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)

CAROLLO ENGINEERS, 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 **Carollo Engineers, Inc.,** a Delaware corporation (hereinafter referred to as "Consultant"), whose principal address is 9897 Lake Worth Road, Suite 302, Lake Worth, Florida 33467.

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:

Carollo Engineers, Inc.
9897 Lake Worth Road, Suite 302
Lake Worth, Florida 33467
Attn: Elizabeth Fujikawa, Vice 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: VICE PRESIDENT

WITNESSES:

By: _____

Print Name: Mark Ludwigson

By: _____

Print Name: Brandon G. Bracey

EXHIBIT A

statement of qualifications

ORIGINAL | MAY 2017

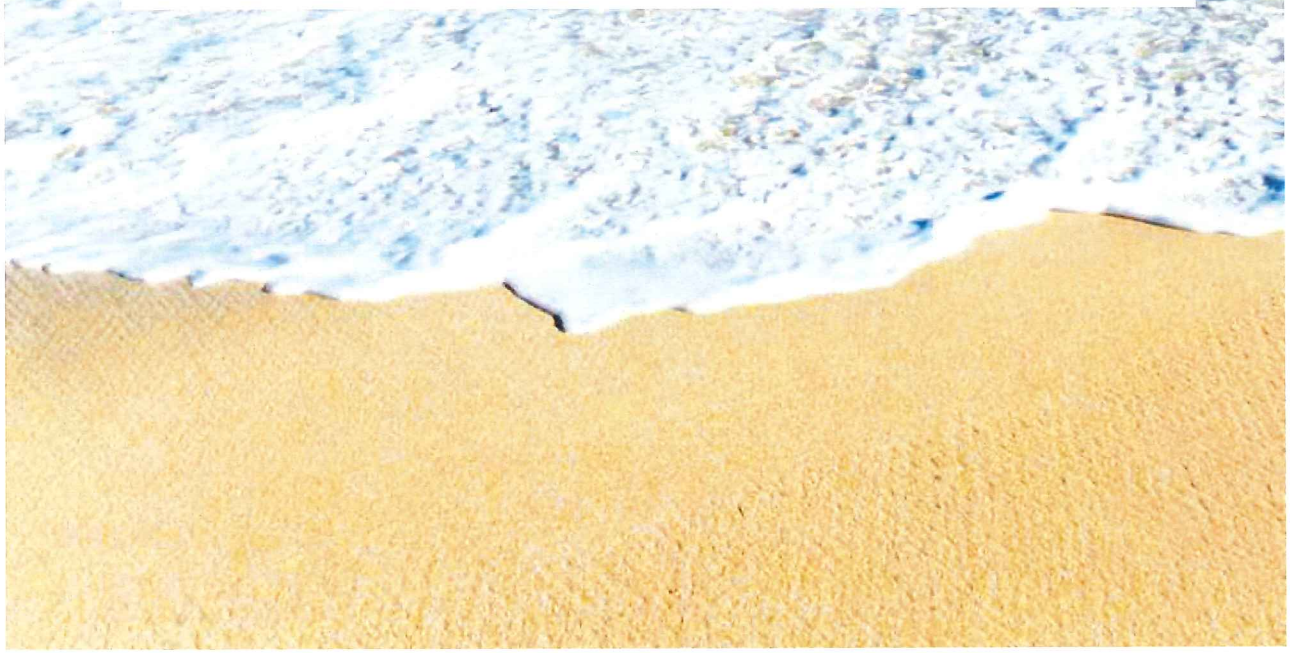
CONTINUING ENGINEERING, SURVEYING, AND LANDSCAPING ARCHITECTURAL Consulting Services

RFQ No. 2017-048

carollo

Engineers...Working Wonders With Water®

Table of **Contents**



carollo
Engineers...Working Wonders With Water®

9897 Lake Worth Road, Suite 302, Lake Worth, Florida 33467
P. 561.868.6400 F. 561.868.6401

May 25, 2017

City of Delray Beach
Purchasing Department
100 NW 1st Avenue
Delray Beach, FL 33444

Subject: RFQ No. 2017-048 - Continuing Engineering, Surveying, and Landscaping Architectural Consulting Services

Dear Selection Committee Members:

Carollo Engineers appreciates the opportunity to submit our qualifications for the City of Delray Beach's Continuing Engineering contract. We are fully committed to performing the proposed services according to the requirements noted in the Request for Qualifications (RFQ).

As you review our credentials, we encourage you to ask yourself the question: "Why have so many clients across the country, and in particular throughout Florida, turned to Carollo for their most important water and/or wastewater projects?" We believe clients choose Carollo because of our proven ability to creatively identify and cost-effectively implement the best solutions. Combine this with our philosophy of integrating our clients into the decision-making process at every level and our dedication to responsive service and you have one powerful formula for success.

Our staff addresses the day-to-day needs of numerous clients throughout Florida. Our local portfolio includes projects for the South Central Regional Wastewater Treatment Plant, Palm Beach County, Broward County, Miami-Dade, South Florida Water Management District, and the cities of Boynton Beach, Margate, Sunrise, Pompano Beach, and Plantation. As a testament to how our clients feel about our services, we are proud of the fact that 100 percent of our Florida-based clients have chosen to renew their continuing services contracts with us.

Carollo understands that the City will have a broad range of needs to be met through this continuing services contract. In addition to meeting the need for breadth of services, we also anticipate that filling schedule and budget expectations will be a must. Exceeding expectations requires that project teams have multiple skills: technical knowledge, understanding of local issues, and a drive for "out of the box thinking" to find the best solutions. These teams have to be orchestrated by a Project Manager with excellent communication skills – to work with you to understand your needs, and in turn, to translate those needs to our team.

We look forward to working with the City to address your needs.

Sincerely,

CAROLLO ENGINEERS, INC.

Elizabeth Fujikawa, P.E., LEED AP
Vice President and Project Manager

EGF:sf

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: Carollo Engineers, Inc.

Street Address: 9897 Lake Worth Road, Suite 302, Lake Worth, FL 33467

Mailing Address (if different from Street Address):

Telephone Number(s): 561-868-6400

Fax Number(s): 561-868-6401

Email Address: efujikawa@carollo.com

Federal Identification Number: 86-0899222

Acknowledged by:

Carollo Engineers, Inc.
Firm Name

Signature

May 25, 2017
Date

Elizabeth Fujikawa, P.E., BCEE, LEED AP, Vice 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)

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.**

Chapter 2
PROPOSER'S STATEMENT OF ORGANIZATION AND W-9

Firm Information and Local Contact

Name: Carollo Engineers, Inc.

Ownership Structure: Corporation

W-9: Included at the end of this section.

Corporate Headquarters:
2700 Ygnacio Valley Road, Suite 300
Walnut Creek, CA 94598
Ph: (925) 932-1710 | F: (925) 930-0208

Local Office:
9897 Lake Worth Road, Suite 302
Lake Worth, FL 33467
Ph: (561) 868-6400

Primary Representative:
Liz Fujikawa, P.E., BCEE, LEEP AP
9897 Lake Worth Road, Suite 302
Lake Worth, FL 33467
efujikawa@carollo.com
(561) 868-6400

Secondary Representative:
Randy Braley, P.E.
9897 Lake Worth Road, Suite 302
Lake Worth, FL 33467
bbraley@carollo.com
(561) 868-6400

Florida Business License #: F00000003055

Federal ID#: 86-0899222

Website: www.carollo.com

Year Established: 1933

Date Established under Current Name: May 13, 2010

M/WBE Status: Carollo is not a certified M/WBE.

List of Officers, Owners, and/or Partners, or Managers of the Firm

BOARD MEMBERS

B. Narayanan, PhD, P.E.
President and Chief Executive Officer
2700 Ygnacio Valley Road, Suite 300
Walnut Creek, California 94598
925-932-1710 (Ph) | 925-930-0208 (Fax)

Jim Hagstrom, P.E.
Executive Vice President
Managing Director of Technical Practice
870 Market Street, Suite 728
San Francisco, California 94102
415-399-1601 (Ph) | 415-399-9414 (Fax)

Lou Carella, P.E.
Executive Vice President
Managing Director of Marketing
2700 Ygnacio Valley Road, Suite 300
Walnut Creek, California 94598
925-932-1710 (Ph) | 925-930-0208 (Fax)

Russell Wachter, P.E., BCEE
Executive Vice President
Managing Director of Client Services
4600 East Washington Street, Suite 500
Phoenix, Arizona 85034
602-263-9500 (Ph) | 602-265-1422 (Fax)

Ash Wason, P.E. PMP
Executive Vice President
Managing Director of Internal Operations
3150 Bristol Street, Suite 500
Costa Mesa, California 92626
714-593-5100 (Ph) | 714-593-5101 (Fax)

Michael Barnes
General Counsel
2700 Ygnacio Valley Road, Suite 300
Walnut Creek, California 94598
925-932-1710 (Ph) | 925-930-0208 (Fax)

Current or Pending Litigation

1. In 2015, Carollo and others were the subject of a lawsuit filed by the spouse of deceased prison inmate alleging that contaminated water at the prison caused the inmate's death. No connection has been shown between the alleged contamination and Carollo, and Carollo denies responsibility for any of the claims. The lawsuit is in progress.
2. In 2015, Carollo and a paint manufacturer were the subject of a lawsuit filed by a coatings the subcontractor related to subcontractor's failure to properly prepare the painting substrate and the resultant failure of the coating. Carollo denies responsibility for any of the claims. The lawsuit is in progress.
3. In 2016, Carollo and a client were both the subject of a civil lawsuit filed by the construction contractor on a water supply project related to the construction contractor's claim of changed subsurface conditions. Carollo denies responsibility for any of the claims. The lawsuit is in progress.

Firm History

Carollo was established in Phoenix, AZ, in 1933 as Headman, Ferguson, and Carollo, and was renamed John A. Carollo, Consulting Engineers in 1957. The partnership was reorganized in 1970 under the name of John Carollo Engineers and was renamed Carollo Engineers in 1996. The firm was incorporated in 1998 under the name of Carollo Engineers, P.C. The firm then converted from an Arizona professional corporation to a Delaware corporation under the name of Carollo Engineers, Inc. on May 13, 2010.

