife Conservation Commission (FWC) to approve exterior lighting of a 2.1 acre oceanfront public park.

Loews Miami Beach, Miami Beach, Florida
CLIENT: Loews MB
Provided feasibility assessment and coastal/environmental permitting for a restaurant/dining pavilion, and bar for the hotel guests and patrons.

Porsche Design Tower, Sunny Isles Beach, Florida
CLIENT: Dezer Properties
Development of a fifty-eight story condominium building on top of a garage pedestal with an on-grade pool deck area and dune restoration project. Provided coastal permitting and engineering services that included permits from the Florida Department of Environmental Protection (DEP) and marine turtle lighting review through the Florida Fish and Wildlife Conservation Commission (FWC).

OTHER REPRESENTATIVE PROJECT EXPERIENCE

South of Fifth, Miami Beach, Florida
Development of four condominium buildings on top of a garage pedestal with an on-grade pool deck area and dune restoration project. Provided coastal permitting and engineering services that included permits from the Florida Department of Environmental Protection (DEP) and marine turtle lighting review through the Florida Fish and Wildlife Conservation Commission (FWC). Also provided Florida Building Code, City Code (FBC), and Federal Emergency Management Agency (FEMA) flood compliance reviews.

Rockerman Canal Maintenance Dredging, Coconut Grove, FL
CLIENT: Rockerman Canal Homeowners Association
Involved in the preparation of a degraded canal for maintenance dredging. Permitted and managed project, including determining the quantity of dredge spoil to be removed, the exact dimensions of the dredged area, and the appropriate disposal location of the spoil.

Hurricane Cove Marina, Miami, FL
CLIENT: Balbino Investments, LLC.
Assisted in expediting the Florida Department of Environmental Protection (DEP) and Miami-Dade County Department of Environmental Resources Management (DERM) permit approvals for the Project. Also acquired the US Army Corps of Engineers authorization and obtained permits from the City of Miami building permit. Permit acquisition involved mitigation design work and negotiation given the presence of sensitive marine resources in the vicinity of the project site.

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The Marina at Vista del Canal Miami Beach, FL

CLIENT: Vista del Canal, LLP

The Marina at Vista del Canal in Miami Beach required careful permitting and design because of the sensitivity of the surrounding environment. Successfully negotiated and acquired permits for the Vista del Canal site, including, US Army Corps of Engineers (USCOE), Florida Department of Environmental Protection (FDEP), Miami Dade County DERM, and City of Miami Beach.

EDUCATION

Bachelor of Arts, Construction Management, Florida International University, Miami, Florida, 1988

Associate in Arts, Engineering, Miami Dade Community College, Miami, Florida, 1983

ORESTES BETANCOURT
Senior Civil Designer

Mr. Betancourt has over 20 years of experience in site/civil engineering and has completed projects for a variety of sites including hotels, condominiums, marinas, resorts, industrial/commercial areas, and parks. He regularly coordinates with project consultants including architects, engineers and mechanical/electrical/plumbing (MEP) to ensure consistent site/civil design with project requirements.

Mr. Betancourt provides design and construction administration services associated with site civil and utility projects undertaken by Coastal Systems. He has provided civil design, construction inspections, field surveys and planning layouts for numerous site/civil and permitting projects throughout South Florida and the Caribbean. Mr. Betancourt conducts inspections and interacts with contractors to ensure the project is completed according to design plans and specifications. Annually he prepares and processes approximately six to ten site plans for developments in South Florida. These plans include civil engineering designs for water distribution, sanitary sewer, paving, grading, irrigation and stormwater management facilities. His stormwater management design experience includes the use of best management practices as well as injection wells and exfiltration trenches.

REPRESENTATIVE PROJECT EXPERIENCE

10th Street Auditorium, Miami Beach, Florida
CLIENT: City of Miami Beach
Civil design and environmental permitting for the City of Miami Beach's 10th Street Auditorium and Beach Patrol Headquarters. The design included restoration of the two buildings to include new water and sewer service, as well as connections to the adjacent public restrooms.

1826 Collins Avenue Garage, Miami Beach, Florida
CLIENT: Crescent Heights
Site/civil engineering services for 139 space 4-story automated parking garage. Designed paving, grading and drainage as well as water and sewer services. Processed stormwater plans through Miami-Dade DERM and drainage well through Florida DEP. Processed Driveway Connection and Drainage permits through FDOT.

Bayfront Street Ends Improvements, Miami Beach, Florida
CLIENT: City of Miami Beach
Bulkhead design and environmental permitting for street ends at South Shore Drive, 10th Street, 14th Street, Lincoln Road as well as Island View Park. Streetscape design for street ends at South Shore Drive, 10th Street and Lincoln Road to improve upland access to the waterfront. Paving, grading, drainage lighting and landscape/hardscape improvements.

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Beachwalk, Miami Beach, Florida
CLIENT: City of Miami Beach
Civil/coastal engineering design and environmental permitting for the 4,000 foot on grade paver walkway that connects Lummus Park north to 21st Street in the South Beach district of Miami Beach, along with associated amenities and landscaping.

Capri South Beach, Miami Beach, Florida
CLIENT: Maefield Development
Paving, grading and drainage design for 3 residential complexes with a total 72 units and an underground parking garage next to Biscayne Bay, covering two city blocks. Design included water main extensions for each street, fire, sanitary services, street ends and storm drainage system improvement for the neighborhood with associated pump stations.

The Clevelander Hotel, Miami Beach, Florida
CLIENT: City of Miami Beach
Civil engineering design and environmental permitting for the renovations including a new drainage system, water and sewer services, and site grading to accommodate the existing adjacent public sidewalks.

Cocowalk Drainage Improvements, Miami, Florida
CLIENT: Cocowalk
Design of stormwater drainage improvements for lower level garage in Cocowalk. Drainage design included a new deepwater injection well with storm water handling appurtenances to redirect drainage to the new well installed in the City right-of-way.

Courts of South Beach, Miami Beach, Florida
CLIENT: Courts of South Beach
Paving, grading and stormwater management design for 400-Unit, multi-family development located in the historic South Beach District of Miami Beach. Designs also included water mains and sanitary sewer service.

Hadley Park, Miami, Florida
CLIENT: City of Miami
Civil engineering design including ground stabilization for fire truck access, stormwater drainage, water and sewer for a new park pavilion/amenity building within the City of Miami's Hadley Park.

Jose Marti Park, Miami Florida
CLIENT: City of Miami
Site/civil engineering for 1-acre project site development with a community gymnasium. Paving, grading and stormwater management designs were completed and water/sewer services were provided to the site. Street improvements were designed for South West 5th Street.

Little Haiti Cultural Center, Miami, Florida
CLIENT: City of Miami
Site/civil engineering for a 1.5 acre site development with a cultural center and theater. Paving, grading and stormwater management designs

ORESTES BETANCOURT

were completed and water/sewer services were provided to the site including a water main extension. Street improvements were designed along with three (3) parking lots totaling 180 spaces.

North Beach Recreational Corridor (NBRC), Miami Beach, Florida
CLIENT: City of Miami Beach
Site/Civil engineering services include paving and grading for 6,700 linear feet of multi-purpose public access corridor to traverse along the western edge of the beach dunes between 64th Street and 79th Street. Design includes dune enhancements, landscaping, electrical and water service for irrigation.

Ponce and Bird, Coral Gables, Florida
CLIENT: Ponce and Bird Miami Development, LLC
Provide environmental and civil permitting services for the development of an eight story apartment building containing approximately 272 units, together with an attached 8 story parking structure. Secured environmental permits through the Florida Department of Transportation, Department of Environmental Protection, Miami-Dade County and Department of Regulatory and Economic Resources.

Setai Development, Miami Beach, Florida
CLIENT: Setai Resort and Residences
Paving, grading, and drainage designs for a new residential condominium tower with 195 units as well as hotel renovations. Design included water, fire and sanitary services as well as a drop-off lane on Collins Avenue and 20th and 21st Street end improvements.

South of Fifth, Miami Beach, Florida
CLIENT: Brio Investment Group
Development of four condominium buildings on top of a garage pedestal with an on-grade pool deck area and dune restoration project. Provided coastal permitting and engineering services that included permits from the Florida Department of Environmental Protection (DEP) and marine turtle lighting review through the Florida Fish and Wildlife Conservation Commission (FWC). Also provided Florida Building Code, City Code (FBC), and Federal Emergency Management Agency (FEMA) flood compliance reviews.

South Pointe Park, Miami Beach, Florida
CLIENT: Hargreaves and Associates
Civil design and coastal/environmental permitting of a multi-purpose recreational park area for structural, hardscape, and landscape improvements in excess of 16 acres. Activities include the construction of a main park structure with offices/concession/restrooms, a storage facility for park vehicles, a raised serpentine walkway, and playground facilities.

EDUCATION

Master of Science, Biological Oceanography, University of South Florida, 2012

Bachelor of Science, Marine Science, Florida Gulf Coast University, Ft. Myers Florida, 2008

Agri-Science and Engineering Academy, Coral Reef Senior High School, Miami, Florida, 2004

LICENSURE

Coast Guard Captain's License (OUPV) with Towing Endorsement

CERTIFICATIONS

American Academy of Underwater Sciences (AAUS) Full-Certified Scientific Diver (over 500 logged scientific dives)

DAN (First Aid, CPR, AED & Oxygen), 2015

PADI Divemaster, 2014

PADI Rescue Diver, 2013

NAUI NITROX Diver, 2010

NAUI Advanced Scuba Diver, 2010

SSI Open Water Diver, 1999

PROFESSIONAL AFFILIATIONS

American Academy of Underwater Sciences (AAUS) Member and Scientific Diver

PADI Divemaster

DAN member

International Society for Reef Studies (ISRS)

FAEP, Florida Association of Environmental Professionals

MARK HARTMAN

Environmental/Permitting Project Manager/Marine Biologist

Mr. Hartman is a trained marine biologist, and AAUS Full-Certified Scientific Diver, with extensive experience evaluating and quantifying potential perturbations in nearshore coastal environments, such as seagrass beds, estuarine habitats, hardbottom communities, and coral reefs. With over ten years of professional research and consulting experience, Mr. Hartman has an extensive knowledge of coastal biology and coastal zone management in the United States and the Caribbean. Mr. Hartman regularly conducts seagrass, sponge, and coral resource surveys, comparative assessments, and long term monitoring, relative to Project environmental regulation compliance. He has experience in a wide range of coastal and environmental analyses, including wetland assessment and restoration, water quality assessments, and regularly uses the findings of his field inspections to effectively determine the feasible scope of work for Projects, including key elements required to obtain environmental and construction permits. His background provides a thorough understanding of estuarine and marine systems' assessments, identification of potential environmental impacts, sound scientific and statistical analyses, and preparation of scientific/technical reports. His regular project management responsibilities include marine and wetland resource assessments, gathering required field data, preparation of scientific/technical reports, and environmental permit processing. His responsibilities also include planning, coordination, and management of large scale coastal projects, including beach nourishments, marina developments, port and channel dredging, and other various marine development projects.

REPRESENTATIVE PROJECT EXPERIENCE

Hoodie Cay Development Project, Flamingo Cay, Bahamas

CLIENT: F9 Properties

Supported the placement of a network of survey control monuments across a 275 acre island to provide the framework for topographic surveying. Assisted in set up the Base Station Radio and RTK GPS, performed comprehensive topographic surveying as part of the initial technical investigation for the feasibility of developing a marina. Employed a survey grade echosounder and Trimble DGPS equipment to obtain accurate depths with sub-meter horizontal positioning accuracy. Collected sediment depth probes within the proposed marina areas to determine the thickness of sediment and general sediment characteristics. Assessed the biological resources present within the footprint of the proposed marinas and entrance channel. Noted the locations of the existing sea grass beds, hard-bottom habitat, reefs, as well as compile a list of observed species. Assisted in the preparation of the EIA and Environmental Management Plan for submission to the Bahamas Environmental Science and Technology Commission.

MARK HARTMAN

North Cat Cay Development Project, North Cat Cay, Bahamas
CLIENT: Cat Cay Yacht Club
Using a Total Station, assisted in the placement of a network of survey control monuments. Deployed tide gauges, surveyed their location and height, and employed an echosounder and Trimble DGPS to obtain accurate water depths of the marina, entrance channels, and nearshore areas surrounding the island. Conducted beach profile surveys throughout the island to overlap the data collected during the hydrographic survey.

PortMiami Mitigation Reef Monitoring, Miami-Dade County, Florida
CLIENT: PortMiami
Accurately located the proposed start and end points of the 48 permanent transects on the artificial reef using DGPS points and HYPACK. Established the locations of 48, 20-meter long permanent transects and ten, 1-meter square quadrats per transect by installing stakes to mark the start and end of each transect and color coded survey nails to mark the corners of the quadrats. Utilized the BEAMR data collection framework, monitored the marked quadrats to collect quantitative data of and take photographs of the stony coral, sponge, hydroid, octocoral, and algal species that recruited. Managed BEAMR data entry and comparisons, populated list of species observed, and co-authored the Field Observation Report summarizing the findings.

Miami Harbor Phase III Federal Channel Expansion, Miami-Dade County, Florida
CLIENT: PortMiami
Conducted *Acropora* colony monitoring as part of the PortMiami Federal Channel Expansion Project. Prepared reports documenting the measured health and overall dimensions of transplanted and reference *Acropora* colonies from pre-transplantation, throughout the dredging operations, and post-dredging to accurately assess any potential impacts on colony health from the effects of dredging. Performed statistical analysis of coral colonies using JMP, version 10, statistical software. Author of the required Field Observation Reports describing *Acropora* colony health, as measured by the indicators outlined in the Project permits, and created a reference time lapse of the photos of each *Acropora* colony at each sampling time.

Surf Club Sand Removal and Replacement, Surfside, Florida
CLIENT: Town of Surfside
Assisted in managing the replacement of sand along a one-mile stretch of the beach in Surfside to verify compliance with the requirements of the Project's Amended Consent Order and Mitigation Plan. During sand removal, visually surveyed the beach for any possible remaining fill material or man-made debris. Supervised the completion of replacement material placement trucked from the Ortona Mine and placement between the dune vegetation line and the MHWL. Assisted FDEP and local personnel with compliance inspections.

MARK HARTMAN

Bimini Affordable Housing Project, Bimini, Bahamas

CLIENT: Resorts World

Performed a marine resource assessment, utilizing nearly one hundred bounce dives, of nearly 800 acres of submerged lands located in Bimini, Bahamas. Used the data collected from these assessments to provide a general characterization of each proposed Project site by documenting the marine species present and their density. Identified whether any significant marine resources were present that may be negatively affected by the proposed Project. Conducted detailed mangrove and upland vegetation survey covering an area of approximately 92 acres across several sites to document whether any significant wetland resources were present within the proposed footprint of the Project. Prepared a Field Observation Report summarizing the findings of the upland area surveys and marine resource survey.

Village of Key Biscayne Beach Renourishment Project, Village of Key Biscayne, Miami-Dade County, Florida

CLIENT: Village of Key Biscayne

Conducted nearshore seagrass boundary mapping surveys adjacent to the renourished beach area, utilizing a Trimble AgGPS Differential Global Positioning System (DGPS). Conducted Braun Blanquet seagrass monitoring along twenty-seven, 35 meter long temporary transects, to evaluate any unanticipated project related impacts. Authored the yearly Field Observation Reports describing seagrass and macroalgal bed health, documenting changes in the extent of seagrass beds, and providing photos of the observed seagrass habitat in the Project footprint over time to the environmental regulatory agencies.

Miami Harbor Phase III Federal Channel Expansion, Miami-Dade County, Florida

CLIENT: CDM-Smith for PortMiami

Conducted the in-water assessment of twenty five, 200 m long, fixed transects in Fisherman's Channel, Dodge Island Cut, Lummus Island's and Dodge Island's Turning Basins, and two control sites. Noted the seagrass species present along each one meter section and recorded the precise density and evaluated the degree of sedimentation of seagrass species within quadrats at specified points. Entered quadrat data into Microsoft Excel for data management and analyzed with JMP, Version 10 statistical software. Precisely followed the pre-construction baseline seagrass monitoring methods consistent with the FDEP Permit requirements. Prepared an extensive report documenting and comparing both pre-construction seagrass conditions, which will be later utilized by the PortMiami, Corps, and FDEP to determine any possible seagrass impacts that may result from Project dredging and eventual equilibration. Statistically compared the pre-determined environmental indicators of potential damage to establish those which provided the highest correlation with seagrass prevalence and density changes.

MARK HARTMAN

Island Gardens Mega Yacht Harbor, Miami, Florida

CLIENT: Flagstone Island Gardens, LLC

Conducted the in-water assessment of all marine resources located within and around two large dredge holes. These dredge holes were permitted to be filled in by clean dredge spoil material as part of the dredging design and environmental mitigation for the 50-slip mega-yacht harbor. Utilized a Trimble AgGPS Differential Global Positioning System (DGPS) to accurately map the location and limits of existing sponges, soft corals, and seagrass to ensure no direct adverse impacts were suffered by the placement of fill. Evaluated the donor seagrass areas, noting seagrass species composition, density, and suitability for transplantation onto the clean dredge spoil after placement. Participated in the pre-construction *Acropora* spp. survey for the marina Project dredge area, as required by the National Marine Fisheries Service (NMFS), and documented all species of stony coral located within the footprint of the proposed marina. Co-authored and reviewed the updated Pre-construction Dredge hole, Seagrass Monitoring, and *Acropora* spp. Reports.

Dinner Key Mooring Field, Miami, Florida

CLIENT: City of Miami

Conducted a total of 54 parallel video transects, using towed video equipment coupled with a Trimble AgGPS Differential Global Positioning System (DGPS) to create a detailed map of the 225-slip managed mooring field. Reviewed transect videos to record the precise beginning and end of each area of seagrass beds. Compiled data on the percentage of the bottom with seagrass present, accurately mapped the coverage of seagrass beds, tracked changes in the percent of the bottom which contained seagrass, and authored the report inferring the possible effects of the presence of the mooring field.

Pier 66 Marina, Ft. Lauderdale, Florida

CLIENT: LXR Luxury Resorts

Conducted in-water biological assessments of the 127-slip marina facility bulkhead, shore-support structures, and associated fixed docks for significant biological resources such as sponges, hydroids, soft corals, and stony corals. Conducted a marine inspection of the bulkhead, finger piers, and walkways, noting the type and location of any structural defects in the structures. Prepared a Field Observation Report summarizing the findings of the marine resource survey for submittal to environmental agencies to secure permits for replacement of walkways and relocation of slips within the Project footprint.

EDUCATION

Master of Professional Science, Marine Affairs and Policy, University of Miami – Rosenstiel School of Marine and Atmospheric Science, Miami, Florida, 2016

Bachelor of Arts, Marine Affairs and Policy, University of Miami, Coral Gables, Florida, 2015

Bachelor of Arts, Ecosystem Science and Policy, University of Miami, Coral Gables, Florida, 2015

PROFESSIONAL AFFILIATIONS

The Propeller Club of the United States – Port Miami

Maritime Law Society

CERTIFICATIONS

PADI Open Water Diving Certified, 2017

First Aid and CPR

OFFICE LOCATION

Coral Gables, FL

TAYLOR SCHEUERMANN

Environmental/Permitting Project Manager

Ms. Scheuermann provides various environmental services to public and private clients in her role as Environmental/Permitting Project Manager. She specifically manages projects involving coastal and environmental permit applications, among other specialized regulatory requirements at the local, county, state, and federal levels. She has expertise working with various environmental agencies such as the Florida Department of Environmental Protection and U.S. Army Corps of Engineers, as well as all local municipalities in Miami-Dade, Broward, Palm Beach, and Duval counties. She has an in-depth understanding of the many regulations and procedures governing coastal/waterfront construction, and has established relationships with key regulatory agency personnel.

Ms. Scheuermann has an extensive knowledge of coastal biology and coastal zone management in the US. She has conducted mangrove and fish assemblage resource surveys, and she has experience in a wide range of coastal and environmental analyses. Her areas of focus include coastal and waterfront site development, specifically project feasibility, conceptual design, and permitting strategy. Her regular project management responsibilities include coordination with project teams and regulatory agencies, thorough historic and current research, and environmental permit processing.

BEFORE JOINING COASTAL SYSTEMS

Ms. Scheuermann worked as an Environmental Consultant with Environmental Solutions International, LLC for 11 months. During her time, she reviewed plans and surveys for FDEP compliance, in addition to assisting in permit application submittals for coastal construction projects throughout South Florida. She assisted in the research for current cases by means of obtaining and evaluating historic data, such as aerials, surveys, and plat maps. She attended client and agency meetings, in addition to attending governmental meetings with the Miami-Dade Board of County Commissioners and with the Miami-Dade County Shoreline Development Review Committee.

Ms. Scheuermann also worked as a research assistant in the Lirman Benthic Ecology Laboratory at the University of Miami's Rosenstiel School of Marine and Atmospheric Science. She conducted over 150 fish assemblage resource surveys within local waterways over the course of six months, during South Florida's wet season. This project included intensive field work, through the use of underwater visual surveys, and GIS classifications. She also deployed several artificial mangrove root structures as part of her research, to measure the mitigation potential of replacing mangrove shorelines with docks.

TAYLOR SCHUERMANN

REPRESENTATIVE PROJECT EXPERIENCE

Oceanside (Ruffy's) Marina, Hollywood, FL
CLIENT: Oceanside Marina, LLC
Coordinated the permit application process with Broward County for an Environmental Resource License. Also coordinated with Florida Power and Light for an Everglades Mitigation Bank credit purchase for the marina, on behalf of the Client.

Williams Island Marina, Aventura, FL
CLIENT: HSH Willisle Marina Company LLLP
Coordinated the submittal of the permit application package for the FDEP (Joint Environmental Resource Permit) and DERM (Class I Construction Permit). Reviewed project sketches for the marina and coordinated with engineers prior to application submittal.

Boca Chica Mooring Field, Key Largo, FL
CLIENT: Monroe County
Prepared a Mooring Feasibility Report for the client, which contained results from executed biological surveys and topographic surveys. It also contained recommendations for the creation of a mooring field in the vicinity of Boca Chica, with regards to the area's capabilities and the regulations governing the Florida Keys. Coordinated with the Florida Keys National Marine Sanctuary to obtain relevant historical documentation.

24 SW 4th Street Mooring Slip, Miami, FL
CLIENT: Miami River Project, LLC
Coordinated with engineering and design teams to produce Mooring Feasibility plans for the Client. The project included the submittal and processing of a SFWMD submerged lands ERP application, in addition to the acquirement of a FDEP Sovereign Submerged Lands lease for a mooring slip along a currently undeveloped upland property on the Miami River.

River Arts Buildings, Miami, FL
CLIENT: Tasal, LLC
Conducted Sovereign Submerged Lands (SSL) research, with regards to historical leases and historical uses of those submerged lands, for an upland property with three two-story buildings. Prepared a Feasibility Memo for use in all permitting considerations. Provided assistance in the project's conceptual mooring design and drawing stage.

728 Ocean Drive, Miami Beach, FL
CLIENT: IRE 728 Ocean Drive, LLC
Coordinated and provided assistance to the project's architect, with regards to sea turtle lighting (including external, emergency, and signage features), for the two-story commercial building. Coordinated with the City of Miami Beach to ensure that all local zoning and setback requirements were met for the Coastal Construction Control Line (CCCL) application. Attended the pre-construction meeting with the client, the contractor, and the DEP staff representative for the project.

TAYLOR SCHUERMANN

Lamb's Yacht Center, Jacksonville, FL
CLIENT: Lamb's Yacht Center, Inc.
Provided consulting services for a multi-slip service and storage marina on the Ortega River. Acquired Exemption Verification and Nationwide permits from the FDEP and ACOE, respectively.

Elysee Bulkhead and Viewing Platform, Miami, FL
CLIENT: 700 Miami Partners, LLC
Provided assistance throughout the various phases of this project for a condominium property in a pre-construction phase. Coordinated with the FDEP to obtain a property title determination for the project's SSL, in addition to obtaining an Exemption Verification permit for the bulkhead replacement phase. Coordinated the completion of bond documents from the client in order to obtain a Class I Construction permit from DERM.

Bo's Beach House, Fort Lauderdale, FL
CLIENT: LM Development Group, Inc.
Provided assistance in preparing the permit applications for submittal to the FDEP for a Coastal Construction Control Line permit, on behalf of the coastal restaurant. Coordinated with the project's engineers and architects to provide accurate plans for the submittal.

Fisher Island Visitor's Marina, Miami, FL
CLIENT: Bellingham-Marine
Prepared an in-depth Resiliency Report for the client, which was used to accurately choose the appropriate replacement dock specifications for the marina. Coordinated with the FDEP and DERM to obtain a Permit Modification and a Class I Construction permit, respectively. Coordinated with the FDEP and the client to perform a SSL determination and to reapply for an expiring lease.

Casey Residence, Jacksonville, FL
CLIENT: Donald and Ann Casey
Prepared and submitted the CCCL permit application for the two-story residential project. Coordinated with the architect and the City of Jacksonville Beach to submit a Request for Additional Information response to the FDEP, with regards to the CCCL permit application.

Sorensen Residence, Jacksonville FL
CLIENT: 3321 Ocean Drive South, LLC
Prepared and submitted the Coastal Construction Control Line (CCCL) permit application to the FDEP, on behalf of the client. Coordinated with the project team on a weekly basis to produce documents for the FDEP CCCL permit application submittal and RAI response. Also coordinated with the City of Jacksonville Beach to ensure that all local zoning and setback requirements were met for the CCCL application.

EDUCATION

Master of Science, Civil Engineering, University of Miami, Coral Gables, Florida, 2014

Bachelor of Science, Civil Engineering, University of Miami, Coral Gables, Florida,

2013

LICENSURE

Engineer in Training, FL

CERTIFICATIONS

Open Water/Nitrox Scuba

VANESSA BENZECRY, E.I.
Marine Structural Engineer

Ms. Benzecry has over three years of experience in the civil and structural engineering fields. She has experience in both construction management and engineering design. Prior to joining Coastal Systems, Ms. Benzecry was a civil engineering intern for a construction company specializing in technical and commercial innovation with optimized risk management and sustainable construction.

As a structural engineer at Coastal Systems, Ms. Benzecry is responsible for feasibility studies, engineering calculations and design, preparation of construction plans and specifications, field investigations and construction administration on a variety of projects that include marinas, shoreline stabilization and marine and civil structures.

REPRESENTATIVE PROJECT EXPERIENCE

3550 South Ocean Boulevard, Town of South Palm Beach, Florida
CLIENT: Blue Ridge Development, LLC
Design of bulkhead to replace existing seawall in order to allow for upland improvements.

Aqualina, Village of North Palm Beach, Florida
CLIENT: PGA Partners 100, LLC
Design of bulkhead to replace existing seawall to allow for upland development.

Biscayne Bay Yacht Club, Coconut Grove, Florida
CLIENT: Biscayne Bay Yacht Club
Assisted with underwater inspection to analyze condition of pile caps of the existing concrete docks. Developed 100% pile cap repair plans.

Clifton Pier, Nassau, Bahamas
CLIENT: Ministry of Environment and Housing
Designed sheet pile and reinforced concrete retaining wall for oil containment. As well as reinforced concrete walls and slabs for secondary basin.

Coconut Grove Sailing Club, Coconut Grove, Florida
CLIENT: Coconut Grove Sailing Club
Performed field inspections and shop drawing review for the 175-single-point mooring system.

Elysee Condominum, Miami, Florida
CLIENT: Two Roads Development, Inc.
Assisted with underwater investigation of bulkhead and dock to determine current condition of structures.

VANESSA BENZECRY, E.I.

Haulover Marine Center, North Miami, Florida
CLIENT: Westrec Marinas
Redesigned sheet pile bulkhead with augercast pile-supported reinforced concrete forklift launching platform.

Island Gardens, Miami, Florida
CLIENT: Flagstone Property Group
Planning and design of a 50-slip mega yacht marina in Biscayne Bay. Design of upland excavation and basin dredging, including material handling and disposal design. Design of bulkhead improvements and associated shore-support structures, along with a portion of fixed docks. Designed med-moor system for up to 180' yachts and dolphin structures for 300' yacht.

Mashta Flats, Key Biscayne, Florida
CLIENT: Village of Key Biscayne
Responsible for preparing invitation of quotation and coordination of bid process for the no vessel zone.

Marina Palms, North Miami Beach, Florida
CLIENT: The Plaza Group
Construction administration for full time dock master and 112 slips to accommodate boats up to 90 feet.

Miracle Mile and Giralda Ave. Streetscape, Coral Gables, Florida
CLIENT: City of Coral Gables
Design of foundation for new valet structure for this street improvements project.

Ritz Carlton Residences Sunny Isles Beach, Sunny Isles, Florida
CLIENT: Sunny Isles Property Venture, LLC.
Performed overwater seawall investigation to determine if removal of seawall would cause any impacts to adjacent properties.

Riva Condominium, Ft. Lauderdale, Florida
CLIENT: Premier Riva, LLC
Designed sheet pile bulkhead to replace existing seawall for a 15-story river front tower. Also currently responsible for construction administration.

Villa Valencia, Fisher Island, Florida
CLIENT: Coastal Construction Group
Analyzed existing bulkhead for the proposed new dredge elevation and designed mooring dolphin structure for a 300' private yacht.

PROJECT EXPERIENCE WITH FORMER FIRM

Brickell City Centre, Miami, Florida
Site inspections, concrete take-off for the north block-condo tower and writing approval letters and bid tabs for the $1.05 billion mixed-use development in the heart of Miami's financial district. The project consists

VANESSA BENZECRY, E.I.

of an office building, residential towers, hotel and shopping center.

Port of Miami Tunnel Project, Miami, Florida

Plan reviews and site visits to revise as-built drawings, prepare shop drawings and deviation reports, and civil design project coordination between owner, concessionaire and subcontractors of the Port of Miami Tunnel. The project consists of a 4,200 feet bored, undersea tunnel that connects MacArthur Causeway on Watson Island with PortMiami on Dodge Island.

Granja Comary Football Complex, Rio de Janeiro, Brazil

Draw AutoCAD plans and assist in the redesign of foundation and building structure for the renovation of Granja Comary football complex for the 2014 World cup.

EDUCATION

Civil Engineering Technology Degree, North Dakota State College of Science, Wahpeton, North Dakota, 1998

Construction Management Technology Degree (1 year), North Dakota State College of Science, 1998

LICENSURE

Coast Guard Captain's License

CERTIFICATIONS

Haz Mat Certification

Nuclear Gauge Safety Training

AARON BOEHNING

Surveyor

Mr. Boehning has extensive experience collecting field data in the coastal/marine environment. He has planned and conducted beach profile surveys throughout the State of Florida for a variety of purposes including contract payment, monitoring, and post-hurricane assessments. These surveys have also required topographic and geodetic control surveys for the land-based work. Mr. Boehning has performed hydrographic surveys with advanced equipment including the following:

- GPS Receivers (DGPS and RTK)
- Magnetometers
- Echo Sounders (fathometers)
- Heave/Pitch/Roll Sensors
- Electronic Tide Gauges
- Conventional Total Station and Levels
- Towed Underwater Video

REPRESENTATIVE PROJECT EXPERIENCE

Bahia Mar Yachting Center, Ft. Lauderdale, Florida
CLIENT: Boca Resorts
Design of bulkhead replacement and maintenance dredging for 250-slip marina project. Provided consulting services for contaminated dredge material disposal, and performed hydrographic surveys for before/after dredging operations.

Dinner Key Marina Maintenance Dredging, Miami, Florida
CLIENT: City of Miami
Hydrographic and marine resource surveys to design and permit maintenance dredging in 580-slip marina. Design of dredging and material disposal for 6,000 cubic yards of material with elevated levels of contaminants. Performed pre/post hydrographic contract payment surveys.

Dinner Key Managed Mooring Field, Miami, Florida
CLIENT: City of Miami
Design and environmental permitting of a 225 slip managed mooring field. Conducted hydrographic surveys, jet probes and marine resource surveys. Prepared construction plans and specifications and provided construction administration services including underwater inspections.

Fort Lauderdale Grande, Fort Lauderdale, Florida
CLIENT: BoatClubs America, LLC
Redevelopment of existing 10 acre marina site to include two day storage buildings for 300 dry slips and docks for 18 wet slips for vessels up to 120 feet, as well as a boatyard facility, design piers and forklift launching areas. Civil Engineering provided for paving, grading, drainage water and sewer for the site.

AARON BOEHNING

Fort Zachary Taylor State Park, Key West, Florida
CLIENT: DEP State Parks
Coastal engineering design and environmental permitting for breakwaters, jetties and beach fill project for shoreline protection at park. Performed beach profile surveys.

Hallandale Beach Truck Haul Beach Nourishment, Broward County, Florida
CLIENT: Town of Hillsboro Beach
Design and environmental permitting of 100,000 cubic yard truck haul beach nourishment as interim beach management project within Broward County Segment III beach area.

Hillsboro Inlet Bypassing, Broward County, Florida
CLIENT: Hillsboro Inlet District
Environmental permitting for ongoing maintenance dredging and sand bypassing by the Hillsboro Inlet Maintenance and Improvement District. Evaluated marine resources including nearshore hardbottom in the exterior sand trap channel area and seagrass in the interior inlet area adjacent to the navigation channel. Processed permits and monitoring conditions through the U.S. Army Corps of Engineers, Florida Department of Environmental Protection, and Broward County Environmental Protection and Growth Management Department. Assisted the District with DEP cost-sharing of the acquisition of the new hydraulic cutterhead dredge.

Hillsboro Inlet District Artificial Reef, Broward County, Florida
CLIENT: Hillsboro Inlet District
Design, permitting and construction administration for artificial reef mitigation project in association with the Hillsboro Inlet modifications. Conducted post-construction hydrographic and underwater survey of reef, and performed annual biological monitoring.

Hilton Ft. Lauderdale, Ft. Lauderdale, Florida
CLIENT: LXR Luxury Marinas
Conducted a marine resource assessment as required by the U.S. Army Corps of Engineers (Corps), the Florida Department of Environmental Protection (DEP), and Miami-Dade County Division of Environmental Resource Management (DERM) in order to secure a permit for the proposed Project. Hydrographic survey was conducted along the 700 linear feet of bulkhead to evaluate the need for maintenance dredging. The survey was conducted with an automated hydrographic survey system operated from Coastal Systems' custom aluminum 25-foot survey vessel.

Hollywood Beach Management Strategic Plan, City of Hollywood, Florida
CLIENT: City of Hollywood/Hollywood Beach CRA
Strategic beach management planning services provided to the City of Hollywood and Hollywood Beach CRA for immediate erosional hot spot management and potential longer term solutions for beach stabilization. Performed sand sampling and nearshore hardbottom surveys.

AARON BOEHNING

Hollywood Beach Renourishment, Broward County, Florida
CLIENT: City of Hollywood
Strategic beach management services are being provided to the City of Hollywood, Community Redevelopment Agency. Two segments of interim beach renourishment have been designed to avoid the potential for cumulative impacts with periodic renourishment provisions. Environmental permitting is nearly complete and baseline ecological monitoring is currently being conducted to ensure no adverse impacts to submerged aquatic resources. Application for state funding of the project is also being administered.

Jensen Beach Managed Mooring Field, Martin County, Florida
CLIENT: Martin County
Design and environmental permitting of 70-slip managed mooring field. Prepared feasibility study to evaluate waterfront opportunities for wet slips and managed mooring field configurations. Conducted hydrographic and marine resource surveys, and funding grant administration.

PortMiami Channel Deepening (Seagrass), Miami-Dade County, Florida
CLIENT: PortMiami
Managed field implementation and reporting for baseline seagrass monitoring event documenting pre-construction conditions. Baseline survey to determine whether actual seagrass impacts were consistent with predicted impacts relative to mitigation obligations. Under contract to conduct one year post construction biological and bathymetric surveys and associated reporting.

Rickenbacker Causeway Recreation Area, Miami-Dade County, Florida
CLIENT: Miami Dade County Public Works
Design of shoreline stabilization and associated public recreation area improvements along 2.5-miles of shoreline of the Rickenbacker Causeway across Biscayne Bay. Marine resource and hydrographic surveys completed, and coastal engineering analysis conducted to assess design wave conditions, sediment transport and optimum shoreline stabilization methods. Design elements included landscaping, invasive species removal with native species restoration, parking improvements, stormwater management and vendor kiosks for waterfront activities.

Town of Palm Beach Reach 8 Beach Nourishment, Palm Beach, Palm Beach County, Florida
CLIENT: Town of Palm Beach
Prepared feasibility study to evaluate an interim truck haul beach nourishment project for the Reach 8 area. Evaluated beach management, environmental permitting and funding options. Performed nearshore hardbottom surveys.

AARON BOEHNING

Village of Key Biscayne Beach Management, Florida

CLIENT: Village of Key Biscayne

Coastal engineering and environmental permitting for 75,000 cubic yard beach fill project. Marine resource and hydrographic surveys conducted, along with sand source search, jet probes, vibracores, and marine archeological surveys.

EDUCATION

I.D.P.M. Diploma, School of Business & Computer Science, Trinidad & Tobago, 1993

GIS, University of the West Indies, 1991

SANDRA RAHMAN
GIS Analyst

Ms. Rahman is responsible for processing all field data collected by Coastal Systems for use in analysis, monitoring, and design. She regularly utilizes Digital Terrain Modeling (DTM) software to generate contour maps and calculate cut/fill volumes for a variety of coastal and dredging projects. She is also responsible for providing deliverables in GIS formats, as well as providing full GIS capabilities for the firm with ESRI software.

Before Coastal Systems, Ms. Rahman worked for the Petroleum Company of Trinidad and Tobago. She was responsible for computer-aided drafting and design using Auto CAD. In addition, she was responsible for scanning, vectorizing, and digitizing, GPS post-processing, cadastral and topographic maps, geological drawings, royalty and volume computations using terrain-modeling software, and managing the database for thousands of drawings as well as control point records.

REPRESENTATIVE PROJECT EXPERIENCE

Boca Inlet, Broward County, Florida
CLIENT: Town of Hillsboro Beach
Analyzed 20 years of data to evaluate performance of the inlet and adjacent beaches with respect to sediment transport within the region. Utilized spatial analysis and GIS to recreate historical sediment budget to account for ebb shoal and maintenance dredging.

Broward County Artificial Reef Project, Florida
CLIENT: Broward County
Design/build construction of 10 acres of artificial reef offshore of Dania and Hollywood Beaches utilizing 66,000 tons of limerock boulder. Marine positioning, resource surveys and hydrographic surveys provided. Mooring design and coastal engineering analysis performed.

Cap Cana Marine Works, Punta Cana, Dominican Republic
CLIENT: Sinercon Constructors
Coastal engineering design for the dredging of 1.25-mile canal to create basin for 1,000+ slip marina. Design of shoreline stabilization, beaches, entrance channel jetties, numerical modeling of coastal processes and hydrographic surveying.

Cape Eleuthera Marina, Eleuthera, Bahamas
CLIENT: DP Fox Holdings
Hydrographic surveys, coastal structure evaluations, feasibility studies and design of docks and sheet pile seawall for 60-slip marina basin.

DEP State Parks Shoreline Stabilization Studies, Monroe County, Florida
CLIENT: DEP State Parks
Shoreline condition studies at Curry Hammock, Long Key, Bahia Honda, and Fort Zachary Taylor State Parks. Feasibility for shoreline improvements and GIS work completed along with hydrographic surveys and aerial

SANDRA RAHMAN

photogrammetric mapping.

Dinner Key Managed Mooring Field, Miami, Florida
CLIENT: City of Miami
Design and environmental permitting of a 225 slip managed mooring field. Conducted hydrographic surveys, jet probes and marine resource surveys. Prepared construction plans and specifications and provided construction administration services including underwater inspections.

Fort Lauderdale Boat Club, Fort Lauderdale, Florida
CLIENT: BoatClubs America, LLC
Redevelopment of existing 10 acre marina site to include two day storage buildings for 300 dry slips and docks for 18 wet slips for vessels up to 120 feet, as well as a boatyard facility, design piers and forklift launching areas. Civil Engineering provided for paving, grading, drainage water and sewer for the site.

Fort Zachary Taylor State Park, Key West, Florida
CLIENT: DEP State Parks
Coastal engineering design and environmental permitting for breakwaters, jetties and beach fill project for shoreline protection at park. Performed beach profile surveys.

Harbour Isle Marina, Ft. Pierce, Florida
CLIENT: Harbour Isle Development
Environmental permitting, hydrographic surveying, and marine resource permitting for 63 slip marina basin with flushing culvert. Sea grass and wetland impact mitigation planning and design, and onsite creation of 3 acres of saltwater marsh.

Hillsboro/Deerfield Beach Restoration, Broward County, Florida
CLIENT: Town of Hillsboro Beach
Coastal engineering and environmental permitting for 375,000 cubic yard beach fill project. Performed all beach profiles, hydrographic surveys, aerial photography, magnetometer surveys and monitoring.

Hillsboro Inlet District Artificial Reef, Broward County, Florida
CLIENT: Hillsboro Inlet District
Design, permitting and construction administration for 1.6 acre artificial reef mitigation project in association with the Hillsboro Inlet modifications. Monitoring of constructed reef for colonization and stability to ensure providing appropriate compensatory mitigation.

Hillsboro Inlet Channel Improvements, Broward County Florida
CLIENT: Hillsboro Inlet District
Coastal engineering and environmental permitting for 165,000 cubic yard inlet-dredging project to improve coastal sediment sand bypassing and navigation. Hydrographic and marine resource surveys conducted.

SANDRA RAHMAN

Hollywood Beach Management Strategic Plan, Hollywood, Florida
CLIENT: City of Hollywood/Hollywood Beach CRA
Strategic beach management planning services provided to the City of Hollywood and Hollywood Beach CRA for immediate erosional hot spot management and potential longer term solutions for beach stabilization.