Continuous Ownership

Carollo has had no ownership changes in the past two years and none are anticipated.

Form **W-9**
(Rev December 2011)
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.

Name (as shown on your income tax return)
Carollo Engineers, Inc.

Business name/disregarded entity name, if different from above

Check appropriate box for federal tax classification:
☐ Individual/sole proprietor ☐ C Corporation ☑ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶

☐ Other (see instructions) ▶

☐ Exempt payee

Address (number, street, and apt. or suite no.)
2700 Ygnacio Valley Road, Suite 300

Requester's name and address (optional)

City, state, and ZIP code
Walnut Creek, CA 94598

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 the "Name" line to avoid backup withholding. For individuals, this is 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 chart on page 4 for guidelines on whose number to enter.

Social security number
[ ][ ][ ] - [ ][ ] - [ ][ ][ ][ ]

Employer Identification number
8 6 - 0 8 9 9 2 2 2

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).

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 4.

Sign Here | **Signature of U.S. person** ▶ [signature] **Date** ▶ 9/8/2016

General Instructions

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

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

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.

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

Cat No 10231X

Form **W-9** (Rev. 12-2011)

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Chapter 3
MINIMUM QUALIFICATIONS DOCUMENTATION

REGISTRATION IN STATE OF FLORIDA AND DEMONSTRATION OF 24 MONTH OWNERSHIP AND BUSINESS CONTINUITY

State of Florida
Department of State

I certify from the records of this office that CAROLLO ENGINEERS, INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on May 25, 2000.

The document number of this corporation is F00000003055.

I further certify that said corporation has paid all fees due this office through December 31, 2017, that its most recent annual report/uniform business report was filed on April 6, 2017, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Tenth day of April, 2017

Ken Detzner

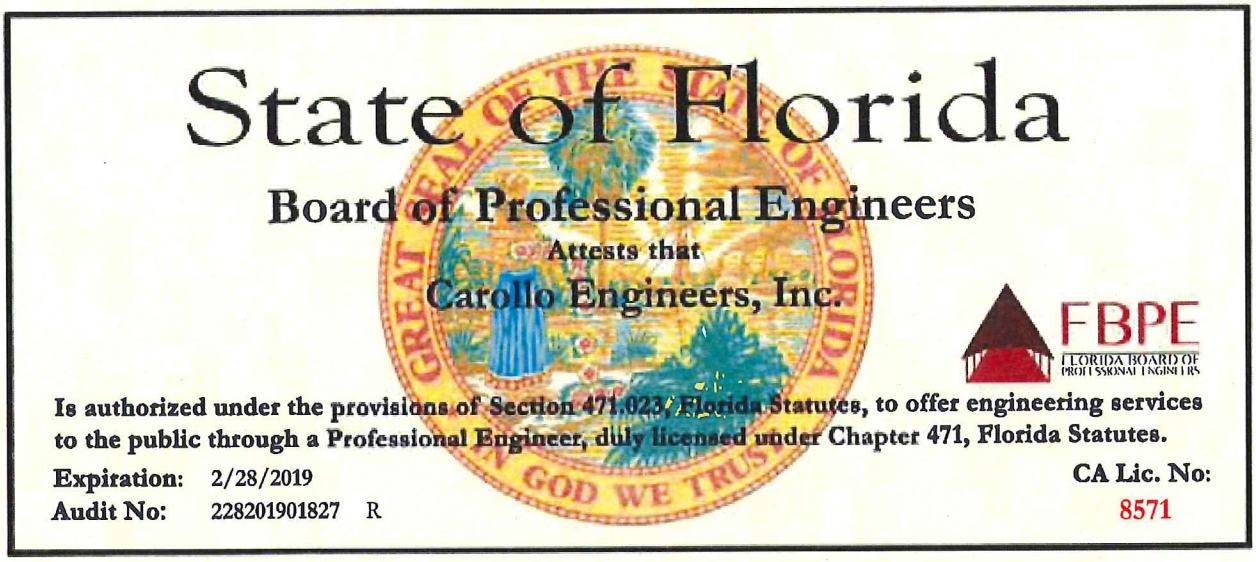
Secretary of State

Tracking Number: CU6907316309

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

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

CAROLLO ENGINEERING LICENSE IN THE STATE OF FLORIDA



State of Florida

Board of Professional Engineers

Attests that

Carollo Engineers, Inc.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

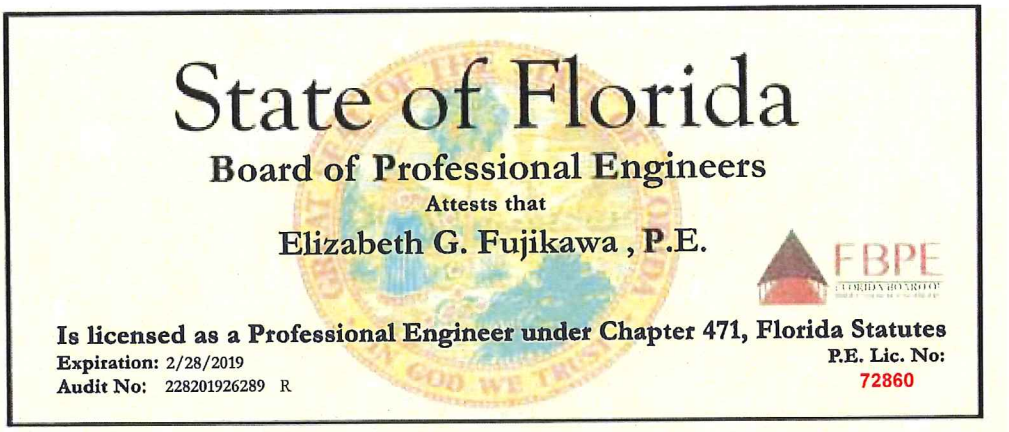
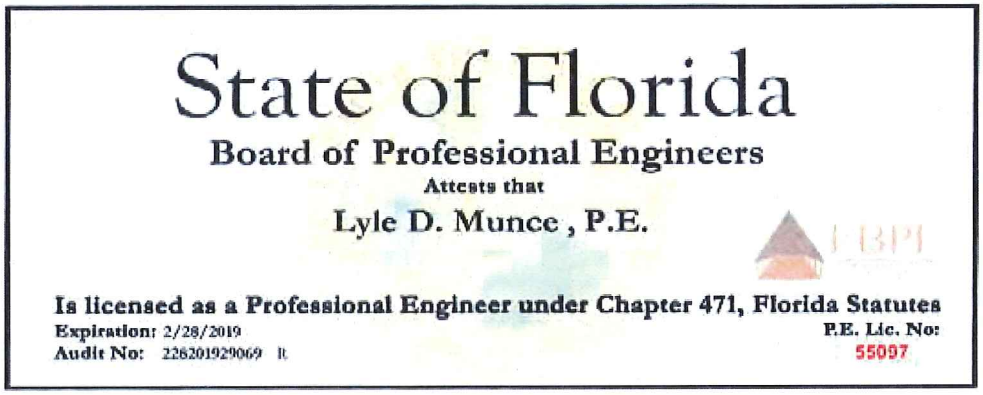
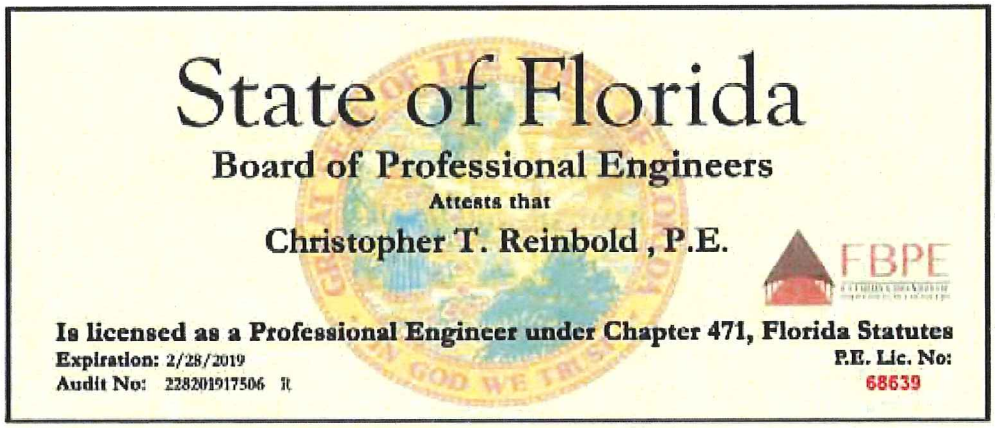
Is authorized under the provisions of Section 471.023, Florida Statutes, to offer engineering services to the public through a Professional Engineer, duly licensed under Chapter 471, Florida Statutes.