Indian River County Beach Renourishment, Florida
CLIENT: Great Lakes Dredge and Dock Company
Hydrographic and marine resource surveys for offshore dredge pipeline corridors and borrow area at Ambersand.

Miami-Dade County Morphological Change Study, Miami-Dade County, Florida
CLIENT: Miami-Dade County
Study of volumetric and morphological changes between Bakers Haulover Inlet and Government Cut with detailed analysis on the performance of the 32nd Street Breakwater Project. Establishment of regional GIS database for beach management and update of regional sediment budget with survey data between 1980 and 2004. Prepared recommendations for further hot-spot stabilization and backpassing beach management County-wide.

Peanut Island Environmental Restoration, Palm Beach County, Florida
CLIENT: Palm Beach County
Coastal/civil and marine structures design for 1.5-acre artificial reef habitat and 1.3-acre shallow seagrass lagoon. Additional features include a tidal pond and flushing channel, shallow-draft marina with floating docks, pedestrian boardwalks and site utility upgrades.

Pier 66 Marina, Ft. Lauderdale, Florida
CLIENT: Luxury Resorts
Planning and design of 60-slip mega-yacht marina facility. Design of upland excavation and basin dredging, including material handling and disposal design. Design of bulkhead improvements and associated shore-support structures, along with a portion of fixed docks.

Port of Miami Mitigation Assessment, Miami-Dade County, Florida
CLIENT: Port Authority
Environmental design and UMAM assessment of a 1.65 acre artificial reef to offset impacts associated with replacement of an existing bulkhead at the Port of Miami.

Rickenbacker Causeway Recreation Area, Miami-Dade County, Florida
CLIENT: Miami Dade County Public Works
Design of shoreline stabilization and associated public recreation area improvements along 2.5 miles of shoreline of the Rickenbacker Causeway across Biscayne Bay. Marine resource and hydrographic surveys completed, and coastal engineering analysis conducted to assess design wave conditions, sediment transport and optimum shoreline stabilization methods. Design elements included landscaping, invasive species removal with native species restoration, parking improvements, stormwater management and vendor kiosks for waterfront activities.

SANDRA RAHMAN

Rybovich Boatyard, West Palm Beach, Florida
CLIENT: Rybovich Marina
Design of dredging and bulkhead for 150-slip marina redevelopment to accommodate vessels up to 250 feet long. Design of 100,000 cubic yards of dredging and 3,000 feet of bulkhead along with travel lift piers to accommodate 660-ton lift. Performed hydrographic surveys of marine for dredging design and surveyed dredge hole fill areas for mitigation construction.

Sand Key Beach Nourishment Monitoring, Pinellas County, Florida
CLIENT: U.S. Army Corps of Engineers
Coastal engineering analysis of first and second year project performance for 13.9 mile shoreline. Changes in shoreline position and fill volume provided a qualitative assessment of the project performance. Comparison of erosion rates, longshore/cross-shore sand movement and the influence of nearshore structures, bathymetry, and inlets on the project performance were studied.

Sunrise Harbor Marina, Ft. Lauderdale, Florida
CLIENT: Craven Thompson
Hydrographic survey of 22-slip floating concrete dock marina to evaluate the need for maintenance dredging. Contours were generated from digital terrain modeling software, and maintenance dredging areas identified.

Town of Palm Beach South End Restoration, Palm Beach County, Florida
CLIENT: Town of Palm Beach
Feasibility study, Equilibrium Toe of Fill Assessment, Mitigation Design, and modeling to support application processing for proposed beach nourishment project for the south end of the Town. Engineering assessment to evaluate sediment coming into project area from updrift beach renourishment and corresponding adjustment to project construction template. Further adjustments to template to accommodate requests from NGOs to secure support for project. Evaluated beach management, environmental permitting and funding options and processing environmental permits to authorize beach project.

Village of Key Biscayne Beach Management, Florida
CLIENT: Village of Key Biscayne
Coastal engineering and environmental permitting for 120,000 cubic yard beach fill project. Marine resource and hydrographic surveys conducted, along with sand source search, jet probes, vibracores, and marine archeological surveys.

Corporate Office: 464 South Dixie Highway • Coral Gables, Florida 33146 • Tel: 305-661-3655 • Fax: 305-661-1914
Regional Office: 801 Northpoint Parkway, Suite 151• West Palm Beach, Florida 33407 • Tel: 561-640-1003 • Fax: 561-640-1009
Regional Office: 310 College Ave., Suite 211 • Tallahassee, Florida 32301 • Tel: 850-765-4520 • Fax: 850-999-8349
www.coastalsystemsint.com• info@coastalsystemsint.com

EDUCATION

Associate in Administration Pre-Engineering, Baltimore City College, Baltimore, Maryland, 1994

Architectural and Electrical Mechanical Computer Aided Design, RETS, Baltimore Maryland, 1996

SERGIO VILLATORO
CADD Designer

Mr. Villatoro has almost 20 years of experience in CADD design for civil and marine structures engineering. He has extensive experience completing civil works design within the CADD environment utilizing the latest versions of AutoCAD. He has training and experience with the use of AutoCAD Civil 3D to prepare roadway and drainage plans, plan/profiles, and to calculate earthworks (cut/fill) for civil and marine projects. He regularly coordinates with other consultants on project teams including mechanical, electrical, landscape/architectural engineers to prepare and compile comprehensive construction documents. He has been responsible for the CADD design and management of CAD files and drawings for multi-million dollar civil works projects both locally and internationally.

Mr. Villatoro also regularly provides construction administration services to support ongoing construction projects. These services include site inspections, requests for information (RFI's), and processing of shop drawing submittals. He interacts with project surveyors to prepare as-built plans. He has utilized web-based construction management tools including the Autodesk Buzzsaw system for construction documents control.

Mr. Villatoro has extensive experience conducing field investigations for civil and waterfront projects. These services have included hydrographic and topographic surveys, marine resource surveys, and providing diving support for geotechnical, scientific, and waterfront investigations.

REPRESENTATIVE PROJECT EXPERIENCE

Bayfront Street Ends Improvements, Miami Beach, Florida
CLIENT: City of Miami Beach
Bulkhead design and environmental permitting for street ends at South Shore Drive, 10th Street, 14th Street, Lincoln Road as well as Island View Park. Streetscape design for street ends at South Shore Drive, 10th Street and Lincoln Road.

Bimini Bay Ferry Terminal, The Bahamas
CLIENT: RAV Bahamas Limited
Provided planning, coastal/marine/structural engineering, for the ferry terminal to provide fast ferry service for the 670-feet long Bimini Superfast vessel with 1,500-passenger capacity.

SERGIO VILLATORO

Bluepoints Marina, Cape Canaveral, Florida
CLIENT: Bluepoints Marina
Planned and designed the redevelopment of the Bluepoint Fisheries waterfront industrial area in Port Canaveral, Florida. The redevelopment consists of a new marina facility along approximately 1,200 feet of waterfront with a combination of wet and dry slips.

Dinner Key Managed Mooring Field, Miami, Florida
CLIENT: City of Miami
Design of a 225 slip managed mooring field. Prepared construction plans and specifications

Haulover Marine Center, North Miami Beach, Florida
CLIENT: Westrec Marinas
Design for marine and site/civil improvements for the redevelopment of a new marina facility with approximately 400 feet of bulkhead. Provided water and sanitary sewer design, utility coordination. Re-designed sheet pile bulkhead with augercast pile-supported reinforced concrete forklift launching platform.

Island Gardens Mega-Yacht Harbor, Miami, Florida
CLIENT: Flagstone Property Group
Designed 50- slip mega-yacht harbor at the proposed Flagstone Island Gardens development on Watson Island in the City of Miami. This waterfront project is being developed as a public-private partnership between the City of Miami and Flagstone Properties, LLC.

Jensen Beach Managed Mooring Field, Martin County, Florida
CLIENT: Martin County
Design of 70-slip managed mooring field. Prepared feasibility study to evaluate waterfront opportunities for wet slips and managed mooring field configurations.

Jose Marti Park, Miami Florida
CLIENT: City of Miami
Site/civil engineering for 1-acre project site development with a community gymnasium. Paving, grading and stormwater management designs were completed and water/sewer services were provided to the site. Street improvements were designed for SW 5th Street.

Latitude Development, Miami, Florida
CLIENT: Miami Riverfront Partners, LLC
Civil engineering and marine structures design for a multi-tower condominium development on the Miami River. Hydrographic, marine resource surveys and tidal hydraulic numerical modeling were conducted.

SERGIO VILLATORO

Marina Palms, North Miami Beach, Florida
CLIENT: The Plaza Group
Marine structural design of 112 slips to accommodate boats up to 90 feet.

Museum Park, Miami, Florida
CLIENT: City of Miami
Design of marine amenities to study completion relative to a proposed baywalk, waterfront enhancement, and other public park amenities along the shoreline and within a basin on Biscayne Bay as part of the proposed $50M Museum Park improvements project. Design and permitting of stormwater management for the 22-acre master planned park, and planning/design of large vessel mooring facility.

North Beach Recreational Corridor (NBRC), Miami Beach, Florida
CLIENT: City of Miami Beach
Design and of multi-purpose public access corridor to traverse along the western edge of the beach dunes between 64th Street and 79th Street. Design encompasses 15 blocks and three city parks.

Pier 66 Marina, Ft. Lauderdale, Florida
CLIENT: LXR Luxury Resorts
Design of 100-slip mega-yacht marina facility. Design of upland excavation and basin dredging, including material handling and disposal design. Design of bulkhead improvements and associated shore-support structures, along with a portion of fixed docks.

Sarasota Mooring Field, Florida
CLIENT: City of Sarasota
The design-build project involving design of a "stake" pile foundation system for phases 1 and 2 of the managed mooring field.

Setai Development, Miami Beach, Florida
CLIENT: Setai Resort and Residences
Civil engineering for site development at Setai Resort in South Beach. Utilities design for potable water, fire protection and sanitary sewer.

South Pointe Park, Miami Beach, Florida
CLIENT: Hargreaves and Associates
Civil engineering and coastal/environmental permitting for the design of park improvements at the 16-acre oceanfront park.

Stormwater Treatment Distribution Area (STDA), Miami-Dade County, Florida
CLIENT: Miami-Dade County DERM
Civil engineering design for an 88-acre basin pump stormwater runoff for treatment from the Homestead Military base utilizing natural wetlands. Design included the pumping station consisting of twin 18,000 GPM pumps, dikes and outfall structures with telemetry for remote control of facility and performance monitoring.

EDUCATION

Associate of Science, Construction Technology and Construction Management, Miami Dade College, Miami, Florida, 2000

Bachelor of Science, Construction Management, Florida International University, Miami, Florida, 2008 Accepted - Present

Bachelor of Administration, Project Management, Devry University, Miramar, Florida, 2009-Present

LESTER SANCHEZ
Engineering Technician

Mr. Sanchez has over 12 years of extensive experience in the fields of architecture, structural engineering, civil engineering, construction technology, marine engineering and CADD design. As a great asset to the Coastal Systems team, he coordinates with other trades and consultants in the civil, structural, marine, mechanical, electrical, and architectural fields in the preparation of comprehensive construction documents. He has been responsible for the project's support, CAD design and drawing administration for multi-million dollar private and government projects in South Florida.

Additionally, Mr. Sanchez provides construction administration for ongoing projects. These services include site inspections, coordination with clients, responses to Requests for Information (RFI's), evaluation of shop drawing submittals, and Resident Project Representative (RPR). He interacts with clients, contractors, project lead managers/engineers in order to make a project into a success.

REPRESENTATIVE PROJECT EXPERIENCE

Biscayne Beach Club, Miami, Florida
CLIENT: Biscayne Miami Partners, LLC
Evaluate the existing seawall relative to condition and storm protective capacity. Worked with the design team to evaluate the replacement of existing overwater piers. Provided coastal engineering and regulatory consulting services Performed structural field inspection and construction administration.

Chateau Ocean Sand Relocation, Miami Beach, Florida
CLIENT: Chateau Beach LLC
Performed field inspection, and monitored debris removal operations from sand placement as part of an on-going remediation, required by the Florida Department of Environmental Protection Coastal Construction Control Line Permit.

Currie Park Pier, West Palm Beach, Florida
CLIENT: City of West Palm Beach
Performed evaluation of the structural repairs of the existing Currie Park Piers. Delegated with punch list items to close out project with Contractor and the City of West Palm Beach Building Official.

Dinner Key Spoil 'C' Island, Miami, Florida
CLIENT: City of Miami
Assisted in the project field inspection for the floating dock repairs and the project dredging scope for the existing dock in Spoil Island C.

LESTER SANCHEZ

Island Gardens Megayacht Harbor, Miami Beach, Florida
CLIENT: Flagstone Properties, LLC.
Monitored, assessed turbidity control, and dredging operations for the marina design and permitting of a 50-slip megayacht harbor. Performed structural field inspection and construction administration. Delegated and expedited permit application coordination and compliance with the municipal county authorities for the construction of bulkhead, floating docks, and coral reef construction. Supported in the CAD structural design process.

Marina Palms, Aventura, Florida
CLIENT: The Plaza Group
Reviewed structural shop drawings, utility shop drawing, floating dock shop drawing submittals, field inspections and construction administration of a marina with two fixed docks at the north and south ends and a center floating dock.

Marine Stadium Bulkhead, Miami, Florida
CLIENT: City of Miami
Marine works design for 450 linear feet of bulkhead replacement at 300-slip dry stack marina. Designed sheet pile bulkhead with pile-supported reinforced concrete forklift launching platform with a total of 16 launch slips. Reviewed structural shop drawings, assisted to the structural field inspection and construction administration.

Miracle Mile/Giralda Streetscape, Coral Gables, Florida
CLIENT: City of Coral Gables
Assisted in the CAD civil engineering design: profiles, street cut sections, for the existing / proposed traffic marking and signage plans for the redesign and construction of the Miracle Mile section of Coral Way (between Douglas Road and LeJeune Road) and a section of Giralda.

Pier 66 Redevelopment, Ft Lauderdale Florida
CLIENT: LXR Luxury Marinas
Planning and design of 60-slip mega-yacht marina facility. Design of upland excavation and basin dredging, including material handling and disposal design. Design of bulkhead improvements and associated shore-support structures, along with a portion of fixed docks. Performed structural RPR services, civil field inspection and construction administration. Supported in the CAD structural design process. Delegated with punch list items to close out project with all parties involved.

Postcard Inn, Islamorada, Florida
CLIENT: CRP Holiday Isle LLC
Verified existing structural elements and coordinated survey operations as part of the reconstruction of the bulkhead, docks and platforms at the existing marina facility.

LESTER SANCHEZ

The Standard Hotel, Miami Beach Florida
CLIENT: The Standard Hotel
Performed structural RPR field inspection, construction administration and project coordination for overwater deck replacement. Reviewed structural shop drawings for custom structural elements.

Westrec Haulover Marina, Miami Florida
CLIENT: Westrec Marinas
Performed structural and civil RPR services, field inspection and construction administration. Delegated and expedited permit application coordination and compliance with the municipal county authorities for the construction of new building and parking lot. Inspected the construction of maintenance yard, bulkhead, water service and sanitary connections. Supported in the CAD structural and civil engineering design process.

Wyndham Hotel, Miami Beach, Florida
CLIENT: Wyndham Casa Marina Resort
Performed Civil Engineering field inspection and construction administration services for the re-development of the existing resort, including paving, drainage, water and sewer services.

ROBERTO E. BALBIS, P.E.
VICE PRESIDENT/PRINCIPAL ENGINEER
ARDAMAN & ASSOCIATES, INC., WEST PALM BEACH

EDUCATION

B.S.Civil Engineering, University of Florida, 1969
M.E. University of Florida, 1974

REGISTRATION

Professional Engineer, Florida, No. 15832, 1976
Special Inspector (Threshold Buildings), Florida No. 0013
Professional Engineer, Maine, No. 9653

EXPERIENCE

Mr. Balbis, as Vice President and Principal Engineer, has managed thousands of projects, dealing with geotechnical engineering and construction materials testing. He also has served as an expert witness on behalf of several public-sector and private clients. Mr. Balbis is proficient in the role of Senior Consultant, having served in this capacity on public-sector contracts, including City of West Palm Beach, Palm Beach Gardens, Town of Lake Park, City of Lakeworth, South Florida Water Management District, Palm Beach County, Martin County, Indian River County and Palm Beach School Board. Mr. Balbis has accumulated 40 years of geotechnical engineering experience. He has gained a wealth of knowledge regarding construction conditions in the area. He is often consulted on 'high-profile' projects, such as City Place, Judicial Center Parking Structure, Northbridge Center, Esperante and the Kravis Performing Arts Center.

Mr. Balbis is a specialist in the use of innovative site preparation measures to allow the use of shallow foundations to support heavy structures and embankments over weak deposits throughout Florida. Mr. Balbis has supervised more than 6,000 engineering projects since 1982 and he has been involved with projects both within the United States and internationally.

Mr. Balbis has extensive experience in the design and construction control of earthen dams and holding ponds for the containment of clear water and phosphate industry wastes. His responsibilities have included planning and supervising field exploration and testing programs including by geophysical methods; preparation and evaluation of soil and groundwater laboratory testing programs; geohydrological studies; borrow investigations; slope stability analyses; embankment design; design of liner systems; design of underdrains to collect leachate; preparation of construction documents; safety inspection of existing holding facilities; preparation of groundwater quality monitoring programs; obtaining operational permits, etc. Experience has included surface runoff studies; river routing and overflow control studies; Karst terrain evaluations; watershed and spillway studies, etc.

Palm Beach County Engineering Department – Continuing Engineering and Testing Contract, WPB, Florida
Mr. Balbis has been the contract manager for the continuing contracts between Ardaman and Palm Beach County for several years. He routinely coordinates geotechnical and environmental investigations on County projects, as well as staffing construction projects with certified and experienced testing technicians.

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ROBERTO E. BALBIS, P.E. (continued)

City of West Palm Beach – Continuing Geotechnical and Testing Services, WBP, Florida
Ardaman has provided geotechnical, environmental and material testing services for numerous municipal projects ranging in nature from roadway construction, pavement analysis, sidewalk and curb replacements, building foundations, seepage studies, historical studies, various City park improvements; fire stations, seawalls and piers, water treatment plants and disposal sites for the City that Ardaman has in the past 25 years.

Village of Wellington Roadway Improvement Projects, Wellington, Florida
Mr. Balbis inspected various roadways for the Village Wellington to identify roadways in disrepair. He then supervised the performance of a pavement evaluation of the various roadways, which includes the performance of core borings, auger borings and laboratory testing. Mr. Balbis also managed the testing and inspection programs during repairs/repaving projects.

City of Sunrise – Numerous Projects
Mr. Balbis has served as Senior Engineer/Reviewer on the following projects: Services have included a wide range of environmental and geotechnical and facilities engineering:

- Sunrise Pump Station – Geotechnical
- Sunset Plaza, Parcel BTBI & CTC1 Review – Environmental / Asbestos
- Shops at Sawgrass – Environmental / Asbestos
- Vista Isles Development – Environmental / Asbestos
- East Sunrise Site for SouthTrust Bank – Environmental / Asbestos
- Property development, W. Oakland Park Blvd. – Environmental / Asbestos

Florida Atlantic University – Various Campuses
Mr. Balbis served as principal-in-charge of several projects at FAU, including the following:

- Biomedical Science Building
- North Campus Commons Building
- DeSantis Center Pavilion
- Slattery School Addition
- Gladys Davis Pavilion Addition
- Greenhouse Project
- Hazardous Waste Facility Building

South Florida Water Management District, West Palm Beach, Florida
Mr. Balbis has provided engineering and testing services to the SFWMD for many years, both through prime consultants and contractors, and under continuing contracts directly with the District. He has provided his expertise on reservoirs, water control structures and water quality projects, as well on foundation engineering for buildings. His specific areas of expertise include:

- Construction of levees and structures on soft ground conditions
- Improvement of soft ground conditions using Dynamic Compaction and Vibroreplacement techniques
- Analysis and design of seepage barriers
- Deep and shallow foundation alternatives for structures
- Forensic studies of structures affected by settlement effects

In addition, Mr. Balbis regularly performs annual inspections of reservoir embankments for private clients within the South Florida Water Management District. These reports are submitted to District as part of its mandated annual inspection program.

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ANDREW NIXON, P.E.
SENIOR PROJECT ENGINEER/BRANCH MANAGER
ARDAMAN & ASSOCIATES, INC., WEST PALM BEACH

EDUCATION

B.S. Ocean Engineering, Florida Atlantic University, 2005

REGISTRATION

Professional Engineer, Florida, No. 71458, 2010
Florida Engineering Society, 2005 - present
National Society of Professional Engineers, 2005 - present
Qualified Stormwater Management Inspector, Inspector No. 27919
Florida Engineering Leadership Institute Alumni, 2015

EXPERIENCE

Mr. Nixon has 11 years of experience and is currently a Senior Project Engineer for the Environmental, Geotechnical and Remediation Departments of Ardaman's West Palm Beach office and serves as the Branch Manager. Mr. Nixon has completed over a 100 Phase I & II Environmental Site Assessments for a variety of sites including brownfields, HUD, power transmission, dry cleaners, gas stations, nurseries, landfills, ports and other commercial/industrial sites. He has also completed over 15 Site/Contamination Assessment Reports in accordance with Chapter 62 of the Florida Administrative Code (FAC).Mr. Nixon has prepared several Remedial Action Plans (RAP) and Tank Closure Assessments in accordance in with Chapter 62, FAC. He has also been project manager for the installation of several remediation systems. Duties included supervision of excavation, trenching, and drilling activities and the coordination of subcontractors, inspections, system startup, subsequent operation and maintenance, and budget management.