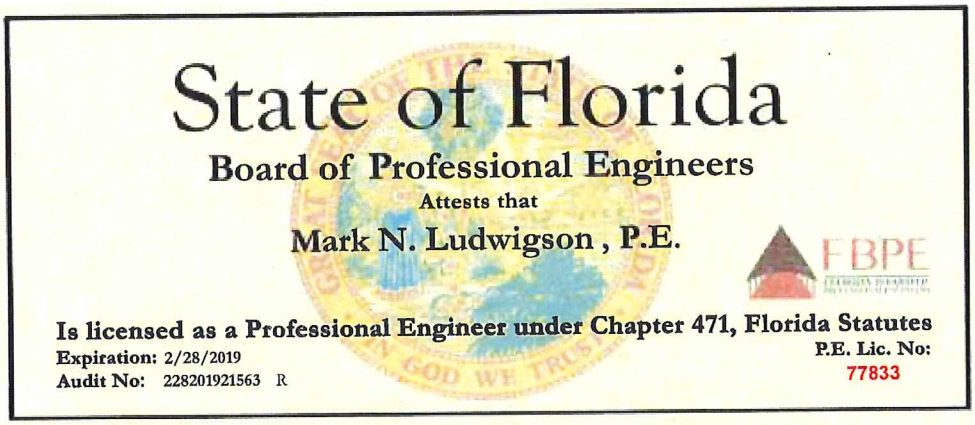
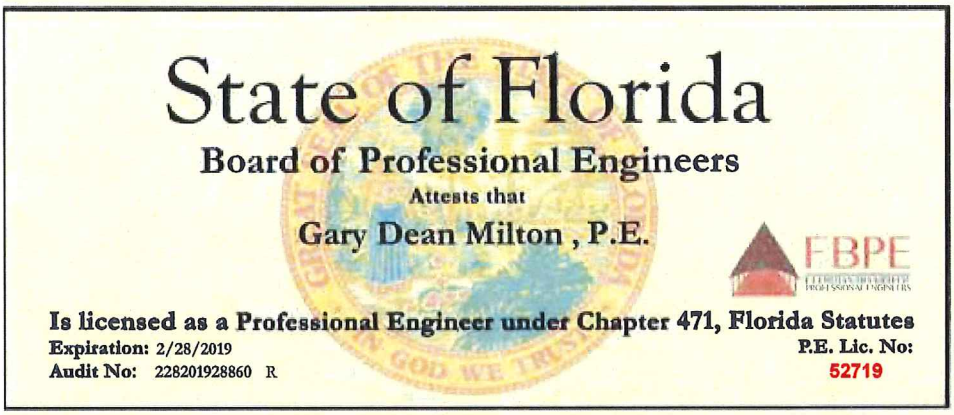
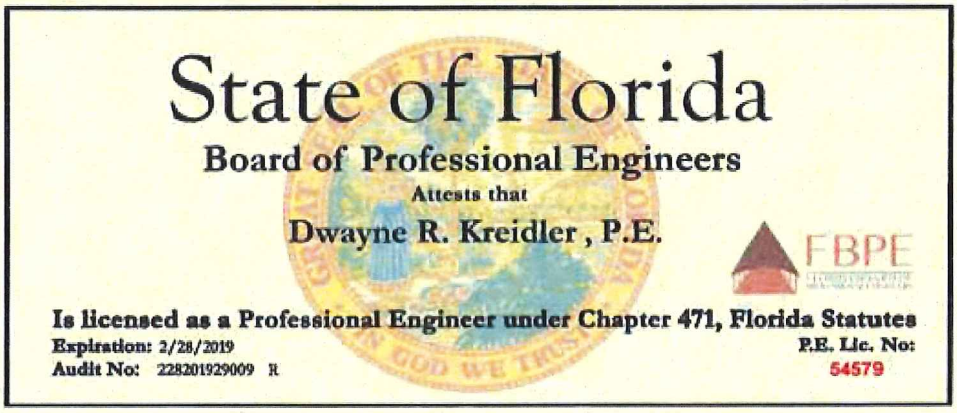
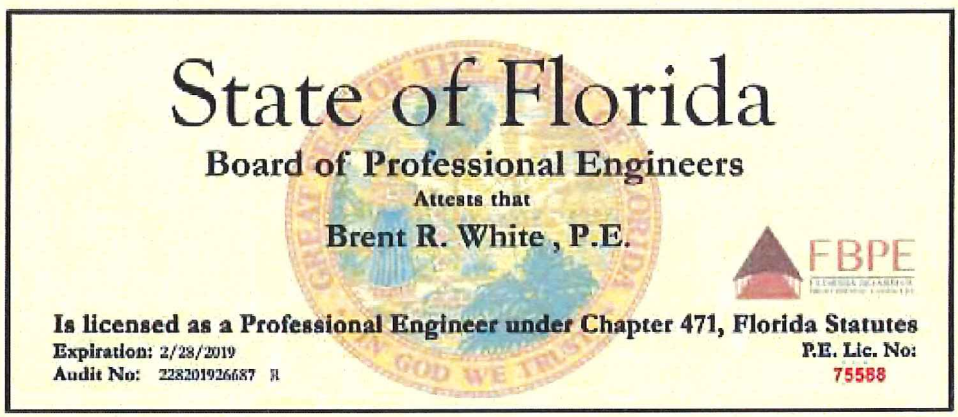
Expiration: 2/28/2019

Audit No: 228201901827 R

CA Lic. No: 8571

CAROLLO STAFF ENGINEERING LICENSES

CATEGORY	STAFF LICENSE
Category 1 ENGINEERING	
Category 1 ENGINEERING	
Category 1 ENGINEERING Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM	

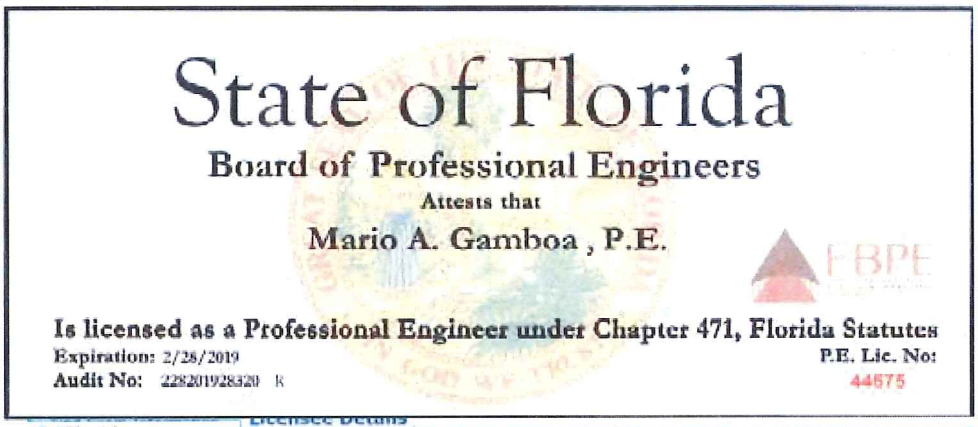
CATEGORY	STAFF LICENSE
Category 1 ENGINEERING Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM	
Category 4 CIVIL ENGINEERING Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM	
Category 4 CIVIL ENGINEERING	
Category 4 CIVIL ENGINEERING	

CATEGORY	STAFF LICENSE

Category 4 CIVIL ENGINEERING

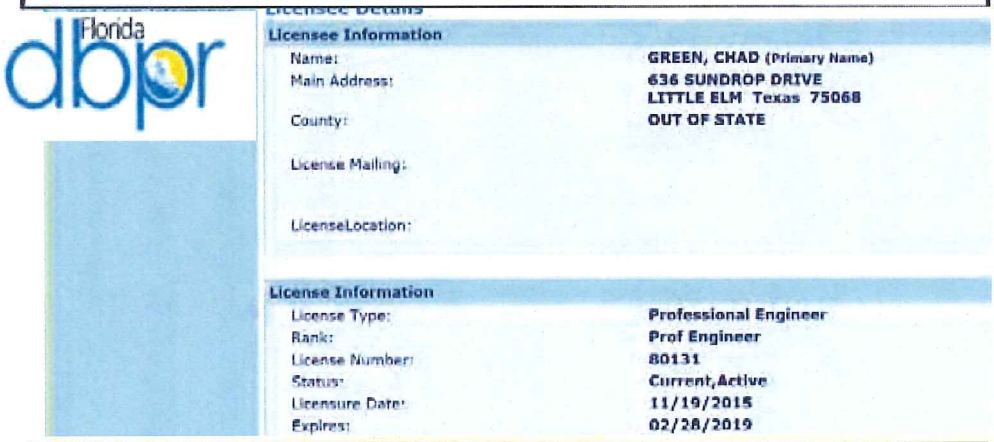
State of Florida
Board of Professional Engineers
Attests that
Abnery I. Picon , P.E.
FBPE
Is licensed as a Professional Engineer under Chapter 471, Florida Statutes
Expiration: 2/28/2019
Audit No: 228201933683 R
P.E. Lic. No:
81613

Category 5 MECHANICAL/ ELECTRICAL/ PLUMBING ENGINEERING



State of Florida
Board of Professional Engineers
Attests that
Mario A. Gamboa , P.E.
FBPE
Is licensed as a Professional Engineer under Chapter 471, Florida Statutes
Expiration: 2/28/2019
Audit No: 228201928320 R
P.E. Lic. No:
44575

Category 5 MECHANICAL/ ELECTRICAL/ PLUMBING ENGINEERING



Florida dbpr

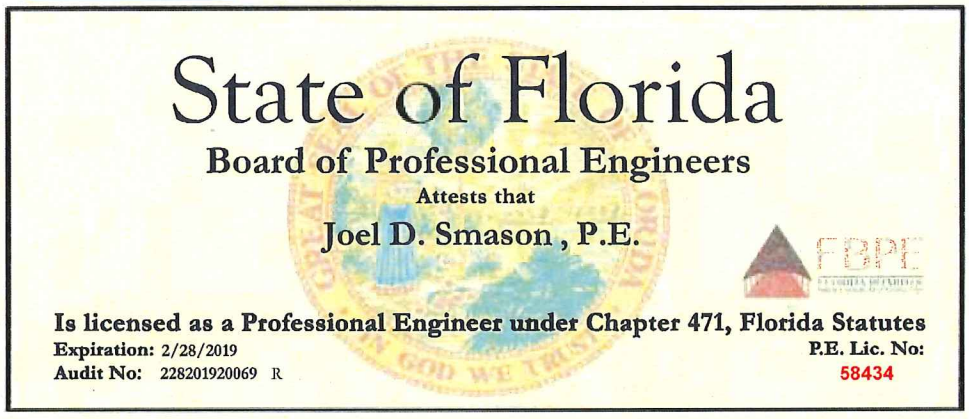
Licensee Information

Name:	GREEN, CHAD (Primary Name)
Main Address:	636 SUNDROP DRIVE LITTLE ELM Texas 75068
County:	OUT OF STATE
License Mailing:	
LicenseLocation:	