Mr. Nixon has also coordinated numerous subsurface exploration programs and provided foundations and site preparation recommendations for the construction of wide variety of projects. He also completed pile inspections, helical pier inspections, fireproofing inspections, load tests, and monitored specialty ground improvement techniques such as Vibro-flotation, Vibro-Replacement and Dynamic Compaction. Mr. Nixon has conducted several Preconstruction Video Surveys and monitored the offsite vibration effects from construction projects.

Mr. Nixon has also coordinated and supervised various CQC field and laboratory testing programs during the construction phase of a variety projects. The testing programs typically include the performance of earthwork inspections, field and laboratory testing of soils, and field sampling of concrete. Mr. Nixon has also inspected and supervised testing programs during the construction of various roadway projects.

Village of Wellington Roadway Improvement Projects, Wellington, Florida
Mr. Nixon inspected various roadways for the Village Wellington to identify roadways in disrepair. He then supervised the performance of a pavement evaluation of the various roadways, which includes the performance of core borings, auger borings and laboratory testing. Mr. Nixon also managed the testing and inspection programs during repairs/repaving projects.

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ANDREW NIXON, P.E. (continued)

City Lake Worth Capital Improvements, Lake Worth, Florida
Mr. Nixon performed a Phase I Environmental Site Assessments on four important City buildings. The ASTM 1527-05 standard was used. In addition, Mr. Nixon inspected, supervised the performance of over 100 core borings in various roadways throughout the City, and presented a pavement evaluation with recommendations for resurfacing.

Port of Everglades – Broward County Intermodal Center and People Mover System
Mr. Nixon was the lead engineer for a Contamination Screening Evaluation Report (CSER) that was conducted as part of FDOT's Project Development and Environmental (PD&E) study. The proposed project consisted of a People Mover and Intermodal Center that provided effective transportation between the airport and seaport. Ardaman provided professional opinions relative to the presence of potential contamination within or near the proposed project alignment alternatives from the Fort Lauderdale Airport to the Port of Everglades.

Palm Beach County – Continuing Services contract for Geotechnical Engineering, Material Testing and Inspection Services, Florida
Mr. Nixon has provided geotechnical and environmental engineering for this continuing contract. Mr. Nixon has conducted several Preconstruction Video Surveys and monitored the offsite vibration effects from construction projects. He routinely coordinates geotechnical and environmental investigations on County projects that include: Acreage Branch Library - Government Center Chiller Replacement - Historic Courthouse Renovation - Palm Beach County Courthouse - South County Courthouse Parking Garage - Jupiter Library Expansion – various roadway improvements projects that include paving, pipeline installation and drainage improvements. Ardaman also provided the County's Health Department with geotechnical exploration, preparation of site assessment (included environmental site assessment for this property), and foundation design recommendations for the Departments new Administration facility and material testing services during construction.

City of West Palm Beach – Multiple Roadway and Drainage Improvement Projects, West Palm Beach, Florida
Mr. Nixon conducted environmental assessments to identify potential environmental concerns that could be discovered during proposed roadway and drainage improvement projects.

Port of Palm Beach, Florida
Mr. Nixon performed several environmental assessments for underground storage tanks, environmental assessments for expansion of port facilities, and environmental assessments in support of dredging operations and sea grass assessments. He also performed semi-annual storm water monitoring sampling satisfying the requirements of the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) storm water permit.

South Florida Water Management District
Mr. Nixon has been on the design team for multiple SFWMD projects for both the Environmental and Geotechnical Departments. Projects include levees, reservoirs, water control structures and water quality projects.

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KEVIN FERGUSON, P.E.
PROJECT GEOTECHNICAL ENGINEER
ARDAMAN & ASSOCIATES, INC., WEST PALM BEACH

EDUCATION

B.S. Civil Engineering, University of Florida, 1996

REGISTRATION

Professional Engineer, Florida, No. 60712, 2004
Qualified Storm Water Management Inspector, FDEP Inspector No. 5288, 2003

EXPERIENCE

Mr. Ferguson has20 years of experience providing recommendations governing the geotechnical aspects of various projects throughout Florida. He has been involved with numerous projects that have required simple shallow foundations to more complicated recommendations requiring improvement through various means including:Vibro-compaction/Vibro-replacement. Deep Soil Mixing, and Dynamic Compaction.He has worked on residential, commercial, industrial and other projects requiring driven piles, augured cast-in-place piles, caissons, helical piers, pin piles, chemical grouting, and compaction grouting.He worked for a well-known geogrid manufacturer and a geosynthetic supplier and has provided solutions to challenging roadway and construction issues including temporary and permanent solutions for crossing soft soils, stabilizing erosion control on slopes and banks, addressed minor slope failures, buried trash and organics, water quality, and separation issues.He has also worked on pavement designs involving residential communities, commercial facilities, ports, haul roads, transmission access roads and other facilities. He has been involved with solutions to extend the life of roadways using geosynthetics that help extend the time it takes for reflective cracking to occur and that help reduce water intrusion.

L-8 Reservoir Project, West Palm Beach, Florida
Mr. Ferguson provided geosynthetic to design standards required by South Florida Water Management District (SFWMD)to stabilize grassed portion on the upper banks of the reservoir.This included obtaining answers to the spacing of various anchor systems to hold the high performance TRM and tracking the submittals required for this portion of the site materials.

Andros Isles Subdivision, West Palm Beach, Florida
Mr. Ferguson made recommendations from initial site purchase of land through clearing and developing. This included working closely with the site civil engineer and contractors to provide recommendations for lakes, fill, roadways and foundations. Every option was carefully considered to provide the best results at the most reasonable cost.

Gainesville Levy Wetland Project, Gainesville, Florida
Mr. Ferguson helped design a roadway through an existing swamp where the grade stakes had to be set with an airboat. This challenging project was high profile and included constructing approximately 2 miles of access road/levy.

Port of Tampa, Tampa, Florida
Mr. Ferguson supported the design of geogrid supported pavements for heavy straddle carriers used over soft marine clays and dredge spoils. Provided field support when called upon to ensure correct installation and address questions during field installation.

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KEVIN FERGUSON, P.E. (continued)

Proposed High Rise Tower and Parking Garage – N. Flagler Drive, West Palm Beach, Florida
Mr. Ferguson coordinated clearing, site location and borings for the project and followed through with foundation and pavement recommendations as well as other geotechnical aspects of the project.

3550 South Ocean Boulevard, South Palm Beach, Florida
Mr. Ferguson provided geotechnical recommendations for the foundations and pavements for a planned mid-rise building, conducted pile load tests and made recommendations for retaining walls, collected samples for EPA testing of beach sands, etc.

US Sugar Corporation, Clewiston, Florida
Mr. Ferguson provided geotechnical recommendations for ground improvement and foundation support for proposed Boiler 9.

Jupiter Island Club, Jupiter Island / Hobe Sound, Florida
Mr. Ferguson provided pavement evaluation and recommendations for new pavements, tennis courts, drainage additions and other geotechnical recommendations for various projects.

Indiantown Boatyard Project, Indiantown, Martin County, Florida
Mr. Ferguson provided recommendations for a new boat slip and dry dock facility along with heavy duty pavement recommendations for a straddle carrier that will be used at the facility.

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Avirom & Associates, Inc.

John T. Doogan

Professional Land Surveyor / LS4409 / Florida
Project Surveyor

Years with Avirom & Associates: 18
Total Years of Experience: 42

Education

1974 / Associates in Science / Engineering

Professional Experience

John Doogan had twenty four years of survey experience prior to joining Avirom & Associates in 1999. He has been a Florida registered surveyor since July of 1987 and became certified in Geographic Information System from Florida Atlantic University in June of 2003. He is currently responsible for boundary surveys, topographic surveys, GPS surveys and expert witness testimony. John is a member of the Florida Society of Professional Land Surveyors.

Professional Projects

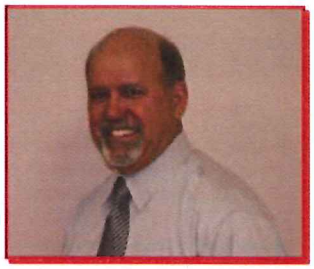
AutoNation Ford, Delray Beach – boundary survey; topographic and tree survey; plat preparation and processing; sketch and descriptions
Ocean City Properties, Delray Beach – ALTA/NSPS survey
City of Lauderhill:
- *Boye's Gas Service* - boundary survey
- *Fire Station 30 Relocation* - boundary and topographic survey
- *First City Hall* - topographic and final survey
- *Habitat Condo* - topographic survey
- *Lift Station #37* – topographic survey for design of lift station improvements
- *Veterans Park/Fire Station* – boundary and topographic survey
- *Jackie Gleason Park* – boundary and topographic survey

Office Depot - boundary, topographic and tree survey; miscellaneous layout
Lynn University - overall boundary, topographic and tree survey; survey support for construction
City of Coral Springs – route-of-line survey, base mapping for existing utilities above and below ground for engineer's design
Tamarac Water Treatment Plant – base mapping of all utilities above and below ground for engineer's future design
Coral Springs Public Safety Complex – boundary and topographic survey for architect and engineer's design of police headquarters and fire substation renovation
Atlantic Business Center – boundary and topographic survey; coordination of aerial photography; preparation of plat; coordination of survey support for engineering design and development (130 acres)

AVIROM & ASSOCIATES ESTABLISHED 1987

50 SW 2nd Avenue, Suite 102, Boca Raton, Florida 33432

Avirom & Associates, Inc.



Michael D. Avirom

Professional Land Surveyor / LS3268 / Florida
Principal

Years with Avirom & Associates: 35
Total Years of Experience: 43

Education

1973 / Bachelor of Business Administration
1976 / Associates in Science / Land Surveying
1971 / Associate in Arts

Professional Experience

Michael D. Avirom established Avirom & Associates, Inc. in 1981. Mr. Avirom graduated with a Business Administration Degree from Florida Atlantic University in 1973. He worked for a large surveying firm for a number of years and became a Florida Registered Land Surveyor in 1979. Michael launched his own company in 1981. His surveying expertise in boundary, aerial control, topography, bathymetric and construction layout distinguishes him as a respected professional in the industry. His business acumen has created the successful firm that Avirom & Associates is today. Michael is a member of the Florida Society of Professional Land Surveyors and National Society of Professional Land Surveyors.

Professional Projects

Delray Beach Historical Society – topographic and tree survey
Delray Beach Old School Square Garage and Park Site – condo exhibits in accord with Florida Statute 61B-18.002; condo exhibits for entire garage
Delray Beach Art Warehouse – boundary, topographic and tree survey
City of Delray Beach, Fire Station #2 – boundary, topographic and tree survey
City of Delray Beach, Lewis Cove Road Drainage – topographic survey
City of Delray Beach, NW 5th Avenue – boundary and topographic survey
Delray Beach Fire Station #3 – boundary, topographic and tree survey
Delray Beach Pineapple Grove Pocket Park – boundary and topographic survey
City of Delray Beach, Tourist Nook – topographic survey; layout stationing/centerline; as-builts
City of Delray Beach - boundary surveys; topographic surveys; sketch and legal descriptions; construction services such as layouts and staking
Boynton Beach CRA - topographic and boundary survey
City of Delray Beach – Carver Park – boundary survey
Palm Beach Force Main Replacement Project - Survey layout and as-builts; prepare record drawings
North Ocean Boulevard Seawall Replacement - route-of-line, coastal construction control line, mean high water line survey; construction services

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Section B
Approach to Project Management

APPROACH TO PROJECT MANAGEMENT

Coastal Systems will work with the City and other members of the project team to develop a timeline of milestones prior to the start of the project. Coastal Systems will communicate with the City on a weekly basis via e-mail or phone to provide updates on deliverables and design progress. Coastal Systems can also meet with the City on a bi-weekly basis to provide project updates, should the City desire.

The following outlines typical major categories of project tasks, generally in chronological order, for engineering construction projects. All elements may not be required for a particular project, and projects that consist of design guidance document production or general consulting services will have an alternate format. Tasks may run in partial or full concurrency.

- *Data Collection and Design/Regulatory Feasibility Review*
- *Conceptual Design and Alternatives Analysis*
- *Environmental Permitting Agency Consultations*
- *City/Public Presentations*
- *Scope/Budget Review*
- *Schematic Design and Environmental Permit Applications*
- *Environmental Permit Processing*
- *Final Design and Construction Cost Estimates w/ Environmental Protection Criteria*
- *Construction Bid Process*
- *Construction, including any required Mitigation*
- *Post-Construction Monitoring (if required)*
- *Permit and Contract Close-out*

Coastal Systems is equipped to provide the City with complete agency-required site surveys, including topographic, bathymetric, and biological surveys/monitoring, and process permit applications for coastal/marine projects issued under this contract, following the typical Engineering Project Management Approach outlined above.

Coastal Systems goal for effective project management is to clearly define scope and fee budget for a project from the beginning, in close conjunction with the City. Roles and responsibilities are clearly conveyed and a project schedule established with milestones. Coastal Systems strives to define the regulatory strategy prior to submitting permit applications through pre-application meetings and an in-depth knowledge of state and federal permitting regulations.

The project management/communication approach listed above applies to the disciplines pursued for this RFQ. The descriptions enclosed on the following pages convey specific methodologies for executing projects under the civil engineering, environmental/natural resources, marine/coastal engineering and water quality/stormwater management categories:

Civil Engineering

Our civil engineers work closely with diverse project teams to provide civil engineering services for site development. Paving, grading and drainage design services are provided along with water and sanitary sewer services. Working relationships are maintained with South Florida state and local regulatory agencies with jurisdiction on site planning projects to facilitate plans approval through the stringent codes and regulations. Coastal Systems is uniquely organized with engineering and regulatory permitting staff in-house to address environmental resource and coastal construction permits that are required as part of a comprehensive design approach.

Coastal Systems provides complete civil engineering services for streetscape improvements. In addition to detailed construction plans, Coastal Systems' designs incorporated the latest standards for handicap access via surface texture treatments and color enhancements to allow pedestrian access across street thoroughfares.

Whether it is a fire protection system for a marina or a sanitary sewer for a commercial development, the civil engineering team at Coastal Systems International, Inc. can provide full service utility engineering design services ranging from site investigation through design and construction administration. The team has diverse project experience, including the design of a private island potable water supply system. Design capabilities include:

- Fire Protection
- Potable Water
- Sanitary Sewer
- Fuel
- Communications

Environmental/Natural Resources

Coastal Systems has conducted environmental and technical feasibility studies for planning purposes, and has subsequently designed and permitted dozens of marinas, docking facilities, mooring fields, shoreline stabilization projects, parks and other recreational enhancement projects over or near the water throughout Florida. Coastal Systems plans and implements design of projects in close coordination with our in-house environmental/permitting department, so the design follows the criteria of the various applicable agency regulatory processes. This approach for permit applications minimizes the time it takes to obtain the necessary permits, while meeting the client's goals. Coastal Systems has a dedicated staff of marine biologists and project managers that regularly process marine environmental and coastal construction permits each year through federal, state and local regulatory agencies.

Coastal Systems' in-house marine biologists routinely conduct marine resource surveys and perform biological monitoring surveys in association with waterfront projects. These surveys are essential for the planning of waterfront improvements in order to understand potential impacts of proposed improvements with respect to seagrass and other resources. In-house marine biologists conduct the surveys with specialized equipment such as towed-underwater video mapping systems, facilitating proper design of the marine improvements project. Base maps are prepared for use in the engineering design process to avoid and/or minimize impacts to marine resources from proposed projects. The maps are essential to present the existing conditions to the regulatory agencies and to provide a baseline for environmental monitoring during and after construction. The Coastal Systems team has full data processing capabilities including digital terrain models for topographic contour maps and earthworks/dredging calculations. Marine resources data is incorporated into these maps.

Coastal Systems plans and implements surveys of natural resources on land and sea, for private and public clients. Projects that typically require these services include coastal and island resort developments, ports, marinas, beach nourishment and shoreline stabilization, government resource management programs, and eco-tourism development. We use the latest technology and can meet the quality standards required for the City's projects.

Literature and data reviews are typically conducted at the outset of a project to efficiently plan field surveys and to create a comprehensive database. We survey natural resources qualitatively and quantitatively, from species-specific to entire ecosystem evaluations. Organisms can be accurately and efficiently located using rectified aerial photography, remote sensing, traditional surveying, and GPS. Habitats can be characterized and categorized based on physical features, geography, the presence of contaminants, and other data to determine the key features required in order to maintain or restore the natural resources they support.

Our specialties include mapping of protected coastal and marine plants and wildlife, surveying in remote locations, and spatial/temporal analysis of resources (evaluation of changes over time). Data can be analyzed and presented in a number of formats, including modeling to provide integrated resource management options and GIS.

Data collected and analyzed can be applied, for example, to land, water, and natural areas management initiatives, plans for ecologically sustainable development, and environmental impact assessments. Our ability to understand the big-picture strategy of our clients enables us to deliver a product that fulfills the targeted project needs.

Coastal Systems has a dedicated staff that regularly processes environmental resources and coastal construction permits each year through federal, state and local regulatory agencies. This team specializes in coastal/waterfront permitting projects, but consulting services are also provided to developers, attorneys, and architects. Development and existing facility improvement feasibility studies are regularly provided to address regulatory concerns prior to submitting applications.

Coastal Systems has working relationships with representatives of the necessary agencies to expedite the environmental resource permit process. In addition, the marine biologists at Coastal Systems have extensive experience with planning, negotiating, and designing mitigation for impacts to marine resources. Mitigation can include underwater artificial reefs, and seagrass planting/restoration.

Coastal Systems assists clients through the comprehensive environmental and land use regulations governing state lands use (proprietary) authorizations. In Florida, the Department of Environmental Protection (DEP) is responsible for acquiring, administering and disposing of state-owned lands on behalf of the Board of Trustees of the Internal Improvement Trust Fund. Coastal Systems has provided submerged lands consulting services on several marina and docking facility projects, and these services may be required for the projects issued under this contract. We provide project feasibility and strategy consulting, and expedite processing of proprietary authorizations through our familiarity with the application format and process.

Coastal Systems provides environmental permitting services relative to the Environmental Resource Permit (ERP) application process. Our role in the process includes providing an initial assessment on the feasibility of permitting a project and identifying key requirements for approval. We have successfully provided innovative alternatives to design and construction to address a wide range of permitting challenges. The in-house team of designers, surveyors, engineers and biologists are experienced in providing site-specific information typically required by agencies. With a multitude of ERP permits secured for private and public clients, Coastal Systems has the capability to expedite ERP processing for a wide range of projects.

Coastal Systems also has extensive experience in obtaining Joint Coastal Permits (JCP) from the Department of Environmental Protection (DEP). This consolidated process facilitates state and federal approval for projects which require a combination of permits including coastal construction, environmental resource and wetland resource permits, and sovereign submerged land authorizations. JCP applications are submitted to the DEP Office of Beaches and to the firm for review of engineering feasibility and potential environmental impacts of projects proposed below the mean high water line in the coastal zone.

Coastal Systems' project managers work closely with local governments, coastal engineers, and DEP staff to identify and resolve areas of concern so as to efficiently secure permits for a variety of structures and activities including:

- Dredging and maintenance of inlets and navigational channels
- Beach restoration and renourishment
- Construction of beach erosion control structures such as groins and breakwaters

Coastal Systems' key to success in obtaining JCP approval for large-scale coastal projects includes a winning combination of a knowledgeable staff with a wide range of expertise, long-running relationships with regulatory agencies, and a commitment to produce environmentally sound projects that enhance valuable coastal areas.

To balance project lighting needs for safety and aesthetic purposes with marine turtle protection, Coastal Systems coordinates with project lighting consultants, landscape architects, and the project architect to determine the best exterior light design alternative for the project site that will meet not only DEP criteria, but also HRS and municipal requirements. Coastal Systems in turn coordinates with the DEP Office of Beaches and Florida Fish and Wildlife Conservation Commission staff to expedite their review and approval of exterior lighting plans for beachfront properties. To achieve optimum results, Coastal Systems utilizes the latest scientific research on turtle habits and recent technology from leaders in the lighting industry.

Coastal Systems provides creative and comprehensive coastal engineering and consulting services relative to obtaining DEP Coastal Construction Control Line (CCCL) permits. Coastal Systems works closely with the client, project design professionals, legal team and DEP staff to optimize results. With over 20 years of experience in providing cutting-edge technical and legal regulatory analysis, Coastal Systems is unique in terms of the depth and breadth of experience we can apply to coastal permitting projects. We coordinate on almost a daily basis with DEP staff and, as a result, excellent communication and professional relationships are maintained to streamline the permitting process. As part of the environmental permitting consulting services, Coastal Systems will assess the proposed project construction activities and craft a CCCL permitting strategy based on the needs of the project, taking into consideration schedule, cost, environmental impacts and coordination with other agencies as needed where there may be overlapping State and local regulations.

When evaluating a coastal site for habitat enhancement restoration purposes, Coastal Systems will collect and review site photographs, surveys, and other data regarding historic and existing conditions of the coastal habitat. Innovative topographic and resource surveying techniques employed by our staff give detailed, top-quality data at competitive prices. Our coastal biologists, planners, and engineers specialize in analysis of site-specific parameters in order to plan a successful restoration project that balances developmental and environmental needs.

Coastal Systems develops environmental monitoring and mitigation plans as part of the project planning and permitting process for coastal and marine projects. Mitigation is implemented to offset unavoidable impacts imposed by a project. Specifically, plans document the extent of sensitive marine and terrestrial life, as well as other resources, in the vicinity of the proposed project; confirms minimization of impacts to natural resources; outlines mitigation for impacted resources; and presents an implementation and monitoring plan for the construction and mitigation activities.

Water Resources/Stormwater Management

Coastal Systems provides our clients with complete services ranging from the design to the permitting of stormwater management systems. Stormwater management (drainage) systems for new construction projects and redevelopment require environmental permits from the Department of Environmental Protection (DEP) or Water Management Districts (WMD) and local regulatory agencies. Regulatory criteria established by the agencies are set to provide adequate flood control (water quantity) and remove sediment and pollutants from storm runoff (water quality). Structural components of drainage systems may include storm drains, street gutters, weirs, dams, pumps, exfiltration trenches and drainage wells. A combination of these components, in conjunction with non-structural elements such as grading and vegetation, are typically used in the design of a stormwater management system to meet both water quality and water quantity criteria. Our civil engineers have designed and implemented numerous systems for multi-residential and commercial projects in South Florida, specializing in high density developments. Our team of permit specialists and project managers, with engineering and geology backgrounds, is experienced in processing stormwater management permit applications and related authorizations such as NPDES and water use permits. We have long-term, excellent working relationships with both engineering and environmental staff at the regulatory agencies.

The analysis of baseline water quality and the development of control measures to prevent violation of water quality standards is typically required for construction in or adjacent to surface waters. Federal, state, and county codes establish maximum contaminant levels for waters based upon their intended use. All waters must provide for aquatic life conservation and human health protection. Using our comprehensive regulatory and technical knowledge, Coastal Systems develops site-specific baseline testing and monitoring plans in coordination with the jurisdictional agencies, evaluates and negotiates permit conditions, and designs and assists in the implementation of water pollution control plans.

Turbidity Management: For projects involving construction within, or discharge to, surface waters, Coastal Systems designs turbidity monitoring and management plans to fulfill agency requirements. Our experience includes projects in sensitive environments such as the Biscayne Bay Aquatic Preserve and the Florida Keys National Marine Sanctuary. Similarly, we have assisted in the development of turbidity monitoring for dredge/fill projects in areas inhabited by threatened or endangered species. As part of our Environmental Impact Assessments for international island development projects, we conduct comprehensive water quality evaluations for purposes of freshwater supply and environmental conservation.

Dewatering: Dewatering activities for urban coastal construction may present a regulatory challenge due to the high groundwater table in Florida and potential existence of contaminated soils or water. We use the best available databases and scientific tools to assist our clients in securing water use permits.

Coastal and Marine Engineering

Coastal Systems has worked with many municipal and other clients to enhance access to waterfront areas and the public experience of these special environments. These include shoreline stabilization and beautification projects using structural and vegetated design solutions, pedestrian trails and transportation connections, bridges, kayak launch areas, ADA access design and other marine structural and public area improvements. Coastal Systems has also provided public clients with recommendations for planning and design standards in coastal and waterfront areas to allow appropriate consideration for area-specific issues such as flood and coastal storm vulnerability, endangered species protection, riparian rights and navigational safety. Coastal Systems maximizes the experience of diverse user groups while maintaining sensitivity to stakeholder interests, client costs and maintenance issues.

Coastal Systems offers the full range of hydrographic (water depth) and marine resource mapping capabilities for waterfront projects. The firm maintains an inventory including GPS receivers, survey vessels, fathometers, total stations, towed underwater video, current meters and other related equipment. The team also utilizes GIS to process and import a variety of data from multiple sources for analysis. Marine biologists are on staff to map and assess marine resources (coral reefs, seagrass, etc.) that may be impacted by a proposed project. In addition, Coastal Systems can provide upland survey horizontal/vertical control surveys in remote areas utilizing long baseline GPS surveying technicians, photogrammetric surveys are provided with high resolution color digital ortho-rectified maps for use in planning and design.

Coastal Systems prepares all construction plans utilizing AutoCAD and associated design tools. Our full-time CAD technicians prepare permit sketches and construction plans in accordance with the National Institute of Building Sciences, National CAD standards. Additionally, many of our engineers also complete design work within the AutoCAD environment.

Our firm specializes in coastal, waterfront, and civil works projects; therefore, all planning and engineering design begins with a base map. In addition to in-house surveying capabilities, our firm routinely works with surveyors and other consultants that provide CAD files for incorporation into planning and engineering documents. When surveys are provided from other consultants, Coastal Systems requires a signed/sealed hard copy along with any CAD files for record-keeping purposes. All CAD files are reviewed and compared with the hard copies as part of standard quality control procedures. For record plans, CAD files from the project surveyor and/or contractor can be imported and overlaid in CAD to ensure conformance with the construction plans and permits.

Coastal Systems utilizes the following engineering tools within the AutoCAD environment:

- Civil 3D – this tool is essential for all civil works projects. The software provides digital terrain modeling (DTM) capabilities to create surfaces and prepare contours, volumes and other earthworks calculations. The software also has road design tools that can be utilized for paths and other similar Right-of-Way projects. Coordinate Geometry (COGO) and other curve and geometry calculations are calculated along with plan, profile and cut/fill sections.
- SewerCAD – analyzes sanitary sewer systems within the CAD environment. Gravity sewers, force mains and pump systems can be evaluated.
- WaterCAD – analyzes water distribution systems within the CAD environment. Pressure flow, fire flow simulations and pumps can be evaluated.

Coastal Systems has developed a strong capability in utilizing advanced numerical models to simulate coastal processes at inlets, beaches and waterway systems. These services include the analysis of winds,

waves, storm surge, sediment transport, water quality (flushing) and tidal current that will affect marine structures. Coastal Systems utilizes the Danish Hydraulics Institute (DHI) MIKE-21 software package to simulate techniques to model hurricanes and associated storm surge and waves, hydrodynamic processes, water quality, sediment transport processes and morphological changes. Our firm's numerical modeling capabilities have also been utilized in the detailed design of coastal/waterfront projects involving wave refraction and diffraction simulation, current-wave interactions, longshore sediment transport, and sediment deposition along the coast. Coastal Systems has developed a very strong capability in the practical application of these models based on design projects conducted in Florida and internationally.

- *MIKE-21 Hydrodynamic* – MIKE-21 is a professional engineering software package developed by DHI Water and Environment. The MIKE-21 FM Hydrodynamic (HD) model simulates two-dimensional water level variations and flows in response to a variety of forcing functions in lakes, estuaries, bays and coastal areas.
- *MIKE-21 Boussinesq Waves* – The Boussinesq Wave model (MIKE-21 BW) is the state-of-the-art numerical model for calculation and analysis of short- and long-period waves in ports, harbors and coastal areas. MIKE-21 BW can also be used for detailed modeling of wave-induced current fields, surf zone dynamics and swash zone oscillations. MIKE-21 BW is capable of reproducing the combined effects of all important wave phenomena of interest in port, harbor and coastal engineering including shoaling, refraction, diffraction, wave breaking, bottom friction, moving shoreline, partial reflection and transmission, non-linear wave-wave interaction, frequency spreading and directional spreading.
- *MIKE-21 Spectral Waves* – The Spectral Wave Model (MIKE-21 SW) includes a new generation spectral wind-wave model and is used for the assessment of wave climates in offshore and coastal areas in hindcast and forecast mode. The model simulates the growth, decay and transformation of wind-generated waves and swells in offshore and coastal areas. A major application for this model is the design of offshore, coastal and port structures where accurate assessment of wave loads is of utmost importance to the safe and economic design of these structures.
- *LITPACK/LITLINE* – LITPACK combines a technical deterministic sediment transport model with user-friendly facilities for the simulation of a large number of wave/current scenarios. These simulations provide predictions regarding the net littoral drift, developments of coastal profiles and long-term coastline evolution for a project area.

Coastal Systems provides permit processing services in association with our marine engineering projects. Our project managers and technical staff are well versed in the regulations and procedures required by the Corps, as well as federal commenting agencies including NMFS, FWS and the U.S. Environmental Protection Agency (EPA). Our firm has tremendous experience negotiating with the FDEP Coastal Protection and Engineering Program, the FDEP Beach Management Funding Assistance Program, FDEP Division of State Lands, South Florida Water Management District and FWC. Communicating project goals to regulatory agencies, project stakeholders, and local interest groups requires a concerted effort on behalf of the project sponsor and the consultant team.

Open communication in the early stages of project design and development is essential to enable the project team to effectively address any site specific issues prior to project design and permitting. The project design can be altered, in some cases, to facilitate project implementation and avoid project opposition. If Notices of Intent to Issue are published, and local interest groups and/or stakeholders oppose the project, project schedule delays can occur, resulting in additional costs.

Coastal Systems has become widely recognized as one of the nation's leading experts in Federal Emergency Management Agency (FEMA) technical analysis and regulatory interpretations. Our

specialized team utilizes historic, meteorologic, hydrologic, and hydraulic data to interpret floodplain management regulations and evaluate Special Flood Hazard Areas (SFHAs). FEMA engineers and cartographers delineate SFHAs on Flood Insurance Rate Maps (FIRMs). SFHAs are those areas subject to inundation by a flood that has a one percent or greater chance of being equaled or exceeded during any given year. Coastal Systems reviews the design goals of a project to provide information to the project developer or architect relative to acceptable project design alternatives. In addition, Coastal Systems provides services to obtain variances from local floodplain ordinances, letters of no obligation from FEMA, and processes revisions to the SFHAs, as necessary, to meet project objectives.

Coastal Systems employs a variety of numerical modeling applications to assist in the analysis and design of project improvements and alternatives. Two modeling applications employed specifically for FEMA interpretations are the Wave Height Analysis for Flood Insurance Studies (WHAFIS) model and the Wave Run-up Model, which determine the height of run-up landward of the still water line. Coastal Systems has successfully implemented both applications on numerous projects requiring FEMA compliance interpretation or variance.

Coastal Systems' permitting and engineering team works closely with attorneys, architects, local officials, FEMA representative consultants, and FEMA officials to determine the most efficient and cost effective design alternative for projects located within SFHAs.

The professional engineering staff at Coastal Systems employs the latest in numerical modeling technology to properly assess and design coastal structures including: seawalls, groins, breakwaters, and jetties. The coastal engineering team has designed and/or analyzed numerous projects throughout Florida and the Caribbean. Key Staff at Coastal Systems have assessed marine structures above and below water with hundreds of logged underwater inspection time. This inspection experience provides the design team with the background to specify materials for the marine environment. The team has designed various bulkheads in Florida with a variety of materials including steel, concrete, vinyl and composite materials. The geotechnical parameters are evaluated and cost-effective designs are completed with local knowledge of materials and construction methods.

We routinely conduct feasibility, coastal engineering and environmental studies in support of the coastal design effort. In-house personnel can provide all of the field investigation services to supplement the design including hydrographic surveys, oceanographic data collection, geotechnical investigations, and mapping. Existing structures are also evaluated for damage assessment with rehabilitation schemes developed to restore shore protection. Emergency coastal structure assessment services after hurricanes and other coastal storms have been provided to respond to clients' needs.

DESIGN APPROACH

Field Investigations: Coastal Systems begins the design approach by collecting survey data within the project location to provide a representation of the existing terrain and all of its features. Elevations and locations of any existing rock outcroppings and/or other major structures fronting the project shorelines are identified. These surveys are used to provide background information on a site for the purposes of site development and engineering design. The survey information is used to establish a base map and provide the necessary control for all subsequent detailed survey work.

Planning: After all field data is collected and base maps are prepared, Coastal Systems will work with the City to create a layout of the proposed project. Schematic drawings will be prepared, and approximate quantities determined. Coastal Systems will meet with representative manufacturers to discuss the design criteria and confirm construction budgets prior to proceeding with the final engineering design.

Environmental Permitting: Environmental permitting has been a core sector of practice within our firm since the firm was founded. Key Coastal Systems personnel were former regulators with both State (DEP) and Federal (U.S. Army Corps of Engineers) agencies. Our staff understands the environmental permitting requirements and procedures and strives to establish the environmental permitting strategy and timelines prior to permit application to streamline the permitting process. The Coastal Systems' team will work closely with the regulatory agencies to facilitate site visits expedite their review and approval of the City's proposed projects to address environmentally sensitive issues. Coastal Systems is keenly aware of the environmental constraints that trigger formal consultation with these agencies and will work to optimize the project design and construction methodology to minimize environmental agency consultation requirements.

Engineering Design: Once the Schematic Plan has been selected, engineering design will commence to produce construction plans for bidding and contract award. The Coastal Systems team has a proven track record of design experience with all technical requirements for waterfront projects. Coastal Systems' engineers understand the harsh marine environment, and proper materials will be specified for marine applications to minimize the maintenance needs. Coastal Systems has designed and permitted several marinas, docks and other mooring facilities for municipal, county and state government agencies.

Construction: Coastal Systems provides the full range of construction support services ranging from administration to management and design-build construction through a subsidiary firm, Coastal Systems Development. Marine construction is a specialized industry, and the Coastal Systems team understands the technical requirements for dredging, dredged material handling, pile driving, over-water construction and environmental monitoring. Coastal Systems engineers and environmental managers are experienced in construction administration. The construction plans and specifications do not necessarily ensure that the marine structure will be constructed properly. Effective construction administration is essential to the project. "Sweating the details" during construction can save a considerable amount of maintenance costs over the service life of a structure. The project team regularly provides construction administration services for all engineering projects completed by the firm. The team can additionally employ web-based project management to facilitate the transfer of information between design team members, the contractor, and the client.

Construction Administration and Bidding: Coastal Systems understands the unique requirements of marine construction, since the firm specializes in coastal/waterfront projects. The construction plans and specifications need to be clear and concise to obtain complete bids. Coastal Systems also is a proponent of requiring qualified bids, especially for marine construction. The Coastal Systems team will review the technical bids received by the City and provide consulting services to recommend the most qualified

contractor for the project. Coastal Systems is a strong proponent of considering bid price, qualifications, and means/methods of procurement to avoid the "low bid" process, which may result in the selection of unqualified contractors. Coastal Systems also continuously monitors the prevailing prices and trends in the marine construction industry to leverage new means/methods to lower costs.

Coastal Systems is a small firm, and the Professional Engineer responsible for the plans is involved throughout the document preparation process. Continuous Quality Assurance/Quality Control is conducted in every step of the construction document preparation from initial schematic design through design development and construction documents. Coastal Systems has extensive experience providing construction administration services which will be leveraged to ensure proper construction administration by being responsive to contractor Requests for Information and directly monitoring construction progress. Coastal Systems will coordinate with the contractor for the project to prepare and process project close-out documents for environmental and building permit compliance.

LOCATIONS

Work orders issued under this contract will be performed mainly out of the firm's Corporate Office, with support from its Regional Office in West Palm Beach

Corporate Office
464 South Dixie Highway
Coral Gables, FL 33146
P: 305-661-3655

Regional Office
801 Northpoint Parkway, Suite 151
West Palm Beach, FL 33407

Our sub-consultants will work out of the office locations listed below, both located in Palm Beach County:

Ardaman & Associates
2200 North Florida Mango Rd., Suite 101
West Palm Beach, FL 33409

Avirom & Associates
50 S.W. 2nd Avenue, Suite 102
Boca Raton, FL 33432

AVAILABILITY

The City is located 1.5 hours away from our Corporate Office and within 30 minutes from our Regional Office. Our sub-consultants are also located within 30 minutes of the City. Coastal Systems ensures its responsiveness and availability for its clientele, and will do the same for the City. The team will be available for meetings at the City's convenience, whether they be in-person or via teleconference/video-conference. The team requests for at least 3 days advance notice for project-related meetings, with less notice should a project require urgent attention. The team is available via phone, e-mail and video-conferencing during office hours and via phone and e-mail during non-office hours. Our Project Managers provide their cell phone numbers to their clients to ensure an open line of communication.

Section C
Projects for Similar Services

PROJECTS WITH SIMILAR SERVICES

ENGINEERING

RICKENBACKER CAUSEWAY RECREATIONAL AREA, MIAMI-DADE COUNTY, FLORIDA
CLIENT/OWNER: Miami-Dade County Public Works
ADDRESS: 111 N.W. First Street, Miami FL 33128
CONTACT: Ms. Svetlana Moorey, P.E.
EMAIL: lana @miamigov.com
P: (305) 375-2863 **F:** (305) 679-7738
ADDRESS: 111 N.W. First Street, Miami FL 33128
PROJECT DATE: 2009-2011
PROJECT STATUS: Completed

The Rickenbacker Causeway connects Key Biscayne to downtown Miami, crossing historic Virginia Key and the artificial Hobie Island. The Causeway serves as an important transportation corridor, but also has approximately 2.5-miles of recreational shoreline. Coastal engineering analyses were completed to determine winds, waves and sediment transport along the Project shoreline. Designs were developed for shoreline stabilization including rock revetment, mangrove planter and beach nourishment stabilization.

The beach nourishment was designed to avoid impacts to sensitive seagrass beds immediately adjacent to the Project shoreline. Sand sources were evaluated based on geotechnical analyses to determine the most economical and compatible beach fill. The beach restoration project includes upland paving and grading as well as stormwater management improvements. Field investigations were completed including hydrographic surveying and beach profiling. Marine resource (seagrass) surveys were conducted, as well as upland native and exotic vegetation mapping. The field data was utilized to design a beach restoration project that included upland paving and grading as well as stormwater management improvements. The $6M project combined an extensive upland exotic vegetation removal effort with replanting of native salt-tolerant species. In addition, mangrove planters were designed to enhance the shoreline and protect existing mangrove vegetation.

Environmental regulatory permits for the project were processed through Miami-Dade Division of Environmental Resources Management (DERM), the Florida Department of Environmental Protection (DEP) and the U.S. Army Corps of Engineers (Corps). Coastal Systems prepared construction plans and specifications in conjunction with funding constraints and prioritized project elements established by the County. Construction was completed in 2010.

KENNEDY PARK SHORELINE STABILIZATION & DOCK REPLACEMENT, FL
CLIENT/OWNER: City of Miami
ADDRESS: 444 SW 2nd Ave. 8th Floor, Miami, FL 33130
CONTACT: Mr. Carlos A. Vaszquez
EMAIL: cavasquez@miamigov.com
P: (305) 416-1206 **F:** (305) 416-2153
ADDRESS: 2400 S. Bayshore Drive, Miami, FL
PROJECT DATE: 2010-2012
PROJECT STATUS: Completed

Coastal Systems evaluated the existing shoreline condition and designed improvements for Kennedy Park, a 4.12 acre park fronting Biscayne Bay. The improvements along the 1,640 linear foot shoreline included removal of debris, accumulated sediment, and exotic/invasive plant species. Shoreline stabilization with

native species, including mangroves, was incorporated where feasible and lateral branch trimming of mangroves was specified to improve views of Biscayne Bay. Coastal Systems also designed a replacement for the dinghy dock used to support sailing regattas.

Coastal Systems' biologists conducted the mangrove assessment and performed the seagrass delineation, while our engineers designed the shoreline stabilization improvements and dock replacement. In house project managers secured permits for the shoreline work, as well as the dock replacement. The permitting process was complicated by the presence of seagrass beds, mangroves, and shallow water depths. Coastal Systems designed the replacement dock so it minimized seagrass and mangrove impacts, while taking advantage of existing bathymetry.

Environmental permits from the U.S. Army Corps of Engineers, Florida Department of Environmental Protection, and Miami-Dade County DERM were obtained in 2012. Coastal Systems also assisted the City of Miami with processing the Florida Inland Navigation District (FIND) grant for project construction.

NORTH BAY VILLAGE, FLORIDA
CLIENT/OWNER: North Bay Village
ADDRESS: 1666 Kennedy Causeway, Suite 300, North Bay Village, FL 33141
CONTACT: Mr. Frank Rollason
EMAIL: frollason@nbvillage.com
P: (305) 756-7171 Ext. 21
ADDRESS: 1415 NE 79th Street Causeway to 1755 79th Street Causeway, North Bay Village, FL 33141
PROJECT DATE: 2014-Ongoing
PROJECT STATUS: Professional Services Ongoing

Coastal Systems International, Inc. is providing investigational survey services, engineering consulting services, conceptual design services and environmental permitting services as part of North Bay Village's developmental plan for a boardwalk and boat slips in the Biscayne Bay Aquatic Preserve. The overwater boardwalk will extend from 1415 NE 79th Street Causeway to 1755 79th Street Causeway along the north side of North Bay Village, and will provide for transient slips open to the public.