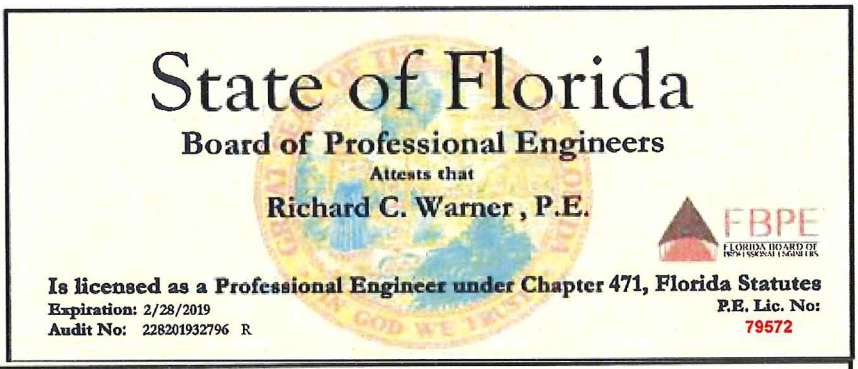
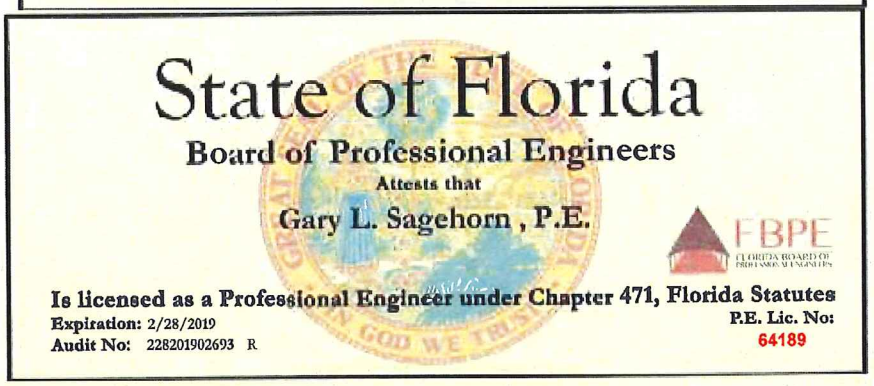
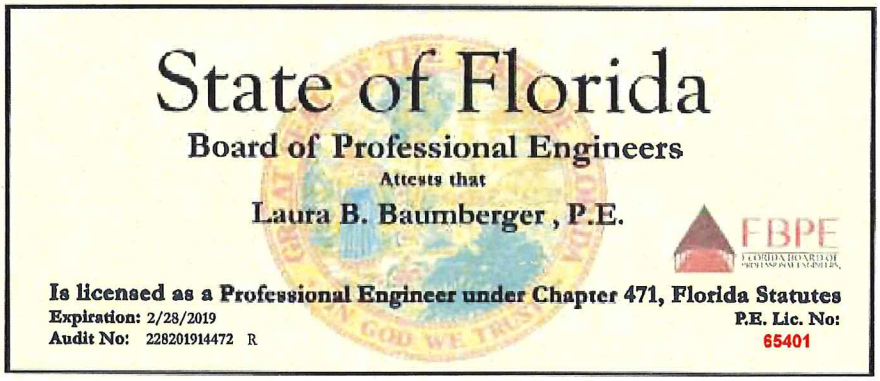
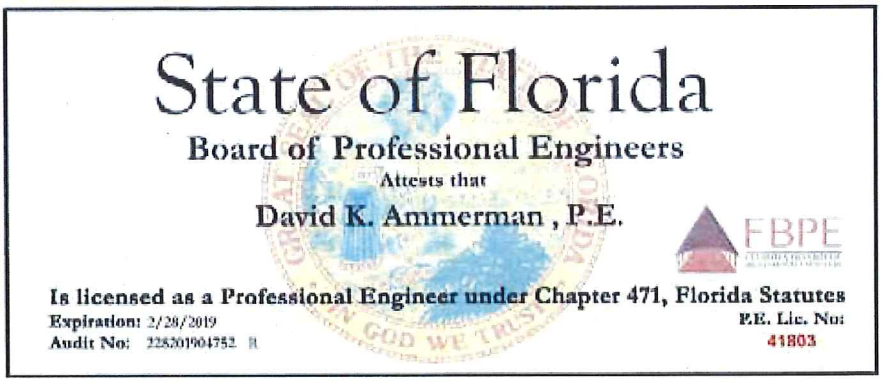
License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	80131
Status:	Current,Active
Licensure Date:	11/19/2015
Expires:	02/28/2019

Category 6 STRUCTURAL ENGINEERING



State of Florida
Board of Professional Engineers
Attests that
Joel D. Smason , P.E.
FBPE
Is licensed as a Professional Engineer under Chapter 471, Florida Statutes
Expiration: 2/28/2019
Audit No: 228201920069 R
P.E. Lic. No:
58434

CATEGORY	STAFF LICENSE
Category 6 STRUCTURAL ENGINEERING	
Category 6 STRUCTURAL ENGINEERING	
Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM	
Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM	

CONFLICT OF INTEREST

Carollo is familiar with applicable conflict of interest laws and requirements. Neither our firm nor any of its employees involved on this project are aware of any conflict of interest that would preclude working on this project. Carollo, at all times, conducts its professional and business activities in a manner to prohibit conflict of interest on the part of the firm and its employees. We foresee no circumstances in which a conflict could arise.

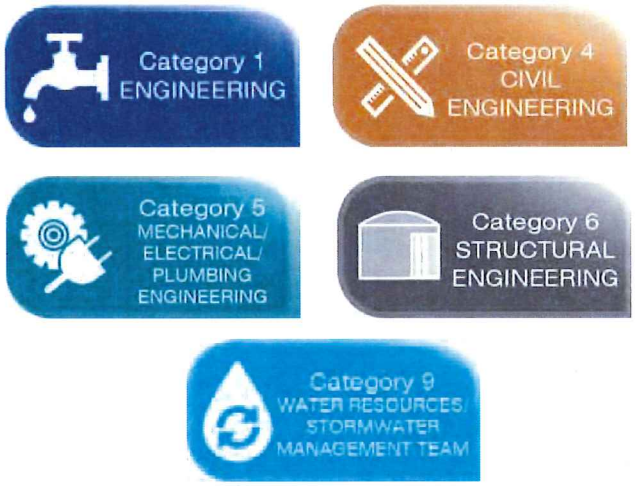
Chapter 4

PROPOSAL RESPONSE REQUIREMENTS INFORMATION

SECTION A | Experience, Background, Reference Feedback

REQUESTED PROFESSIONAL SERVICES AGREEMENT CATEGORIES

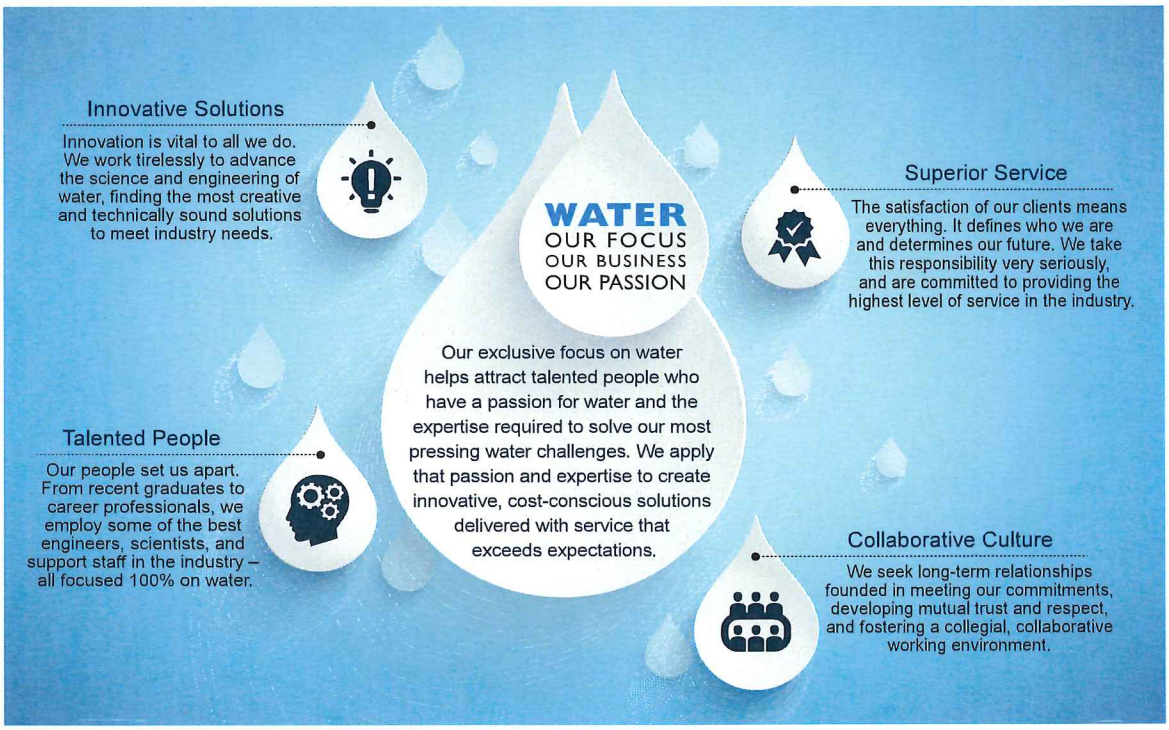
Carollo Engineers (Carollo) is requesting award of an Agreement for the following Professional Services Disciplines:



FIRM OVERVIEW

Carollo Engineers is an environmental engineering firm specializing in the planning, design, and construction of water and wastewater facilities. Carollo's reputation is based on client service and a continual commitment to quality. We currently maintain 40 offices throughout the U.S.