Coastal Systems performed and completed a hydrographic survey, biological resource survey, a base maps to help site the project in a manner that minimizes impacts to coral and seagrass habitat. As part of the engineering scope of work, Coastal Systems will be preparing the construction plans and specifications, structural calculations, and bidding assistance relative to the boardwalk and docks.

Coastal Systems is providing permitting services that includes applications, negotiating mitigation, processing permits, and securing authorization for sovereign submerged lands use for this project. Coastal Systems is permitting the project through Miami-Dade County Regulatory and Economic Resources (RER), the Florida Department of Environmental Protection (FDEP), and the U.S. Army Corps of Engineers (Corps).

HAULOVER MARINE CENTER, MIAMI-DADE COUNTY, FLORIDA
CLIENT/OWNER: Westrec Companies
ADDRESS: 251 Calming Water Trail, Dalls, GA 30132
CONTACT: Mr. Narvel Lassiter
EMAIL: nlassiter@westrec.com
P: (678) 574-6033 **F:** (770) 529-4792
ADDRESS: 15600 Collins Avenue, Miami Beach 33154
PROJECT DATE: 2013-2015
PROJECT STATUS: Completed

Coastal Systems planned and designed the site improvements to the redevelopment of the Haulover Marine Center in North Miami Beach, Florida. The redevelopment consists of a new marina facility along with approximately 400 feet of bulkhead with a combination of temporary wet and dry slips. The dry storage building will provide a total capacity of approximately 500 dry slips. Additional facilities will include marina offices, store and service areas. Coastal Systems provided the following professional services for the project

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HILLSBORO INLET CHANNEL IMPROVEMENTS, FLORIDA
ADDRESS: 907 Hillsboro Mile, Hillsboro Beach, Florida 33062
CONTACT: Chairman Jack Holland
EMAIL: papajackbc@aol.com
P: (561) 479-5627
ADDRESS: 907 Hillsboro Mile, Hillsboro Beach, Florida 33062
PROJECT DATE: 2003- Ongoing
PROJECT STATUS: Professional Services Ongoing

Coastal Systems evaluated the coastal processes influencing the inlet and developed a design for a channel deepening project at Hillsboro Inlet. The inlet located in northern Broward County, Florida. The project involved the dredging of 300,000 cubic yards of material, a third of which consists of rock. The design improves navigation and minimizes impacts of longshore sand movement by allowing the channel to serve as a sediment trap, collecting southerly-moving material. Sand deposited in the channel will be mechanically bypassed using the district-owned hydraulic dredge. The fan-shaped inlet improvements were incorporated into the inlet management plan prepared by Coastal Systems and approved by the DEP in 1997.

Environmental permits were processed for Broward County Department of Planning and Environmental Protection (DPEP), the State of Florida Department of Environmental Protection (DEP) and the U.S. Corps of Engineers. Coastal Systems also secured funding for the Project from the Florida Inland Navigation District (FIND) and DEP. The channel improvements design incorporated permitted impacts to nearshore hardbottom, and a 1.6-acre artificial reef was designed as mitigation.

Dredging construction documents were prepared using information collected from jet probes, hydrographic and marine resource surveys, and offshore disposal site video mapping. Dredging specifications were prepared and construction was completed in December 2003. Construction administration services were provided to ensure environmental permit compliance.

MARINE/COASTAL ENGINEERING

CURRIE PARK STAGING DOCK, PALM BEACH COUNTY, FLORIDA
ADDRESS: 401 Clematis Greet, 4th FL, West Palm Beach, FL
CONTACT: Mr. Raul Mercado
EMAIL: rmercado@wpb.org
P: (561) 494-1088 **F:** (561) 494-1116
ADDRESS:
PROJECT DATE: 2014-Ongoing
PROJECT STATUS: Ongoing

Coastal Systems is currently providing engineering and environmental consulting services for the City of West Palm Beach. Coastal Systems has already conducted biological and hydrographic surveys. The project is in the final phase of the design process for the staging dock dredging designs. In conjunction with the staging dock, the firm is working on additional services for the construction design for the deteriorated boat ramp.

As part of the environmental consulting services, Coastal Systems submitted a Joint Statewide Environmental Resource Permit (SWERP) Application to the Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers, and to the Florida Fish and Wildlife Conservation Commission (FWC) for approval of Florida Uniform Waterway Markers.

MUSEUM PARK LARGE VESSEL MOORING FACILITY
ADDRESS: 444 SW 2nd Ave., 8th Floor, Miami, FL 33130
CONTACT: Mr. John De Pazos
EMAIL: jdepazos@miamigov.com
P: (305) 416-1094 **F:** (305) 416-1019
ADDRESS: 1075 Biscayne Boulevard, Miami, FL 33132
PROJECT DATE: 2006-2011
PROJECT STATUS: Completed

Museum Park is planned by the City of Miami as a waterfront revitalization of the 40-acre park in downtown Miami on Biscayne Bay. Coastal Systems is part of the multi-disciplined consultant team led by Cooper Robertson and Partners to design approximately 24-acres of Park space. The $45M Park will incorporate a waterfront promenade and baywalk along with fountain, terrace, and plaza elements.

The Park program includes a large vessel mooring facility within the FEC slip to accommodate a variety of vessels including tall ships up to 350 feet long. One of the design vessels for the facility is the USCG *Eagle*, which is a 295-foot long tall ship. The mooring facility consists of 16 dolphin structures that provide approximately 750 linear feet of berthing along the existing bulkhead. Coastal Systems performed a ship mooring analysis to evaluate a variety of vessels in conjunction with wind, tidal current, wave, and berthing loads. Mooring hardware was specified, and fender systems engineered for the facility. The dolphins are supported by 65-foot long, 24-inch square concrete piling. To avoid excess noise and vibrations along the adjacent bulkhead structure from conventional pile driving operations, the piles were installed by drilling a 36-inch diameter preformed hole with a continuous flight auger to the design pile tip elevation. The hole was then grouted in a similar manner as an augercast pile, and the 24-inch precast pile inserted. A diesel hammer was then utilized at a low energy rating to drive the piles in the grouted hole to the required tip elevation. This installation approach provided significantly higher tensile and lateral

capacity for the pile-supported structure. A 10' x 10' x 4' reinforced concrete cap was designed for the fender system and the bollard. Coastal Systems worked with the Project architect to specify the architectural finishes on the structures that are coordinated with the adjacent Baywalk and other Park elements.

Environmental permits were processed for the dolphin structures through the U. S. Army Corps of Engineers, South Florida Water Management District and Miami Dade Department of Environmental Resource Management. The permits were processed to provide the City with flexibility to accommodate two 350-foot long vessels, or up to a maximum of seven 100-foot long vessels in accordance with the County's Manatee Protection Plan restrictions.

Construction plans and specifications were prepared, and Coastal Systems assisted the County in the bidding process. Construction administration services were provided to ensure the facility was constructed in conformance with the plans and specifications.

MUNYON ISLAND DOCKING FACILITY, PALM BEACH COUNTY, FLORIDA
CLIENT/OWNER: Florida Department of Environmental Protection (FDEP)
ADDRESS: 3900 Commonwealth Boulevard, 155/160, Tallahassee, FL 32399
CONTACT: Mr. Fred Hand
EMAIL: fred.hand@dep.state.fl.us
P: (850) 245-2684 **F:** (850) 245-2612
ADDRESS: 10900 Jack Nicklaus Dr., Munyon Island, North Palm Beach, FL 33408
PROJECT DATE: 2007-2012
PROJECT STATUS: Completed

Coastal Systems International Inc. designed the docking facility planned for the John D. MacArthur Beach State Park on Munyon Island in Palm Beach County. A preliminary design report was prepared for Palm Beach County based on hydrographic and marine resource surveys conducted by Coastal Systems. Three alternatives including different dock layouts and wave attenuation structures were evaluated based on construction budgets. Coastal Systems was then retained by DEP (Department of Environmental Protection) Parks to complete the final engineering design and prepare construction documents for the selected option. The final design consisted of a pile-crib breakwater for wave attenuation attached to the shore on the west side of the island with a 20-slip floating dock facility. The pile crib breakwater serves three purposes; 1) approach pier for public access to the floating docks, and 2) wave attenuation for boat wakes and 3) habitat for marine resources.

A statistical analysis was conducted to provide wave characteristics (height, period) for the design of breakwater with respect to the selected 25-year coastal storm return period. Wave forces were calculated for the structural design of the piles, caps, and slabs that support the pier structure. Wave transmission studies were also conducted to specify characteristics and geometry of the rock to be placed in the crib for optimum wave attenuation for the docking facility. A geotechnical investigation was conducted for the design of the pile-supported structures. Designs and details for structural precast pile, caps, and slabs were developed due to the remote island construction. Fiberglass grating was specified to span concrete slabs along the pile-crib structure to provide a composite design, to relieve uplift pressures from wave action during coastal storms, and to provide light penetration for sea grass. The design provided ADA structures, as well as a slip for landing craft to transport maintenance vehicles on and off of the island.

Coastal Systems has been retained by the Florida DEP to perform pre-construction seagrass surveys and to perform monitoring and reporting of the adjacent seagrass beds for five years as required by the

environmental permits issued by the South Florida Water Management District and the U.S. Army Corps of Engineers.

DINNER KEY MARINA MAINTENANCE DREDGING AND MOORING FIELD, FLORIDA
CLIENT/OWNER: City of Miami
ADDRESS: 444 S. W. 2nd Avenue, 8th FL, Miami FL 33130
CONTACT: Mr. Stephen Bogner
EMAIL: sbogner@ci.miami.fl.us
P: (305) 579-6950 **F:** (305) 579-6952
ADDRESS: 3400 Pan American Dr. Miami, FL 33133
PROJECT DATE: 02/2008- 11/2009
PROJECT STATUS: Completed

Coastal Systems was retained by the City of Miami to provide consulting engineering and environmental permitting services for one of the largest mooring fields in Florida, the Dinner Key Managed Mooring Facility. Due to water quality impacts and loss of potential habitat, Coastal Systems planned and designed the mitigation required for the Dinner Key Marina Maintenance Dredging Project. Coastal Systems negotiated the mitigation requirements to include 1,020 cubic yards of limestone boulders, with the majority of the mitigation placed along 490 linear feet of shoreline at Spoil Island "B" and along 500 linear feet of shoreline at Spoil Island "D." Both islands are located in Biscayne Bay adjacent to Dinner Key Marina. Coastal Systems also prepared maps of derelict vessels and other underwater debris based on the survey data and compiled information provided by the City. Environmental and waterway marker permits were processed with the following Agencies:

- Florida Department of Environmental Protection (DEP)
- U.S. Army Corps of Engineers
- Miami-Dade County Department of Environmental Resource Management (DERM) Florida Fish and Wildlife Conservation Commission (FWC) – Uniform Waterway Marker Permits for mooring balls and perimeter buoys
- U.S. Coast Guard – perimeter buoy permits through the Aids to Navigation
- Construction administration services were provided to ensure the project was constructed in accordance with the plans, specifications and environmental permits.

Coastal Systems also provided civil services for the Dinner Key Marina Sewage Pump-out project. The scope included as-built conditions for the sewage pump-out system, design of a new system with an increased number of docks, construction documents and bidding assistance. Construction administration services will also be provided.

FORT ZACHARY TAYLOR STATE PARK, KEY WEST, FLORIDA
CLIENT/OWNER: Florida Department of Environmental Protection
ADDRESS: 3900 Commonwealth Boulevard, 155/160, Tallahassee, FL 32399
CONTACT: Mr. Fred Hand
EMAIL: fred.hand@dep.state.fl.us
P: (850) 245-2684 **F:** (850) 245-2612
ADDRESS: 601 Howard England Way, Key West, FL 33040
PROJECT DATE: 2014-2015
PROJECT STATUS: Professional Services Ongoing

Coastal Systems originally completed the field studies, numerical modeling and coastal engineering design of the terminal groin and offshore detached breakwaters in the mid-1990's, along with a beach nourishment

and breakwater maintenance project in 2001, for the beach at Fort Zachary Taylor State Park in Key West. A truck haul beach nourishment project for the Park was designed and permit processing began in early 2005 after the hurricanes of 2004 to restore the recreational beach for Park patrons. Coastal Systems completed an upland sand source study as part of this project that was referenced in the Florida Department of Environmental Protection (DEP) Beaches 2008 Strategic Management Plan for the Florida Keys.

Coastal Systems worked closely with the Florida DEP and the U.S. Army Corps of Engineers to design a project that would enhance the beach but also minimize impacts to upland vegetation. Environmental permits were processed and construction commenced in 2007. The 3,600 cubic yard beach nourishment was constructed with truck haul methods using sand from the Ortona Mine in central Florida.

Coastal Systems provided construction administration and permit close-out services. Coastal Systems is currently processing environmental permits from the Florida DEP and the U.S. Army Corps of Engineers for the proposed breakwater and terminal groin repairs.

CIVIL

BEACHWALK II, MIAMI BEACH, FLORIDA
CLIENT/OWNER: City of Miami Beach
ADDRESS: 1700 Convention Center Drive, Miami Beach, Fl 33139
CONTACT: Ms. Elizabeth Wheaton
EMAIL: ElizabethWheaton@miamibeachfl.gov
P: (305) 673-7080 x 6121 **F:** (305) 394-4770
ADDRESS: 1700 Convention Center Drive, Miami Beach, Fl 33139
PROJECT DATE: 2014 (Phase 1)
PROJECT STATUS: Professional Services Ongoing

A continuation of the City's original Beachwalk project, the Beachwalk II is planned to connect Lummus Park to the pedestrian path at the Continuum properties, south of South Pointe Drive. The path encompasses 5 blocks, connecting 3 vital parks within the City's South of Fifth neighborhood. The $4M Beachwalk path will serve to energize the coastal development within the South of Fifth area while also formalizing the existing hardpack area between 5th Street and South Pointe Drive by encompassing:

- Three (3) open-space parks (Lummus, Marjory Stoneman Douglas, and South Pointe)
- The South of Fifth neighborhood
- Coastal dune improvements and controlled beach access points

Coastal Systems is responsible for the planning, design, and regulatory permitting for the project, along with AECOM, a landscape architecture and urban planning sub-consultant. Preliminary designs were completed with renderings for public meetings. The project has been phased to account for adjacent property owners in the northern section of the project. Construction of Phase 1 was completed in October of 2014, and CCCL permitting for Phase 2 is progressing.

MUSEUM PARK, MIAMI, FLORIDA
CLIENT/OWNER: City of Miami
ADDRESS: 444 SW 2nd Ave., 8th Floor, Miami, FL 33130
CONTACT: Mr. John De Pazos
EMAIL: jdepazos@miamigov.com
P: (305) 416-1094 **F:** (305) 416-1019
ADDRESS: Museum Park, 1075 Biscayne Boulevard, Miami, FL 33132
PROJECT DATE: 2011-2015
PROJECT STATUS: Professional Services Ongoing

Museum Park was planned by the City of Miami as a waterfront revitalization of the 40-acre park in the heart of downtown on Biscayne Bay. Coastal Systems was part of the multi-disciplined consultant team led by Cooper Robertson and Partners to design approximately 24 acres of Park space. The $9.5M Park will incorporate a waterfront promenade and Baywalk along with fountain, terrace, and plaza elements. The Park was developed in phases. The large vessel mooring facility, designed and permitted by Coastal Systems within the existing basin adjacent to the American Airlines Arena, is complete.

The City divided the park into further phases, which were outlined to implement portions of the park incorporated into the master plan, and then provide open green space for future park improvements. The Phases were outlined as 1)Utility services for the museums and park along with the entrance at 11th Street; 2) Baywalk and park green space, and 3)Promenade – adjacent to the proposed art and science museums. Coastal Systems was retained by the City to be the prime consultant for the phased-approach to the park approach, and managed sub-consultants EE & G for environmental remediation, Savino Miller for Landscape Architecture, and Basulto Associates for lighting. Coastal Systems compiled the construction documents and assisted the City in the bid process, and construction administration services were provided that included on-site Resident Project Representative (RPR) services.

Coastal Systems provided civil engineering and environmental permitting services for the park based on the approved master plan and park program. The stormwater management system consists of a combination of exfiltration trenches, retention area within the park, deep injection drainage wells and outfalls to the bay. The engineering design required close coordination with the design team of planners, architects and landscape architects to meet the design objectives and program for the park. The stormwater system was designed to meet the stringent guidelines for treating stormwater runoff on-site for this waterfront park that is adjacent to the environmentally sensitive Biscayne Bay. An Environmental Resource Permit (ERP) was processed through the Miami-Dade County Department of Environmental Resource Management (DERM) for the stormwater management system. Coastal Systems also prepared and processed the NPDES and FDOT Permits for the project.

MIRACLE MILE/GIRALDA STREETSCAPE
CLIENT/OWNER: Cooper Robertson and Partners/City of Coral Gables
ADDRESS: 123 William Street, New York, NY 10038
CONTACT: Mr. Donald Clinton
EMAIL: dclinton@cooperrobertson.com
P: (212) 547-1717 EXT. 221
ADDRESS: Miracle Mile/Giralda Ave., Coral Gables
PROJECT DATE: 2015-Ongoing
PROJECT STATUS: Ongoing

The City of Coral Gables aims to transform the public realm in the downtown area of Miracle Mile and Giralda Avenue and create a civic promenade that will become the focal point for the region. When

completed, the downtown will be more visitor-friendly and better poised for economic growth. The project will protect and leverage the historical assets of the City's downtown, while promoting quality retail and dining opportunities. The project will include installing extensive gardens and landscaping, setting the stage for the incorporation of public art, providing decorative street lighting and way finding. The project limits include Miracle Mile beginning at Douglas Road (SW 37th Avenue) on the East and ending at Le Jeune Road (SW 42nd Avenue) on the West as well as on Giralda Avenue from Galiano Street on the East to Ponce de Leon Boulevard on the West. A separate phase will also include improvements to Biltmore Way and Merrick Park in front of City Hall.

Coastal Systems is providing civil engineering design services relative to the Schematic Design, Design Development, Construction Documents and Permitting Services for the proposed Miracle Mile and Giralda Avenue Streetscape Project. The total area of the Project is approximately 11.55 acres, including Miracle Mile (10.16 acres), and Giralda Avenue (1.39 acres).

Coastal Systems are incorporating existing bus terminals into its site civil design. Two existing bus terminals are located at each end of Miracle Mile. Both of these locations are inside the great entrance plazas, Lejeune Road and Douglas Road. These plazas are designed to be shaded with trees and benches to provide comfort to bus passengers. These plazas are also designed to attract and embrace pedestrians. The design involves elegant stone pavement, floral landscape spaces and natural coral stone water features.

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600 ALTON ROAD, CITY OF MIAMI BEACH, FL
CLIENT/OWNER: Crescent Heights
ADDRESS: 2200 Biscayne Boulevard, Miami FL 33137
CONTACT: Mr. Ian Kramer
EMAIL: ikramer@crescentheights.com
P: (305) 374-5700 x 7372
ADDRESS: 600 Alton Road, Miami Beach, FL
PROJECT DATE: N/A
PROJECT STATUS: Professional Services Ongoing

Coastal Systems provided civil engineering design and coordination for the proposed site development located at 600 Alton Road within the City of Miami Beach. The proposed site development consisted of two city blocks retail plazas covering the entire ground floor, elevating the roads, sidewalks, and widening the narrow Public Right of Way with sidewalk easements. The conceptual Right of Way improvement has been approved by the City of Miami Beach Public Works to be constructed together with the drainage improvement and FDOT Alton Road Improvements.

Coastal Systems provided site civil engineering services and coordination with the design team to establish Finished Floor Elevation of the retail space on the Ground Floor for the Planning Board Review process, prepared the site civil portion of the Basis of Design Report (BODR), prepared a proposed utility demand load for water and sewer based on the architectural site plan, met with the City of Miami Beach Public Works Department to review the capacity of the City's infrastructure and determined if upgrades were required.

Coastal Systems prepared a Master Site Civil Plan to illustrate the Utilities services points of connections with the existing utilities and any upgrades as required by the City to service the Project. The Master Plan also illustrated the necessary improvements within the City of Miami Beach and FDOT Right of Way adjacent to the project site. Coastal Systems produced an extended conceptual design associated with elevation of the West Ave. street and sidewalks to approximate elevation +5.25 to 5.5', including definition

of the potential north and west extent of required harmonization and associated potential modifications to existing driveways and other features adjacent to the sidewalk.
The project team reviewed several locations with the Miami-Dade County Traffic Division (MDCTD) to properly relocate an existing bus stop to avoid traffic conflicts and to provide the best service to the neighbors and the visitors. Coastal Systems participated in the preliminary design review with the MDCTD. The 600 Alton open plaza is being designed with electronic information boards to display the bus schedules and a countdown to arrival. Open clear spaces on sidewalks are proposed adjacent to the bus stop, along with shade with canopy landscape, and seating areas.

CORAL GABLES AUTO VAULT, CORAL GABLES, FL
CLIENT/OWNER: Current Builders
ADDRESS: 2251 Blount Road Pompano Beach, FL 33069
CONTACT: Aaron Butress
EMAIL: AButress@currentbuilders.net
P: (954) 977-4211 **F:** 954-978-4658
ADDRESS: Bird Road and SW 38th Court, Miami
PROJECT DATE: 2015-Ongoing
PROJECT STATUS: Ongoing

Coastal Systems is currently working on 2 separate sites that include a dealership building and 2 parking lots that combine a total of 1.13 acres. As part of the services, Coastal Systems developed and design plans for the paving, grading and drainage for the site. The drainage and site grading plan identified the grades, slopes, and flow characteristics of the stormwater management system and shows the location of drainage wells, exfiltration trenches, and piping.

Our engineering team developed and designed the domestic, fire and irrigation water and sanitary sewer service connections for the project. The water and sewer service plans illustrate the size, slopes, and details of the sanitary sewer system, location of water distribution points, and location of fire lines to service the structure within the Project site.

NATURAL RESOURCES/ENVIRONMENTAL

HOLLYWOOD BEACH MANAGEMENT, BROWARD COUNTY, FLORIDA
CLIENT/OWNER: City of Hollywood, Hollywood Community Redevelopment Agency
ADDRESS: 330 N. Federal Highway, FL 33020
CONTACT: Commissioner Carmen McGarry
EMAIL: cmcgarry@townofhillsborobeach.com
P: (954) 424-2932
ADDRESS: 330 N. Federal Highway, FL 33020
PROJECT DATE: 2012
PROJECT STATUS: Professional Services Ongoing

Coastal Systems has provided specialized strategic coastal consulting services to the City of Hollywood and the Hollywood Beach Community Redevelopment Agency relative to a variety of beach management initiatives over the past several years.

Coastal Systems has coordinated with the City in the context of other regional beach management initiatives to evaluate potential interim and supplemental means of stabilizing the City's beaches. The 2005 Broward County Segment III beach renourishment project provided restoration of the City's beaches; however, in some areas the sand placed under that project was substantially lost through erosion. As an interim beach management measure, Coastal Systems designed, permitted, and oversaw construction of a truck haul nourishment project to temporarily stabilize two eroded segments of the beach. Coastal Systems also coordinated the submittal of state beach funding applications. Coastal Systems secured permits for the beach nourishment project that allow for multiple renourishment events using an upland source of sand over a ten year period of time.

Coastal Systems also assisted the City with development of a Marine Turtle Protection Ordinance, which went into effect in 2011. Coastal Systems also assisted the BCRA in securing state coastal construction permits to install Mobi Mats for Americans with Disabilities Act (ADA) compliant access out onto the recreational beach and also provided the City with an initial framework for evaluating the feasibility of a public Intracoastal Boardwalk. Coastal Systems evaluated current regulatory and physical conditions and recommended planning approaches to address coastal storm and flood vulnerability of the oceanfront community as part of the updated BCRA Master Plan that was issued in 2007.

Coastal Systems assisted the City of Hollywood with environmental permitting for the restoration and improvements to the historic oceanfront Broadwalk located between Sherman and Jefferson Street. At a length of approximately 11,000 feet, the project replaced the 22-foot-wide asphalt material of the existing Broadwalk with decorative pavers-on-sand. Coastal Systems worked closely with the Florida Department of Environmental Protection (DEP) Bureau of Beaches and Coastal Systems, as well as the Florida Fish and Wildlife Conservation Commission and the City of Hollywood in order to secure the required state and local approvals.

HILLSBORO/DEERFIELD NOURISHMENT, HILLSBORO BEACH, FLORIDA
CLIENT/OWNER: Town of Hillsboro Beach
ADDRESS: 1210 Hillsboro Mile, Hillsboro Beach, FL 33062
CONTACT: Commissioner Carmen McGarry
EMAIL: Jones-Rich@ monroecounty-fl. gov
P: (954) 424-2932
ADDRESS: 1210 Hillsboro Mile, Hillsboro Beach, FL 33062
PROJECT DATE: 2015
PROJECT STATUS: Completed

Coastal Systems has provided continuing beach management consulting services since 1996 for the Town of Hillsboro Beach. The 2011 Hillsboro/Deerfield beach nourishment project that was designed and permitted by Coastal Systems included approximately 375,000 cy of beach compatible fill placed on 7,175 ft. of shoreline in the northern mile of Hillsboro Beach and southern Deerfield Beach. Environmental permits were processed through the U.S. Army Corps of Engineers, Florida Department of Environmental Protection, and Broward County Environmental Protection and Growth Management Department. The following is a brief outline of some of the task orders assigned to Coastal Systems:

- *1997 Town of Hillsboro Beach Long Range Beach Management Plan* – developed the beach management plan for the Town. This plan outlined options for beach nourishment including offshore and truck haul sources of sand.
- *1998 Hillsboro/Deerfield Beach Nourishment* – designed, permitted and managed construction of the first beach nourishment in the Town and Broward County Segment I beaches since the early 1970's. The

550,000 cubic yard beach nourishment was completed within one year after permit applications were filed. Coastal Systems assisted the Town in the joint project with Deerfield Beach and secured 50% funding from the Florida Department of Environmental Protection (DEP).

- *1998 Beach Project Monitoring* – conducted the required physical and biological monitoring of the beach project for four years post-construction.
- *2002 Boca Inlet Technical Advisory Committee (TAC)* – represented the Town on this technical committee facilitated by the Florida DEP.
- *2004 & 2005 Hurricane Impact Assessments* – consulted with the Town to assess hurricane impacts to the beaches within the Town. In 2004, Coastal Systems secured approximately $3.1M in beach nourishment funding from FEMA. This funding was utilized for the design/permitting and construction of the 2011 beach nourishment project.
- *Broward County Segment III* – provided coastal engineering consulting on behalf of the Town relative to the use of borrow areas offshore of Hillsboro and Deerfield Beach by the County for the Segment III (south of Port Everglades) beach restoration project constructed by the County in 2005/2006.
- *2007 Truck Haul Nourishment* – assisted the Town with this "Project of Opportunity" to utilize excavated sand, in accordance with the Town's ordinance, for a 5,000 cy maintenance project in the northern section of the Town. Coastal Systems designed, permitted, and did construction administration of the project.
- *2012 Coastal Structures Study* – conducted numerical modeling of coastal structural alternatives to address the downdrift erosion from the groin field in Deerfield Beach. Alternatives were addressed in terms of coastal engineering performance and environmental permit feasibility. A series of submerged breakwaters were determined to be feasible for the transition downdrift of the groin field.
- *2014 Beach Project Monitoring* – conducted the required physical and biological monitoring of the beach project for 3 years post-construction.

MONROE COUNTY MOORING FIELD, MONROE COUNTY, FL
CLIENT/OWNER: Monroe County, Florida Keys, Florida
ADDRESS: 2798 Overseas Highway, Marathon, FL 33050
CONTACT: Mr. Richard Jones
EMAIL: Jones-Rich@ monroecounty-fl. gov
P: (305) 289-2805
ADDRESS: 2798 Overseas Highway, Marathon, FL 33050
PROJECT DATE: 2014 Completed
PROJECT STATUS: Professional Services Ongoing

In 2013 Monroe County (County) commissioned Coastal Systems International (Coastal Systems) to conduct a Feasibility Study to evaluate siting and development of new mooring fields in the Florida Keys. The goals of this Study were to examine the existing unmanage anchorages at Jewfish Creek, Buttonwood Sound, and Boca Chica Basin; identify potential shore side facilities; develop conceptual mooring field designs for all three sites; and determine the optimal mooring field location. Information was obtained via (1) discussions with County staff, (2) a background/literature review, and (3) cursory field assessments of water depths, marine resources, site utilization, and potential shore side access. This information was utilized to rank the potential sites, develop conceptual mooring field designs, and recommend next steps towards implementation. The Feasibility Report summarizes the permitting process including site specific challenges, identifies grant funding opportunities, provides recommendations for engineering/design schedule and contracting, and presents recommended next steps.

Services provided included the following:

- Hydrographic Survey: conducted initial surveys of the three anchorage areas and existing navigation channels to assess water depths. This information was utilized to site the mooring fields and prepare conceptual designs.
- Marine Resource Survey: conducted seagrass surveys in the three anchorage areas to assist with the siting and development of conceptual designs for each of the mooring fields.

- Monroe County Mooring Field Feasibility Report, May 2014: prepared a comprehensive feasibility report, which included the results from the above surveys at Jewfish Creek, Buttonwood Sound, and Boca Chica Basin. The report presents conceptual mooring field designs for each site and details the regulatory challenges associated with environmental permitting at each site. The report also discusses the process for implementation.

- Presentations: Coastal Systems presented the preliminary findings from the Monroe County Mooring Field Feasibility Study to the public during the Marine and Port Advisory Committee Meeting in July 2013. A presentation on the Final Report was made to the Board of County Commissioners in February 2014.

PORTMIAMI MONITORING, MIAMI, FL
CLIENT/OWNER: PortMiami
ADDRESS: 1015 North America Way, *FL* 33132
CONTACT: Ms. Becky Hope
EMAIL: bhope@miamidade.gov
P: (305) 347-4972
PROJECT DATE: 2016
PROJECT STATUS: Professional Services Ongoing

Coastal Systems is under contract with PortMiami for the biological monitoring services related to the Miami Harbor Deepening Project. The $205M channel deepening project is currently under construction and is one of the most important infrastructure projects in Florida. The dredge project will make PortMiami the only U.S. port south of Norfolk, Virginia, that can accommodate the new, mega cargo vessels that will pass through the expanded Panama Canal. The U.S. Army Corps of Engineers designed seagrass and artificial reef mitigation for the dredging project, and Coastal Systems will be conducting the biological monitoring services that will include: monitoring of corals after relocation; monitoring of both high and low relief mitigation sites to account for colonization and biological success; monitoring of the Julia Tuttle seagrass mitigation site for coalescence and biological success; potential secondary impact resource monitoring and mitigation design; monitoring of reef mitigation sites, which involves permanent transect establishment and monitoring, monitoring reports, a five year survey, and successful evaluation; monitoring of relocated *Scleractinian* and *Acropora* corals, which involves referencing colonies, relocation corals, monitoring reports and success evaluation; monitoring of seagrass mitigation site, which involves monitoring methods such as initial short shoot counts (to be averaged), seagrass edge, visual percent coverage, etc., and permanent transects after coalescent, monitoring reports and success evaluation; monitoring of resources adjacent to the channel, which involves a seagrass impact site if there are unanticipated impacts and monitoring reports, reef and hard bottom communities if there are unanticipated impacts and monitoring reports; and any other supportive services and ancillary tasks primary to the Deep Dredge Project Monitoring efforts.

Additionally, Coastal Systems designed and permitted mitigation for wharf improvements at PortMiami. Marine biologists assessed marine resources along the bulkhead across Area 2 and along the container Wharves I thru V that were to be strengthened for the deeper berth and larger gantry cranes.

Approximately 6,600 linear feet of bulkhead was mapped to identify typical species and resource density sufficient to evaluate typical mitigation requirements and options. Mitigation calculations were conducted, and approximately 7,000 cubic yards (cy) of limestone boulders were required. Coastal Systems designed the artificial reef within a permitted County artificial reef north of Julia Tuttle Causeway in Biscayne Bay. Marine biological diving operations were conducted to evaluate the substrate and the presence of resources within the required footprint, and jet probes were conducted to evaluate the soil conditions to support the proposed artificial reef.

Coastal Systems designed the artificial reef with Reef Balls, and an equivalent habitat ratio was negotiated with the agencies that required approximately 1,870 Reef Ball (ultra ball) concrete units. The artificial reef was designed, and Coastal Systems worked closely with the Reef Ball manufacturer to specify concrete bases as a marine foundation to support the Reef Balls and to minimize settlement in the soft underlying soil conditions within the permitted reef. Construction plans and specifications for the artificial reef were prepared in the format required by PortMiami for construction bidding purposes. Coastal Systems provided construction administration services to PortMiami as a subconsultant to CDM Smith. Assistance to PortMiami was provided in the bidding process, and construction administration was provided throughout the project. In addition, engineer-divers conducted representative diving investigations during construction. Coastal Systems also compiled the as-built multibeam survey data and other required documentation to close-out the environmental permits for the reef project.

Coastal Systems conducted hydrographic pre-dredge and marine resource surveys to plan and design 4,000 cy of maintenance dredging for the berth at Terminal H of PortMiami. Maintenance dredging was required to accommodate the design vessel, Bimini Superfast. This vessel is approximately 670 feet long and has a draft of 21.7 feet (stern) and 23.0 feet (bow), with the mid-area of the ship at 22.3 feet. The vessel will be calling on Terminal H for fast-ferry operations twice per day. Maintenance dredging in the berth and adjacent maneuvering area was required to provide sufficient vessel draft clearance for ferry operations. Coastal Systems performed marine resource and hydrographic surveys of the proposed dredge area. The firm managed geotechnical investigations to obtain core borings within the proposed dredge area, and reviewed maintenance dredging limits based on the depth of the rock layers. Coastal Systems assisted the client with environmental permit processing. Coastal Systems also prepared construction plans and provided construction administration services.

U.S. COAST GUARD SECTOR KEY WEST, KEY WEST, FL
CLIENT/OWNER: AGS Inc. / United States Coast Guard
ADDRESS: 5 Freelon Street, San Francisco, CA 94107
CONTACT: Mr. Dennis Wong
EMAIL: dennis.wong@agsinc.com
P: (415) 777-2166 x 12 **F:**
ADDRESS: 100 Trumbo Road, Key West, FL 33040
PROJECT DATE: 2015
PROJECT STATUS: Completed

Coastal Systems conducted a biological assessment of the bulkhead surrounding Pier D2 at USCG Sector Key West. Structures assessed included approximately 2,350 linear feet of bulkhead, the travel lift pier and adjacent mooring dolphins, and the small boat mooring piers – Pier 1, Pier 2, Pier 3, and Pier 4, including all surrounding dolphins. Additionally, a biological assessment of Key West "A" Range Front Light #14845 and Range Rear Light #14850, including a 50 foot radius of the structures, was conducted.

The survey documented the extent, species, and general density of corals, sponges, seagrasses, and other marine resources of significance growing within the USCG Sector Key West survey area. The survey was conducted in accordance with the National Marine Fisheries Service Recommendations for sampling *Halophila johnsonii* at a Project Site, as provided in the Johnson's Seagrass Recovery Plan. The biological resource survey was also conducted in accordance with Recommended Survey Protocol for *Acropora* spp. in Support of Section 7 Consultation. The survey ensured documentation of all federally listed species, specifically: Johnson's seagrass, Staghorn and Elkhorn coral, lobed star coral, knobby star coral, mountainous star coral, pillar coral, and rough cactus coral.

The listed species *A. cervicornis*, *A. palmata*, *M. ferox, D. cylindrus, O. franksi,* and *H. johnsonii*, all listed as threatened under the Endangered Species Act by the National Marine Fisheries Service (NMFS), were not observed on the seawalls, docking structures, or surrounding substrate along Pier D2 at USCG Sector Key West. None of the other 6 species of seagrasses were observed growing on the structures surveyed or along the substrate within 10 feet of the structures. The substrate surrounding the Pier D2 structures (seawalls and docks) consisted of silt and sand with occasional man made debris covered in silt. No marine resources were observed on the substrate within 10 feet of the structures surveyed. Two of the five recently listed species of coral *O. annularis* and *O. faveolata*, were observed on the seawalls and/or docks of Pier D2. The USCG Sector Key West Pier D2 is located in the Gulf of Mexico within the Florida Keys National Marine Sanctuary (Sanctuary). The Sanctuary is one of 14 Marine Protected Areas that protects significant marine resources including stony, soft, and hydrocorals. All species of hard coral, hydrocorals, and sea fans (species *Gorgonia ventalina* and *Gorgonia flabellum*) are prohibited from moving, collecting, taking, injuring, touching, breaking or disturbing throughout the Sanctuary.

STORMWATER MANAGEMENT/WATER RESOURCES

1826 COLLINS PARKING GARAGE
CLIENT/OWNER: Crescent Heights
ADDRESS: 2200 Biscayne Boulevard, Miami FL 33137
CONTACT: Mr. Ian Kramer
EMAIL: ikramer@crescentheights.com
P: (305) 374-5700 x 7372 **F:**
ADDRESS: 1826 Collins Ave. Miami Beach, FL
PROJECT DATE: 2011
PROJECT STATUS: Completed

Coastal Systems provided site/civil engineering services for the first automated parking system for public use in the City of Miami Beach. The automated system is from Boomerang Systems, and the garage was designed by the architectural firm, ADD Inc. The garage is nine levels with 139 parking spaces including one underground level on a 50-foot X 195-foot lot. A four-story glass retail component provides retail space as part of the garage.

Coastal Systems designed the stormwater management for the site that included a drainage well, and the plans were processed through Miami-Dade DERM. In addition, water and sanitary sewer services were designed for the site. Permitting services were provided for the Florida Department of Transportation (FDOT) Driveway onnection and Drainage Permits for the site, and permits were also processed through the City of Miami Beach Public Works Department.

AVIVA DEVELOPMENT
CLIENT/OWNER: Hines
ADDRESS: 2525 Ponce de Leon Blvd. Ste 1020, Coral Gables FL 33134
CONTACT: Mr. Matthew Barry
EMAIL: matthew.barry@hines.com
P: (305) 673-7080 x 6121 **F:** (305) 394-4770
ADDRESS: 3880 Bird Road, Miami, FL 33146
PROJECT DATE: 2013-2014
PROJECT STATUS: Completed

Located within the City of Miami, the Aviva Residential Development is located on Bird Road, between S.W. 38th Court and S.W. 39th Avenue. This 272-unit, apartment rental project features such amenities as a pool, gym and 8 story parking garage.

Coastal Systems provided site-civil engineering services for infrastructure development including all water, sewer, drainage, storm-water runoff, and permitting needed to initiate construction. Civil permitting services included securing environmental permits through the Florida Department of Transportation, Department of Environmental Protection, Miami-Dade County and Department of Regulatory and Economic Resources. In addition, Coastal Systems provided construction administration services.

BAYFRONT STREET ENDS, MIAMI BEACH, FL
CLIENT/OWNER: City of Miami Beach
ADDRESS: 1700 Convention Center Drive, Miami Beach, Fl 33139
CONTACT: Ms. Elizabeth Wheaton
EMAIL: ElizabethWheaton@miamibeachfl.gov
P: (305) 673-7080 x 6121 **F:** (305) 394-4770
ADDRESS: 10th Street, 14th Street, Lincoln Road and Island View Park
PROJECT DATE: 2006-2015
PROJECT STATUS: Completed

The City of Miami Beach secured funding from the Florida Inland Navigation District (FIND) to improve waterfront areas at South Shore Drive (Normandy Shores), 10th Street, 14th Street, Lincoln Road and Island View Park. Coastal Systems International, Inc. designed and permitted the bulkheads at all five locations. Steel sheet piling was specified to be installed directly in front of the existing bulkheads to meet federal and state exemption criteria. The cantilever design also avoided excavation behind the bulkhead alignment.

Environmental resource permits and stormwater drainage permits were processed with the U.S. Army Corps of Engineers, Florida Department of Environmental Protection and Miami-Dade County DERM. In addition, street end improvements were designed for South Shore Drive, 10th Street and Lincoln Road to improve upland access to the waterfront. Paving, grading, drainage lighting and landscape/hardscape improvements were also incorporated into the bulkhead improvements. Island View Park was constructed in 2008 and Lincoln Road was constructed in 2011.

These street end projects incorporated large outfalls with tideflex valves to prevent flooding of the stormwater management system in City streets during higher than normal rainfall events and tidal elevations. Furthermore, the outfall at 10th street is designed for a large force main to discharge runoff at a higher rate and overcome the tidal boundary conditions.

These street end projects incorporated large outfalls with tideflex valves to prevent flooding of the stormwater management system in City streets during higher than normal rainfall events and tidal

elevations. Furthermore, the outfall at 10th street is designed for a large force main to discharge runoff at a higher rate and overcome the tidal boundary conditions.

SOUNDSCAPE PARK, MIAMI BEACH, FL
CLIENT/OWNER: West 8 New York/City of Miami Beach
ADDRESS: 333 Hudson Street, Suite 905, New York, New York 10013 / 1700 Convention Center Drive, Miami Beach, Fl 33139
CONTACT: Ms Jamie Maslyn-Larson
EMAIL: j.maslyn@west8.com
P: (212) 285-0088 **F:** (212) 285-0028
ADDRESS: 400 17th Street, Miami Beach, FL 33139
PROJECT DATE: 20011 -
PROJECT STATUS: Completed

Miami Beach Soundscape is designed to reflect the spirit and vitality of Miami Beach; it is a unified expression of passive recreation, pleasure and culture. A space that supports a multitude of day and night uses, either under the shade of the trees or a starlit sky. Combined with New World Center's expansive 7,000 square-foot projection wall, the park established itself as a world-class destination, marrying music, design and landscape.