During our 84-year history, Carollo has successfully completed more than 20,000 projects for public sector clients. Carollo is currently ranked within Engineering News Record's (ENR) top 500 design firms. More importantly, ENR's annual Source Book ranks Carollo among the top 12 firms for water and sewer/wastewater. Unlike the majority of our competitors, Carollo only provides water and wastewater engineering services. We recruit nationwide and hire technical staff with extensive background and training specific to this field. For that reason, the quality and professional standing of our core group of water and wastewater professionals equals or exceeds that provided by some of the largest engineering firms in the country.



WATER IS OUR FOCUS

Carollo has experienced unprecedented growth nationally and throughout Florida; growth we believe is fueled by our approach to client service and the innovative solutions we consistently bring to the table. Since the year 2000, Carollo has progressed from the new kid on the block to the preferred "go-to" firm for dozens of major client agencies in Florida.

The reason being, we believe, rests not simply with the creative thinking we bring to the project or our depth of experience, but with the manner in which our services are delivered. Frankly put, we are responsive to the needs of our clients, we customize our solutions to fit their needs (no cookie-cutter approach), and we listen carefully to learn from their experiences and to understand their preferences. The number of our Florida projects has gone from zero to 400, stemming from one key factor: superior client service.

At Carollo, water is our focus, our business, and our passion, allowing us to put all of our resources and energy into working wonders with water. We combine a passion for finding and implementing innovative solutions with a level of service that fosters long-term, trusted relationships. Projects under this contract will be led by a team of dedicated Carollo project managers with a breath and depth of experience that few firms can match. Our experience is comprehensive and includes all facets of water, wastewater, and infrastructure planning, design, and construction management.

At Carollo, our focus on water and wastewater engineering leads to many challenging projects with unique solutions. With 84 years of experience in public sector water/wastewater, Carollo brings a wealth of knowledge and expertise to each project. As illustrated in the map below, Carollo has provided or is currently providing similar continuing engineering services for utilities throughout Florida. The following sections provide a general profile of our project experience, followed by specific project examples.

Carollo's experience providing similar services throught Florida will yield **proven, cost-effective solutions for the City.**

ENGINEERING - We currently provide **continuing engineering services** to many water and wastewater agencies throughout Florida under a similar "as-needed" services approach. On these contracts not only have we established a reputation of responsive, high-value service, we have also demonstrated our flexibility in providing the "right" expertise to efficiently resolve the project issues. We commit this same high level of service to the City on this as-needed work.

Carollo's experience as a continuing services consultant for several Florida entities includes working for you at the South Central Regional Wastewater Treatment plant, South Florida Water Management District, Palm Beach County, Manatee County, Broward County, Sarasota County, and the Cities of Margate, Sunrise, Boynton Beach, Pompano Beach, Orlando, and others. Our staff of more than 70 can quickly and effectively mobilize to complete the City's projects as they develop.

Carollo is known for innovation, bringing the right technology to effectively solve our client's needs.

CIVIL ENGINEERING - Carollo routinely provides **civil engineering** either as part of our water and wastewater treatment plant projects or on stand-alone projects. Projects include the planning, design and construction phase management of force mains, lift stations, distribution systems, reuse systems, and stormwater collection and drainage.

MECHANICAL/ELECTRICAL/PLUMBING - Carollo provides in-house **mechanical engineering** to support the planning, design, and construction management of water and wastewater treatment facilities, pump stations and ancillary facilities such as administration facilities and maintenance shops. Projects include standby power, air and gas compressors and blowers, energy efficiency and optimization, cogeneration facilities, dehumidification, air conditioning, and heating. Carollo has an established electrical engineering group with seven decades of experience including all aspects of **electric power and automation system engineering** for water and wastewater treatment processes. Our engineers also routinely provide **plumbing design services**, including fire protection, sanitary system designs, and protected water system designs.

STRUCTURAL - Our **structural department**, consisting of 20 structural engineers, provides the structural engineering required on our water, wastewater, and reclaimed water projects, including water-bearing tankage, superstructures (precast tee and steel joist/deck roofs), analysis of existing structures for repurposing, rehabilitation of prestressed and cast in place concrete structures, etc. Our services routinely include new and rehabilitation projects where the goal is to return structural integrity and reliability to a system without increasing its flow-carrying capacity. We match infrastructure rehabilitation/repair technologies to each specific project for successful results. We find the combination that works best for a project, providing cost-saving benefits to our clients.

WATER RESOURCES/STORMWATER MANAGEMENT - Our team includes nationally-recognized experts in **Water Resources/Stormwater Management,** Carollo has been at the forefront of potable water reuse and water reuse, with significant work in research, planning, permitting, and design. Our resume includes more than 60 potable reuse projects. More importantly, our project team includes experts who have taken reuse projects from proof of concept to construction and operations. Our national credentials are balanced by our local team who is thoroughly familiar with Florida reuse regulations, and the design and operation of bench scale and pilot studies needed to obtain regulatory approval.

Our team includes nationally-recognized experts in stormwater management that will identify and develop proven, cost-effective, and implementable programs without "reinventing the wheel." We are experienced in implementing stormwater best management practices (BMPs) and low-impact development (LID) practices to assist clients in meeting EPA Phase I and II requirements. We use a comprehensive master planning approach to manage flooding while improving water quality.

CAROLLO EXPERIENCE

The following sections highlight representative experience by focus area.

Drinking Water Treatment

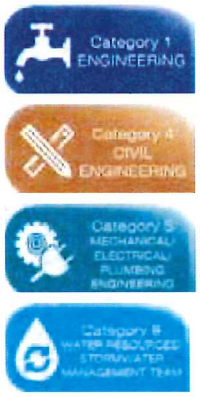
Carollo Engineers is a leading expert and offers a full range of capabilities in drinking water projects, including water treatment systems studies and evaluations, condition assessment asset management, and design and construction management services. Our projects have involved water supply and resource evaluations, water quality, and treatment analyses, area characteristic studies, evaluation of water treatment technologies to best suit client's goals, optimization and/or improvements of existing treatment processes, water conservation alternative evaluations, resource alternative studies, user evaluations studies, and financial analyses. Using this information, we have completed a number of water management plans and developed funding mechanisms.

We recognize the unique nature of our client's needs and our team of professionals has the expertise to undertake any challenging projects and find the most innovative and cost effective solutions. We have provided design services for more than 100 water treatment plants with at total treatment capacity of more than 3.5 billion gallons per day (bgd). Water treatment plants designed by Carollo range in size from less than 1 mgd to more than 600 mgd in capacity.

PROJECT NAME/CLIENT	DESCRIPTION OF WORK PERFORMED
Palm Beach County WTP MIEX® Treatment System Design	▸ Design, permitting, bidding assistance and construction management services of a Magnetic Ion Exchange (MIEX®) system for raw water organics concentration and color removal at WTP No. 2. This new treatment system replaced the aging ozone system and allowed the County to reduce their operational costs.
City of Sunrise Sawgrass and Springtree WTPs Expansion Design	▸ Carollo provided design and construction management services for the 1.5 mgd Reverse Osmosis (RO) WTP to treat brackish Floridan Aquifer well water and to meet obligations in the City's South Florida Water Management District Water Use Permit that requires the development of Alternative Water Supplies by May 2013.
Miami-Dade County Preston and Hialeah WTP Improvements	▸ This project included an evaluation of process and treatment systems, assessment of the operations, identification of system deficiencies and bottlenecks, evaluation and recommendation of alternative treatment options, and preparation of a feasibility study report.
City of North Port WTP Enhancement Study	▸ Carollo developed and pilot tested an innovative solution with significant cost savings by using riverbank filtration (RBF) as pretreatment to RO. A pilot test also developed preliminary RO and RBF design criteria.
City of Palm Coast Reverse Osmosis Membrane Softening WTP Expansion Design-Build	▸ The project included DB delivery of fast-track RO expansion with work completed ahead of an aggressive schedule; environmental construction permits obtained only eight weeks from the start of the project; upgrades to the membrane softening feed pumping system with VFDs, the addition of interstage booster pumps to the membrane equipment; and new ground storage tank.
City of Punta Gorda Bal Harbor Water Main Evaluation	▸ Carollo will complete a modeling analysis using the existing water distribution system model to evaluate the proposed water main diameter to determine if a smaller water main (12-inch) will meet the City's distribution system performance criteria.
Lee County Utilities North Lee County Reverse Osmosis WTP Expansion Design-Build	▸ The 4-month RO pilot/bench-top study addressed several of the deficiencies experienced by the facility. The pilot study included testing of a configuration for the elimination of acid addition for pH adjustment of the feed water, as well as testing and comparing performance with three different scale inhibitors to optimize prevention of membrane fouling. The study showed that conditioning the RO feed water with an appropriate dose of scale inhibitor resulted in the sustained performance of the membranes without the addition of acid to the RO feed.

Master Planning

Master planning has been an integral aspect of Carollo's experience for more than seven decades. In the past 15 years alone, we have provided planning services for over 200 municipal clients with service area populations from 5,000 to over 1 million. Our Infrastructure Master Planning Group is composed of more than 24 engineers, including 15 skilled hydraulic modelers. This provides valuable bench strength and the reassurance that we have additional staff available, if necessary, to augment our master planning team to meet deadlines and troubleshoot challenges as they arise. Our team members are specialists in the modeling and master planning disciplines so we have the depth of experience needed to address our client's needs. We also invest the time needed to be experts in our field, to have the latest tools and techniques, and to understand the trends in our industry.



In the last 10 years, Carollo has completed master plans for $8.2 billion in wastewater facilities. We have prepared facilities plans for wastewater treatment plants of various sizes. These plans have addressed process reliability, flexibility, and operational issues, as well as providing cost-effective solutions that utilize existing facilities to the greatest extent possible and limit treatment alternatives to the most reliable and easy-to-implement options.