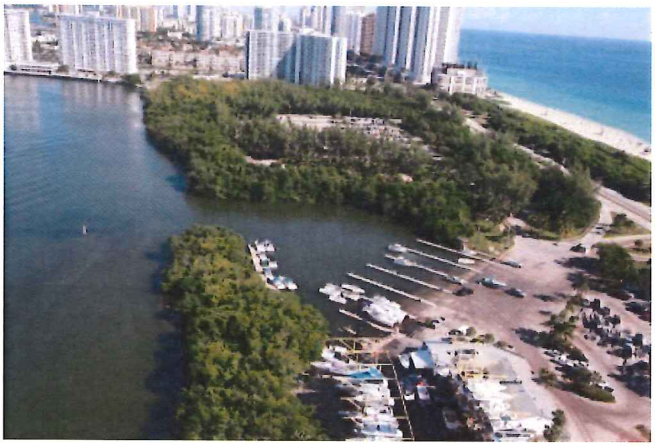
Built on the site of a former parking lot, Miami Beach Soundscape's $13M design modified the existing topography to create an unfolding, undulating sequence of spaces. Beyond the functional role of providing adequate drainage, the topography, combined with the circulation and planting, contributes significantly to the character of the space and is intended to create the feeling of a space larger than its actual size. Subtle undulation maximizes the sense of anticipation as one walks through the site, capturing views of the new World Center, ultimately arriving at the Mary and Howard Frank Plaza, and creates spaces for both intimate and large gatherings

Coastal Systems provided site/civil engineering services as part of the multi-disciplined design team led by the Dutch architectural firm, West 8. Coastal Systems completed the stormwater management design for the site, and processed the Class II permit through the Miami-Dade County Department of Environmental Resource Management (DERM). In addition, water and sanitary sewer services were design for the site. The site/civil design was coordinated with the adjacent right-of-way design for Lincoln Lane, 17th Street, and Washington Avenue; which included a bus stop relocation.

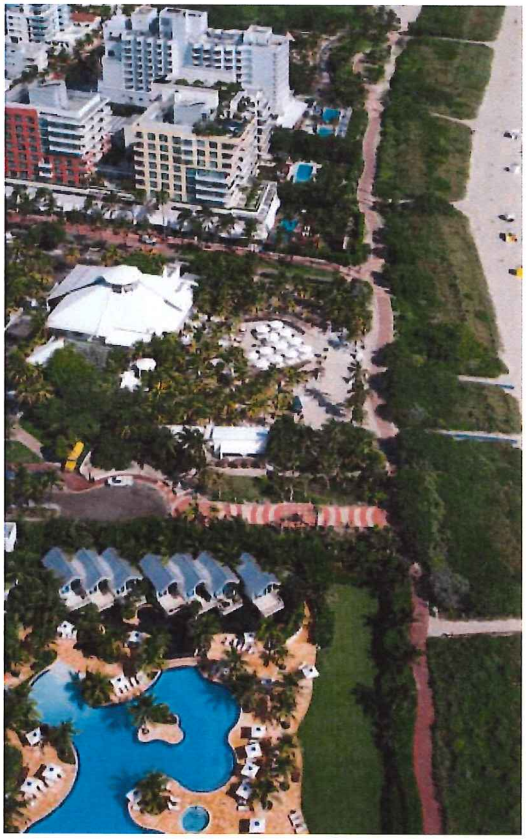
HAULOVER UTILITIES, MIAMI-DADE COUNTY, FLORIDA
CLIENT/OWNER: Miami-Dade PROS Department
ADDRESS: 360 South County Road, Palm Beach, Florida 33480
CONTACT: Ms. Lydia Salas
EMAIL: lydias@miamidade.gov
P: (305) 755-5456 **F:** (305) 755-7995
ADDRESS: 15600 Collins Avenue, Miami Beach 33154
PROJECT DATE: 2014-2015
PROJECT STATUS: Completed

Coastal Systems planned and designed the civil improvements to Haulover parking lot in North Miami Beach, Florida. Coastal Systems provided the following professional services for this project:

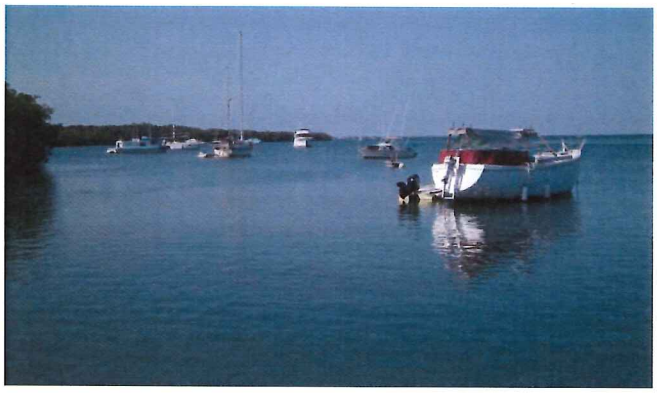
- Site/Civil Design for 9.4-acres including Paving, Grading and Stormwater Management
- Parking Lot Design for 680 spaces
- Water and Sanitary Sewer Design
- Utility Coordination with the City of North Miami Beach
- Construction Administration



Haulover Marine Center



Beachwalk



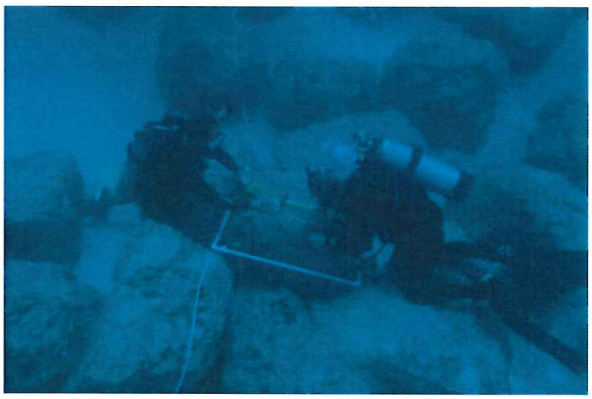
Martin County Mooring Fields

Currie Park

Museum Park

Hollywood Beach Renourishment,

Fort Zachary Taylor State Park

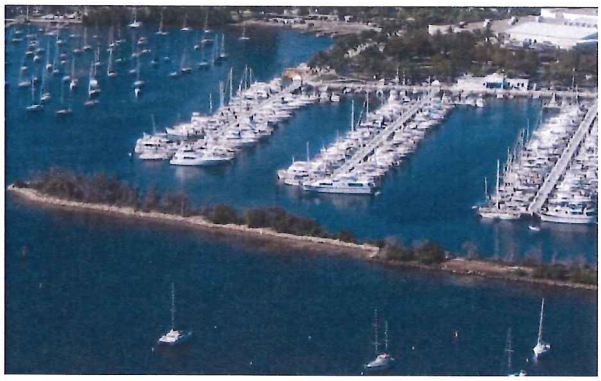


PortMiami Monitoring

North Bay Village, Florida

Kennedy Park Dock

Hillsboro Inlet



Dinner Key

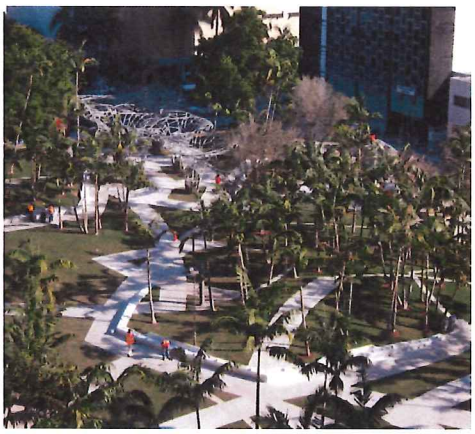
Rickenbacker

Munyon Island Docking Facility

Miracle Mile/Giralda Streetscape

1826 Collins Parking Garage

Aviva Developments

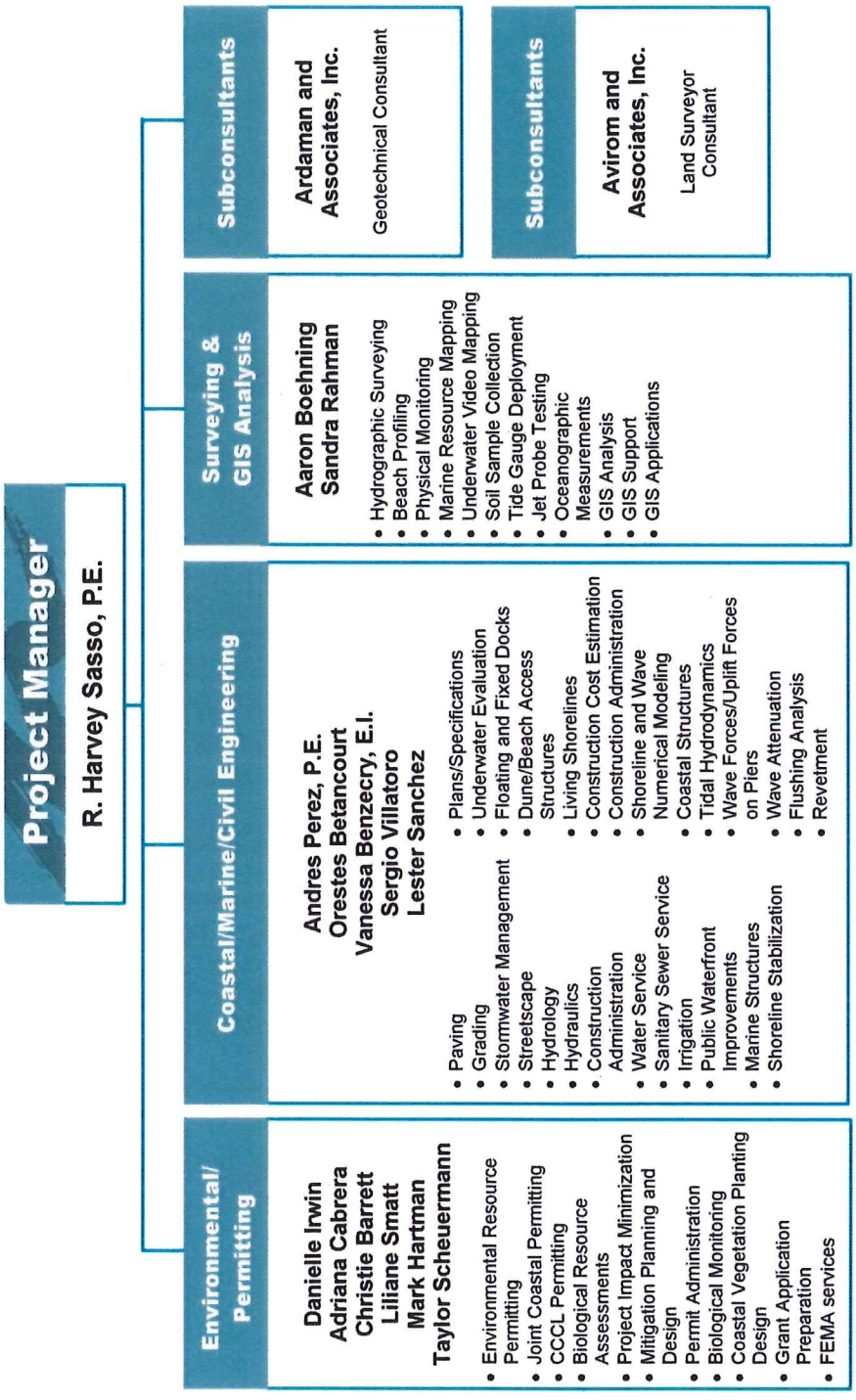


Sound Streetscape

Bayfront Street Ends

Section D
Organization Structure

FIRM'S ORGANIZATIONAL CHART



WORKLOAD

Coastal Systems has assembled a highly qualified team of professionals with demonstrated experience and qualifications in all of the areas of expertise required to plan and design this Project. Coastal Systems has adequate staff resources and knowledge to complete all tasks identified in this RFQ. Coastal Systems will complete specific project planning, engineering analyses, design, cost and alternative analyses, permitting and additional tasks mentioned in the RFQ on time schedules mutually agreed between the City and our office. Based on current and projected workloads, these staff members have sufficient time available to dedicate to the successful completion of required project tasks in accordance with the target schedule.

Coastal Systems carefully reviews the firm's workload bi-monthly, and the firm projects workload for contracted work and anticipated work on a monthly basis. The firm has the capacity to complete this project with the allocated resources, and the firms maintains a diverse staff of 25+ professionals within two offices in southeast Florida that can provide additional engineering support if required.

Chapter 5
Required Forms

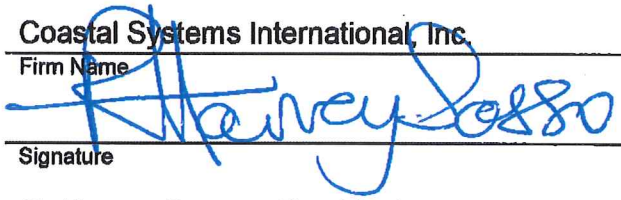
Form B - Public Entity Crimes

NOTIFICATION OF PUBLIC ENTITY CRIMES LAW

Pursuant to Section 287.133, *Florida Statutes*, you are hereby notified that a person or affiliate who has been placed on the convicted contractors list following a conviction for a public entity crime may not submit a proposal on a contract to provide any goods or services to a public entity; may not submit a proposal on a contract with a public entity for the construction or repair of a public building or public work; may not submit proposals on leases or real property to a public entity; may not be awarded or perform work as a contractor, supplier, sub-Proposer, 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 Section 287.017 [F.S.] for Category Two [$35,000.00] for a period of thirty-six (36) months from the date of being placed on the convicted contractors list.

Acknowledged by:

Coastal Systems International, Inc.
Firm Name



Signature

May 22, 2017
Date

R. Harvey Sasso, President
Printed Name and Title

Form A - Signature Authority

Indicate below Proposer's type of organization and provide the required documentation as applicable to demonstrate that the executor of Proposer's Proposal is duly authorized to execute on behalf of, and as the official act of, Proposer.

Select	Type of Organization	Officer Who Signed Proposal Submittal Signature Page	Required Authorizing Documentation
☒	Corporation	President, Vice President, or Chief Executive Officer	None
☐	Corporation	Director, Manager, or other title	Corporate resolution
☐	Limited Liability Company (LLC) – Member-Managed	Member	Articles of Organization or Operating Agreement
☐	Limited Liability Company (LLC) – Manager-Managed	Manager	Articles of Organization or Operating Agreement
☐	Limited Partnership	General Partner	Document demonstrating the legal authority to bind the Limited Partnership
☐	Partnership	Partner	None
		CEO, Director, Manager or other title	Authorizing documentation
☐	Individual	Individual	None

☐ **Documentation is not required.**

☐ **The required authorizing documentation is included with Proposal.**

Form C - Drug-Free Workplace

In the event a tie exists at the conclusion of evaluations, preference will be given to the supplier(s) who certifies it has a drug-free workplace program in accordance with Section 287.087, Florida Statutes. The drug-free workplace preference is applied as follows:

TIE: Whenever two or more proposals are equal with respect to scoring for the evaluation criteria (e.g., price, experience, quality, service) are received for the procurement of commodities or contractual services, a proposal received from a supplier that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing a tie will be followed if none of the tied suppliers have submitted this Form C and/or have a drug-free workplace program.

As the person authorized to sign this statement, I certify that this firm complies fully with the following requirements:

1) This firm publishes 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) This firm informs 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) This firm gives 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), this firm notifies 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 abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5) This firm imposes a sanction on or requires 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) This firm will continue to make a good faith effort to maintain a drug-free workplace through implementation of this section.

Acknowledged by:

Coastal Systems International, Inc.
Firm Name

Signature

May 22, 2017
Date

R. Harvey Sasso, President
Printed Name and Title

Form D - Conflict of Interest Disclosure

The award of the agreement is subject to the provisions of Chapter 112, Florida Statutes. All Proposers must disclose within their Proposal, the name of any officer, director, or agent who is also an employee or relative of an employee of the City of Delray Beach.

Furthermore, all Proposers must disclose the name of any City employee or relative(s) of a City employee who owns, directly or indirectly, an interest in the Proposers firm or any of its branches.

The purpose of this disclosure form is to give the City the information needed to identify potential conflicts of interest for key personnel involved in the award of this contract.

The term "conflict of interest" refers to situations in which financial or other personal considerations may adversely affect, or have the appearance of adversely affecting, an employee's professional judgment in exercising any City duty or responsibility in administration, management, instruction, research, or other professional activities.

Please check one of the following statements and attach additional documentation if necessary:

☒ To the best of our knowledge, the undersigned firm has no potential conflict of interest as defined in Chapter 112, Florida Statutes and Section 2-443, Palm Beach County Code of Ordinances.

☐ The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other Cities, Counties, contracts, or property interest for this RFQ.

Acknowledged by:

Coastal Systems International, Inc.
Firm Name

Signature

May 22, 2017
Date

R. Harvey Sasso, President
Printed Name and Title

Form E - Acknowledgment of Addenda

The Proposer hereby acknowledges the receipt of the following addenda, which were issued by the City and incorporated into and made part of this RFQ. It is the sole responsibility of the Proposer to ensure that all addenda have been received and receipt of each has been acknowledged. Failure to submit acknowledgement of each addendum issued may result in the Proposer being deemed non-responsive.

ADDENDA NUMBER	ADDENDA DATE
Addendum No. 1	April 24, 2017
Addendum No. 2	April 27, 2017
Addendum No. 3	May 4, 2017
Addendum No. 4	May 10, 2017
Addendum No. 5	May 10, 2017
Addendum No. 6	May 18, 2017
Addendum No. 7	May 19, 2017

Signature of Proposer's Agent

President
Title

R. Harvey Sasso
Printed Name

May 22, 2017
Date

Chapter 6
Evidence of Insurance

INSURANCE

ACORD

COAST-1 OP ID: GF

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 02/06/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER 954-883-2900 Tanenbaum Harber of Florida 2900 SW 149th Avenue Miramar, FL 33027-6605 Pat Murphy		CONTACT NAME: Gail Fulmore PHONE (A/C, No, Ext): 954-883-2900 FAX (A/C, No): 954-517-7400 E-MAIL ADDRESS: gfulmore@thflorida.com	
		INSURER(S) AFFORDING COVERAGE	NAIC #
INSURED Coastal Systems International, Inc. 464 S. Dixie Highway Coral Gables, FL 33146		INSURER A : Covington Specialty Ins Co	13027
		INSURER B : Hartford Underwriters Ins. Co.	30104
		INSURER C : Commerce & Industry Ins. Co.	19410
		INSURER D : Beazley Insurance Co.Inc. USA	37540
		INSURER E :	
		INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY							
	CLAIMS-MADE OCCUR			VBA516100	01/20/2017	01/20/2018	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 300,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	POLICY X PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
B	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO			21UECIN8962	01/20/2017	01/20/2018	BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
C	UMBRELLA LIAB X OCCUR						EACH OCCURRENCE	$ 3,000,000
	X EXCESS LIAB CLAIMS-MADE			EBU020693604	01/20/2017	01/20/2018	AGGREGATE	$ 3,000,000
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N	N/A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
D	Professional Liab Claims Made			V15R12171001 RETRO DATE N/A	01/30/2017	01/30/2018	Per Claim Aggregate	1,000,000 1,000,000

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

CERTIFICATE HOLDER

0000001

****
FOR INSURANCE INFORMATION PURPOSES ONLY**********
****

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Patrick D. Murphy

ACORD 25 (2016/03)

COASTAL SYSTEMS
INTERNATIONAL, INC.

Coastal Engineering, Waterfront & Marinas, Civil Engineering,
Regulatory Permitting, Site Investigations,
Marine Environmental, Construction & Destination Development

464 South Dixie Highway, Coral Gables, FL 33146

Tel: 305-661-3655 | Fax: 305-661-1914

www.coastalsystemsint.com

info@coastalsystemsint.com

EXHIBIT "B"

Category: Coastal Engineering	**Hourly Raw Salary Rate**
Principal Engineer	$ 53.42
Project Manager	$ 33.06
Senior Engineer	$ 34.61
Engineer I	$ 20.00
Engineer II	$ 24.52
Senior Engineering Tech	$ 25.21
Senior CADD Designer	$ 21.75
CADD Designer	$ 20.00
Construction Manager	$ 30.00
Senior Inspector	$ 22.00
Office Support	$ 18.68

PRICE ADJUSTMENTS BASED ON GOVERNMENTAL PRICE INDEX

Prior to the completion of the first year of the Contract term, and every 12-month anniversary thereafter, the City may consider an adjustment to prices based on the most recent 12 month change in the following pricing index: Bureau of Labor Statistics, Employment Cost Index, Private Industry Workers, Total Compensation, Management business and financial occupations, Not Seasonally Adjusted, CIU2010000110000A.

It is Consultant's responsibility to request any pricing adjustment under this provision. For any adjustment to be considered, the Consultant's request for adjustment should be submitted at least sixty (60) days prior to the anniversary date. The adjustment requested shall not be in excess of the relevant pricing index change. If a timely adjustment request is not received from the Consultant, the City may exercise its Option to Renew the Contract for another Term without any pricing adjustment.