PROJECT NAME/CLIENT	DESCRIPTION OF WORK PERFORMED
Palm Beach County WUD Master Plan	▸ The service area for PBCWUD covers approximately 429 square miles and serves a population of 438,090. The transmission and distribution system includes over 2,400 miles of pipeline and four water treatment plants which produce a combined annual average flow of about 56 million gallons per day.
Plantation Wastewater Collection System Modeling	▸ Carollo is providing engineering services to gather necessary data, develop the model, perform model calibration activities, and evaluate the existing wastewater (force main) system that consists of approximately 196 miles of gravity sewer lines, ranging in diameter from 4 to 30 inches, including vitrified clay pipe (VCP), polyvinyl chloride (PVC), and some cast iron pipe (CIP).
City of Punta Gorda Water Supply Master Plan	▸ Update to the City's previous WSMP including revised demand projections, evaluation of potential future supply sources, and an alternatives analysis to identify water supply projects for a range of different planning scenarios. Key considerations in the City's WSMPU included MFL regulations, ASR well regulations and usage options, meeting TDS regulation with a mineralized surface water, and reliability in water supply sources.
City of Punta Gorda Comprehensive Plan	▸ Provided engineering services to complete the water and sewer element of the City's 2007 Comprehensive Plan. Carollo completed the analysis required by the Florida Statutes for Comprehensive Plans; assisted the City in identifying goals, objectives, and policies that had to be included in the Comprehensive Plan; and wrote the Water and Sewer Element of the Comprehensive Plan Report.
Palm Beach County Glades Region Water Master Plan	▸ Carollo is preparing the Glades Region Water Master Plan that update and calibrate the County's Lake Region water distribution system model and will develop a Water Master Plan for the Glades system. The project will include the development of updated water demand projections for the Glades Region, hydraulic distribution system modeling, and development of a Capital Improvements Plan (CIP) through 2035.
City of Tallahassee Wastewater Treatment Master Plan	▸ The Wastewater Treatment Master Plan included a long-term treatment and disposal strategic plan for all current wastewater treatment disposal facilities. The plan involved identification of suitable sites to implement a residential/commercial effluent reclamation program.
United Water Florida St. Johns Forest Water Treatment Master Plan	▸ Carollo evaluated United Water Florida's 6-mgd RO, NF, and EDR water treatment plant for the desalination of brackish well water. RO offered the lowest cost due to higher rejection and smaller footprint.

Pump Stations

Carollo has planned, designed, and/or assisted in the construction of over 500 water and wastewater pump stations. The wastewater pumping facilities serve a number of specific functions including sanitary sewer, combined sewer overflow, storm water, and wastewater treatment plant influent and effluent. Many have involved minimizing community and environmental impacts.

Water pumping systems have include treated water delivery to distribution systems, well water pumping, intermediate transmission line boosting, interpressure zone transfers, and raw water delivery to treatment plants. Pumping facilities include both variable-speed and constant-speed pumping units with standby power generating facilities. Pump station design has included vertical-turbine and horizontal split-case pumps and has accommodated pipelines ranging in size from 12- to 96-inch.

Our pump station designs range in size from 1 mgd to 650 mgd with individual horsepower capacities of up to 2,500. These facilities have included various types of pump configurations including; wet pit (propeller, mixed flow, and turbine type); dry pit; submersible; self-cleaning; vertical; horizontal; solids handling; and screw pumps. Pump drives include constant-speed and multi-speed electric motors and various types of variable-speed drives, including variable frequency drives (VFDs); gas, diesel, and dual-fuel engines; gear drives; and V-belt drives.

PROJECT NAME/CLIENT	DESCRIPTION OF WORK PERFORMED
City of St. Petersburg Lift Station 1 Rehabilitation	▸ This project consists of the design for lift station rehabilitation that includes new submersible pumps, electrical feed and distribution equipment, and new standby generator.
Sarasota County Mission Control Lift Station SCADA Improvements	▸ The project consists of the design, bidding and construction services necessary to convert 26 Mission Control System RTUs to a new platform and system selected from the results of an alternatives analysis.
Sarasota County Central County Water Reclamation Facility (CCWRF) Expansion	▸ Carollo completed design and construction phase services for conversion and expansion of the CCWRF. The expansion included a major upgrade, capacity increase and other improvements to the facility's existing main lift station to meet average flows of 8 mgd with peaks to 17 mgd. ▸ The CCWRF is surrounded by middle class and upper middle-class neighborhoods and the main lift station is located adjacent to the main access road, so maintaining the aesthetic quality of the area was an important requirement. The design included the installation of a decorative fence and landscaping to hide the lift station. New aluminum covers were installed over the wet well and the existing odor control equipment was relocated to improve the operation of the odor control system.
SFWMD L-8 Inflow Structure and Pump Station D-B	▸ Owner's representative for the preparation of a design-build package and construction management for the L-8 Inflow Structure and Pump Station with a capacity of 290 mgd.
Tampa Bay Energy Audit for Cypress Creek Pump Station	▸ Carollo is conducting an energy audit to identify opportunities for and recommend energy efficiency for the Cypress Creek Pump Station. Carollo will also investigate potential State and Federal grants that may be available including the estimated effort to complete the grant application and the possible funding amount.
Manatee Evaluation of Master Pump Station (MPS) N1H and 549	▸ Engineering services for evaluating, testing, and modeling the hydraulic design and operation of Master Pump Stations N1H and 549, and evaluate bar screen performance at the Manatee Jail Lift Station.
Sarasota County Central County Water Reclamation Facility Expansion	▸ As part of the WRF Expansion project, Carollo completed the design and construction phase services for a major upgrade to the facility's existing main lift station and increased capacity to meet average flows of 8 mgd with peaks to 17 mgd.

Water Distribution and Transmission

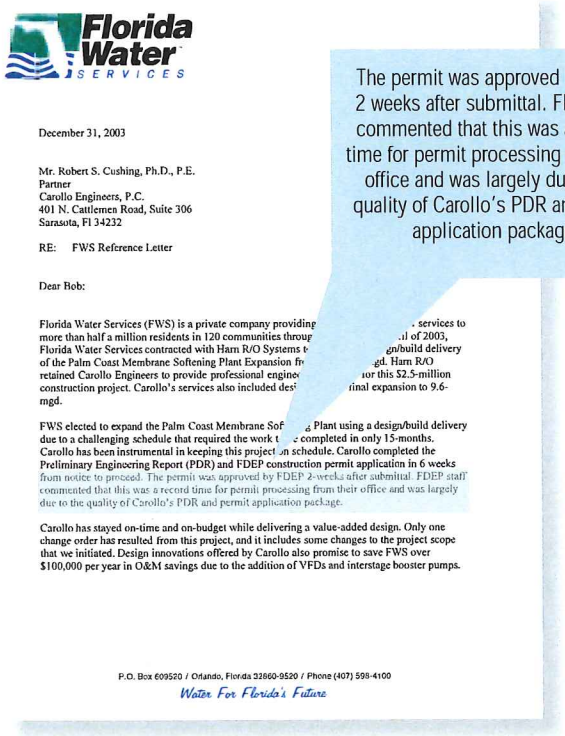
Carollo has provided engineering services for more than 700 miles of water and 2 million linear feet of wastewater pipeline. Our role often involves identifying, evaluating, and recommending alternative pipeline routes based on cost effectiveness, utility research, encroachment permits, roadway/paving replacement, pipe selection, challenging crossings, coordination with various impacted parties, hydraulic considerations, easement requirements, and constructability.

Carollo's expertise does not stop with the design of transmission and distribution systems. Through our understanding of how these systems work, we are able to identify system bottlenecks, cost saving project sequencing and alignments. Our pipeline rehabilitation projects have incorporated traditional cut-and-cover and jack-and bore construction methods, as well as micro-tunneling, horizontal directional drilling, tunnel boring, pipe bursting, fold-and-form pipe, cured-in-place pipe, and slip lining techniques.

PROJECT NAME/CLIENT	DESCRIPTION OF WORK PERFORMED
Manatee County, FL - Oneco Terrace Waterline Replacement, Phase I, II, and III	▸ Provided design, permitting and construction management services for the replacement of approximately 14,500 lineal feet of existing 2, 4, and 6-inch galvanized ductile iron, PVC and asbestos cement water main with 14,500 linear feet of 6-inch PVC, ductile iron, and HDPE waterline. Scope included determining the routing of the new water mains and developing a construction sequence to maintain service to existing residences. This project was designed for phased construction and provided fire-flow to 229 residences and commercial facilities.
Manatee County, FL - Pic Town Waterline Replacement, Phases I and II	▸ Carollo performed the design for the replacement of approximately 11,000 linear feet of 2-, 4-, and 6-inch galvanized, ductile iron, PVC and asbestos cement waterline with approximately 7,900 linear feet of 6-inch and 3,300 linear feet of 8-inch PVC and ductile iron waterline. This project was designed for phased construction and provided fire-flow to 285 residences and commercial facilities.
Manatee County, FL - Bayshore on the Lakes Waterline Replacement	▸ Carollo provided design, permitting assistance, and construction management services for the replacement of the existing 3-, 4- and 6-inch galvanized and PVC waterlines with approximately 2,400 linear feet 6-inch and 8,000 linear feet 8-inch ductile iron, HDPE, and PVC water lines. Carollo used hydraulic modeling to confirm fire flow requirements and determine the final sizing of all water lines.
Clean Water Services, OR - Dawson Creek Pump Station and Force Main	▸ Carollo provided final design services and engineering services during construction for the new Dawson Creek Pump Station and Forcemain Project. The Dawson Creek Interceptor runs along Dawson Creek through sensitive wetlands and was subject to significant surcharging. Because the challenges posed by sensitive areas, the District decided to build a new pump station and forcemain rather than replace the existing gravity sewer.
Clark Regional Wastewater District, WA - Discovery Corridor Pump Station and Pipeline Project	▸ Carollo provided system planning, flow analysis, review of sewer capacity, routing studies, and pump station evaluations for the Discovery Corridor Transmission System Project that is comprised of the Mill Creek Trunk Project, the Whipple Creek Trunk Project, and the Ridgefield Regional Pump Station Project. In addition, Carollo provided design engineering services on the Ridgefield Regional Pump Station Project and construction packages anticipated for advertisement at the end of 2013 and beginning of 2014.
Bay County, FL – Owner's Engineer: Subaqueous Wastewater Force Main Improvements Program	▸ Developed conceptual designs and cost estimates for both a combination of dredging and open cut and a combination of Horizontal Directional Drilling (HDD) and open cut for the replacement of the Subaqueous Wastewater Force Main (SWFM). The SWFM is comprised of approximately 9,750 linear feet (LF) of 36-inch to 54-inch diameter reinforced concrete cylinder pipe (RCCP).

Local Permitting

Carollo takes great pride in our close working relationship with the various local, county, state, and federal regulatory agencies and our understanding of their requirements and procedures. Because of this relationship, we have been successful in obtaining the necessary permits for many water and wastewater facilities throughout Florida. Our team has extensive experience and successfully completed the preparation of applications and coordination of regulatory agencies for securing Construction Permits, Health Department Permits, and Consumptive Water Use Permits from the Southwest and South Florida Water Management Districts.



Florida Water SERVICES

December 31, 2003

Mr. Robert S. Cushing, Ph.D., P.E.
Partner
Carollo Engineers, P.C.
401 N. Cattlemen Road, Suite 306
Sarasota, Fl 34232

RE: FWS Reference Letter

Dear Bob:

Florida Water Services (FWS) is a private company providing ... services to more than half a million residents in 120 communities throu... of 2003, Florida Water Services contracted with Ham R/O Systems t... gn/build delivery of the Palm Coast Membrane Softening Plant Expansion fr... gd. Ham R/O retained Carollo Engineers to provide professional engine... for this $2.5-million construction project. Carollo's services also included des... final expansion to 9.6-mgd.

FWS elected to expand the Palm Coast Membrane Sof... Plant using a design/build delivery due to a challenging schedule that required the work t... completed in only 15-months. Carollo has been instrumental in keeping this project on schedule. Carollo completed the Preliminary Engineering Report (PDR) and FDEP construction permit application in 6 weeks from notice to proceed. The permit was approved by FDEP 2-weeks after submittal. FDEP staff commented that this was a record time for permit processing from their office and was largely due to the quality of Carollo's PDR and permit application package.

Carollo has stayed on-time and on-budget while delivering a value-added design. Only one change order has resulted from this project, and it includes some changes to the project scope that we initiated. Design innovations offered by Carollo also promise to save FWS over $100,000 per year in O&M savings due to the addition of VFDs and interstage booster pumps.

P.O. Box 609520 / Orlando, Florida 32860-9520 / Phone (407) 598-4100
Water For Florida's Future

The permit was approved by FDEP 2 weeks after submittal. FDEP staff commented that this was a record time for permit processing from their office and was largely due to the quality of Carollo's PDR and permit application package.

The Carollo team has assisted in the permitting of multiple Florida projects.

Carollo Team members have assisted clients in obtaining a number of permits from the Broward County Public Health Department (BCPHD), Palm Beach County Health Department (PBCHD) including the largest High Rate Magnetic Ion Exchange (MIEX®) facility in the world, Broward County Environmental Protection and Growth Management Department, City of Sunrise Building Department, City of Pompano Beach Building Department, Palm Beach County Department of Planning, Zoning, and Building, Florida Department of Environmental Protection (FDEP) including one of the first municipal Biosolids Application Site Permits, South Florida Water Management District (SFWMD), Environmental Protection Agency (EPA), Underground Injection Control (UIC), National Pollutant Discharge Elimination System (NPDES), numerous Wastewater Treatment Plant Permits, Injection Well Permits, Collection and Distribution System Improvement, and Demonstration of Four-Log Virus Treatment, among others.

We understand that a "hands-on" strategy is necessary to assure favorable permit conditions. This strategy involves working closely with the appropriate regulatory agencies and stakeholders to renew, revise, or obtain favorable permit conditions. This understanding has resulted in the successful negotiation of new and renewed permits and the resolution of complex permitting issues for a number of our clients in the water and wastewater industry.

We have established an excellent working relationship with key decision makers at the FDEP, BCPHD, PBCHD, EPA, SFWMD and Environmental Protection Agency (EPA) and other regulatory agencies during the pursuit of permits on behalf of our clients. We also Relevant Water Distribution and Transmission Projects have assisted clients in negotiating administrative and consent orders and developing programs to comply with them, as well as working with regulatory agencies on permitting of complex issues such as aquifer storage recovery (ASR) wells and minimum flow and level regulations.

Our success with public agencies throughout the U.S. Awareness of the potential impacts of emerging science, policy, and regulatory issues results in significant benefits for our clients. As a result, Carollo monitors and is involved in the development of policy and regulations at the federal, state, and local levels.

PROJECT NAME/CLIENT	DESCRIPTION OF WORK PERFORMED
Punta Gorda Biosolids Site Permit Application	▸ The purpose of work is to revise and complete the Bio-solids Site Permit Application, Form 62-640.210(2)(d) including the application to include site specific Nutrient Management Plan as required by Chapter 62-640.500(1) Florida Administrative Code Rule.
Manatee County Compliance Review Assistance	▸ Manatee County manages and operates several permitted wastewater and reclaimed water facilities, which consist of: Southwest Water Reclamation Facility (SWWRF), Southeast Water Reclamation Facility (SEWRF), North Water Reclamation Facility (NWRF), Bio-Solids Dryer Facility and MARS System, with three booster pump stations. This Work Assignment provides for regulatory review and assistance, on an as-needed basis.
City of Sunrise Springtree Water Treatment Plant Improvements	▸ Carollo recently completed the design phase and permitting assistance of the City's 1.5 mgd RO WTP. The permitting included: City of Sunrise Building Department, City of Sunrise Community Development Department, Broward County Health Department, Broward County Environmental Protection and Growth Management Department, and NPDES.
Tampa Bay Energy Audit for Cypress Creek Pump Station	▸ The City of Daytona Beach owns and operates two water reclamation facilities: the Bethune Point Water Reclamation Facility (WRF) and the Westside Regional WRF. The Bethune Point WRF operates under permit number FL0025984 as issued by the Florida Department of Environmental Protection (FDEP.) The Westside Regional WRF operates under permit FLA111392 as issued by the FDEP. Both permits expire on December 9, 2013. Carollo is assisting the City with the permit renewal applications to the FDEP.
Tampa Bay Water Lithia Hydrogen Sulfi de Removal Facility Predesign, Procurement, and Construction Support Services	▸ Carollo provided assistance to Tampa Bay Water in acquiring the permits necessary to support the hydrogen sulfide treatment improvements at the Lithia Water Treatment Plant.
Palm Beach County MIEX® Treatment System	▸ Carollo coordinated permitting process with the Palm Beach County Building Department and the Palm Beach Health Department to obtain construction and final clearance for the largest high-rate MIEX® system in the world.
Pompano Beach WTP Electrical Master Plan Improvements, Phase I	▸ Carollo coordinated the permitting to secure the construction permits from the Pompano Beach Building Department and a waiver from the Broward County Health Department.

EXPERIENCE IN OTHER RELATED SERVICES

In completion of our complex and extensive projects, we are routinely required to provide all services necessary to integrate and coordinate the completion of the work.

LOCAL AWARDS/CERTIFICATIONS/OTHER RECOGNITION

CLIENT	PROJECT HIGHLIGHTS
State of the Art MIEX® System	▸ This project won an award from the Florida Institute of Consulting Engineers. ▸ The system is the largest MIEX System of its type in North America. ▸ The system has saved PBC approximately $310,000/year in operations costs. 
Expansion to 11.6 mgd	▸ This project won the 2012 Florida Section Design-Build Institute of America (DBIA) Award for Water/Wastewater projects. ▸ Provided pilot testing, design, and construction phase services for the membrane treatment system. 
Design of Pump Station and Inflow Structure	▸ The L-8 Flow Equalization Basin Project received the "Engineering Project of the Century" Award from the Florida Engineering Society. 

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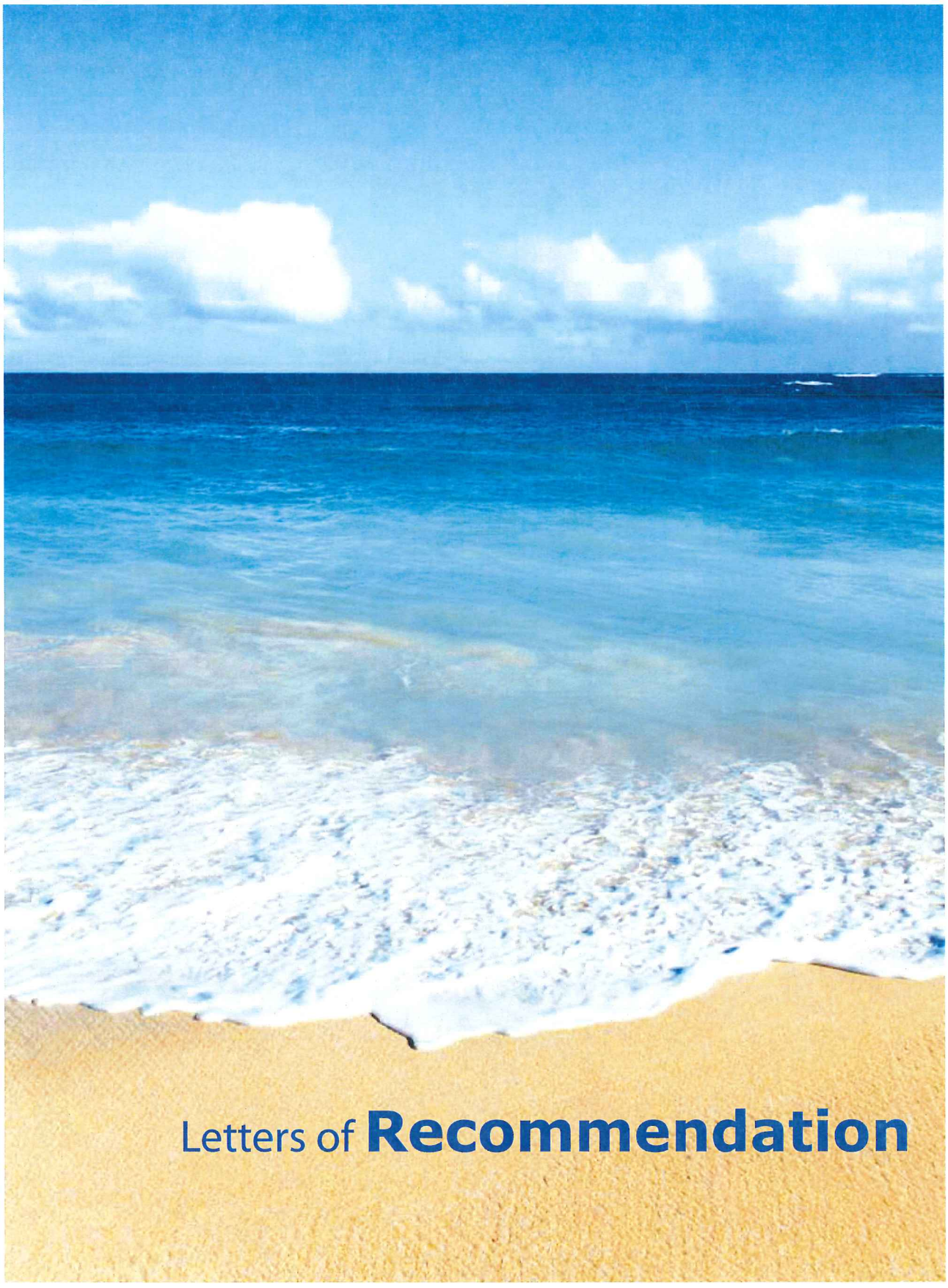

Letters of **Recommendation**

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pompano beach
Florida's Warmest Welcome

August 29, 2014

Ms. Elizabeth Fujikawa
Vice President
Carollo Engineering Inc.
9897 Lake Worth Road Suite 302
Lake Worth, FL 33467

Dear Ms. Fujikawa,

This letter is to let you know that the study, Evaluation of Long Range Treatment Options: Nanofiltration versus Lime Softening provided was excellent. The report provided very good data and financial detail in which the Utility will be able to make decision on future treatment methods and repair and replacement projects (R&R).

We now can make plans for financing of the work that we need to accomplish. The executive summary clearly communicated the path we needed to progress on. Our team enjoyed working with Carollo Engineering on this study. We look forward to working with you in the future.

Sincerely,

A. Randolph Brown
Utilities Director

Collier County
Public Utilities Division

November 7, 2014

Subject: Letter of Recommendation – Carollo Engineers

To Whom it May Concern:

Collier County sought the services of an engineering consultant to plan and design the largest and most complex utility project in the history of the County – the Northeast Regional Utility Facilities, a new 4-mgd Water Reclamation Facility (ultimate 20-mgd) and a 15-mgd Water Treatment Plant (ultimate 45-mgd), co-located on a site along with new administration, collection, and distribution facilities.

Competition for this project was particularly strong, with firms offering their best teams and ideas. Collier County chose Carollo Engineers to complete the work due to their innovative ideas, approach to involve County staff in an interactive fashion throughout all phases of the work, and the outstanding references we received from their previous clients.

True to their word, Carollo involved us intimately in the work, provided great talent for all aspects of the project, and offered a truly refreshing degree of innovation and client responsiveness. Work for the County on numerous other assignments has demonstrated this level of superior service on projects of all sizes.

Collier County gave significant weight to references from other agencies in our decision to hire Carollo. I am confident that if you choose Carollo for your project, you will be extremely pleased with that decision. If you would like to further discuss our experience with Carollo, please contact me directly. You may contact me either by e-mail, at PaulMattausch@colliergov.net, or by telephone at (239) 252-6112.

Sincerely,

Paul E Mattausch

DIRECTOR, NORTHEAST UTILITIES
PUBLIC UTILITIES DIVISION
COLLIER COUNTY GOVERNMENT
3339 TAMIAMI TRAIL EAST
SUITE 301
NAPLES, FLORIDA 33112-5361
OFFICE 239.252.6112
FAX 239.252.6684
PaulMattausch@colliergov.net

WATER RECLAMATION DIVISION
Larry G. Tunnell, PE, PG, *Manager*
9150 Curry Ford Road
Orlando, Florida 32825-7600
Telephone: 407-254-9685
Fax: 407-254-9899
Email: Larry.Tunnell@ocfl.net

October 23, 2014

To Whom It May Concern:

Carollo Engineers Inc. (Carollo) was selected by Orange County Utilities (OCU) to provide Program Management services for water and wastewater treatment. This multi-year contract began in June 2009 and ended in May 2014.

Under this Contract, Carollo successfully completed the following tasks.

- **Southwest Water Reclamation Facility Conceptual Design Update** – Prepared a planning level document for recommendation of the most appropriate biological treatment process for a new 5 mgd advanced wastewater treatment plant to serve the Southwest Service Area of Orange County, FL. The treatment goal was to achieve the Florida AWT requirement of 5:5:3:1 (concentrations of BOD:TSS:TN:TP in mg/L). A detailed planning level biological treatment alternatives analysis for five process alternatives including (a) Five-stage Bardenpho with secondary clarifiers and disk filters; (b) Five-stage Bardenpho with secondary clarifiers and tertiary membrane filters; (c) Five stage Bardenpho with membrane bioreactors; (d) Three-stage BNR with denitrification filters; and (e) Step-feed BNR. Comparison was based on several economical and non-economical parameters. A conceptual level site layout for the entire facility and preliminary activated sludge basin layouts were prepared as part of the comparison. The planning level document also included future phase add-on advanced treatment processes such as ozone followed by GAC and low and high-pressure membranes were evaluated to produce effluent amenable to direct aquifer recharge.
- **Northwest Water Reclamation Facility Phase III Expansion (expand facility from 7.5 mgd to 11.25 mgd) Value Engineering Study** – Conducted a Valve Engineering Study with a goal to reduce the capital costs from $56M to less than $35M.
- **Eastern Water Reclamation Facility Phase V Expansion (19 mgd to 24 mgd) Value Engineering Study** - Conducted a Valve Engineering Study with a goal to reduce the capital costs from $89M to less than $50M.
- **South Water Reclamation Facility Phase V Expansion (43 mgd to 56 mgd) Value Engineering Study** - Conducted a Valve Engineering Study with a goal to reduce the capital costs from $120M to less than $80M.
- **South Water Reclamation Facility (43 mgd) Optimization** – Conducted process optimization study to investigate increasing the capacity of the Southeast Oxidation Ditch from a design capacity of 7.5 mgd to 10.0 mgd.
- **South Water Reclamation Facility (43 mgd) Platform Mechanical Mixer Evaluation** – Performed a full-scale pilot study (90 days) to test side-by-side four platform mechanical mixers for anoxic basins. The results of the study were compiled and recommendations were made for OCU to include up to three manufacturers in the bid specifications.
- **South Water Reclamation Facility (43 mgd) Biogas to Energy Alternatives Analysis** – Planning level study for implementing cogeneration project using biogas produced at the anaerobic digesters at the South Water Reclamation Facility. The study included the following three elements:
    - Evaluate various energy recovery (power generation) technologies using biogas.

Carollo Evaluation
October 24, 2014
Page 2

- Perform a market survey and evaluate introduction of fats, oil, and grease (FOG) to the anaerobic digesters to increase gas production.
- Prepare an energy recovery alternatives analysis document including an executive summary

- **South Water Reclamation Facility (43 mgd) Disk Filter Evaluation Study** – Conducted a full-scale side-by-side pilot study of four major disk filters in municipal market as part of an evaluation study. The pilot study was conducted for three weeks and several parameters were monitored including Turbidity, TSS, Phosphorus, Fecal Coliforms, Headloss, Backwash volume and frequency etc. Further the evaluation included several economic and non-economic criteria. The results of the study were compiled and recommendations were made for OCU to include up to three manufacturers in the bid specifications.

Carollo's performance on this contract has been excellent. Work was performed on time for the budgeted amount. Carollo's staff is very professional and proactive in meeting the County's needs and provided the highest level of technical expertise. Carollo was reselected for this contract again in June 2014 for a period of three years with options for up to two one-year extensions.

Please call with any further questions.

Respectfully,

Larry Tunnell, P. E., P.G, Manager
Orange County Utilities
Water Reclamation Division

Sarasota County

November 3, 2014

To Whom It May Concern:

RE: Professional Performance of Carollo Engineers

Sir or Madam:

Sarasota County has maintained a professional relationship with the firm of Carollo Engineers for over ten years. During that time, Carollo has provided us with consulting and engineering services for projects that include research, operation and maintenance, renewal and replacement, and the design and construction of improvements to the county's water and wastewater treatment systems. Most recently, we have been working with Carollo on a major project involving the multi-year expansion of the Central County Water Reclamation Facility which is one of our County's large regional treatment facilities. While Carollo is the local recognized leader in treatment technology, they have also provided valuable services with respect to all forms of utility design and construction.

Staff members of the County have been extremely pleased with the cost, quality, timeliness, and responsiveness of the professional consulting and engineering services that we have received from Carollo. Our association has been very positive and we have always found the principals, staff members, and support staff to be above average in professional capability.

I am confident that our favorable experience with Carollo is reflective of the level of service and satisfaction that others can expect, and I highly recommend them to other potential clients who are seeking quality, professional engineering services that are personally customized to meet their particular project requirements.

Sincerely,

Gregory Rouse, P. E. (FL)
Utilities Technical Manager
Sarasota County Public Works

CITY OF ORLANDO

October 31, 2014

SUBJECT: Carollo Engineers, Inc.
Letter of Recommendation
City of Orlando City Project 6464
Conserv II Biosolids Dewatering System Improvements

To Whom It May Concern:

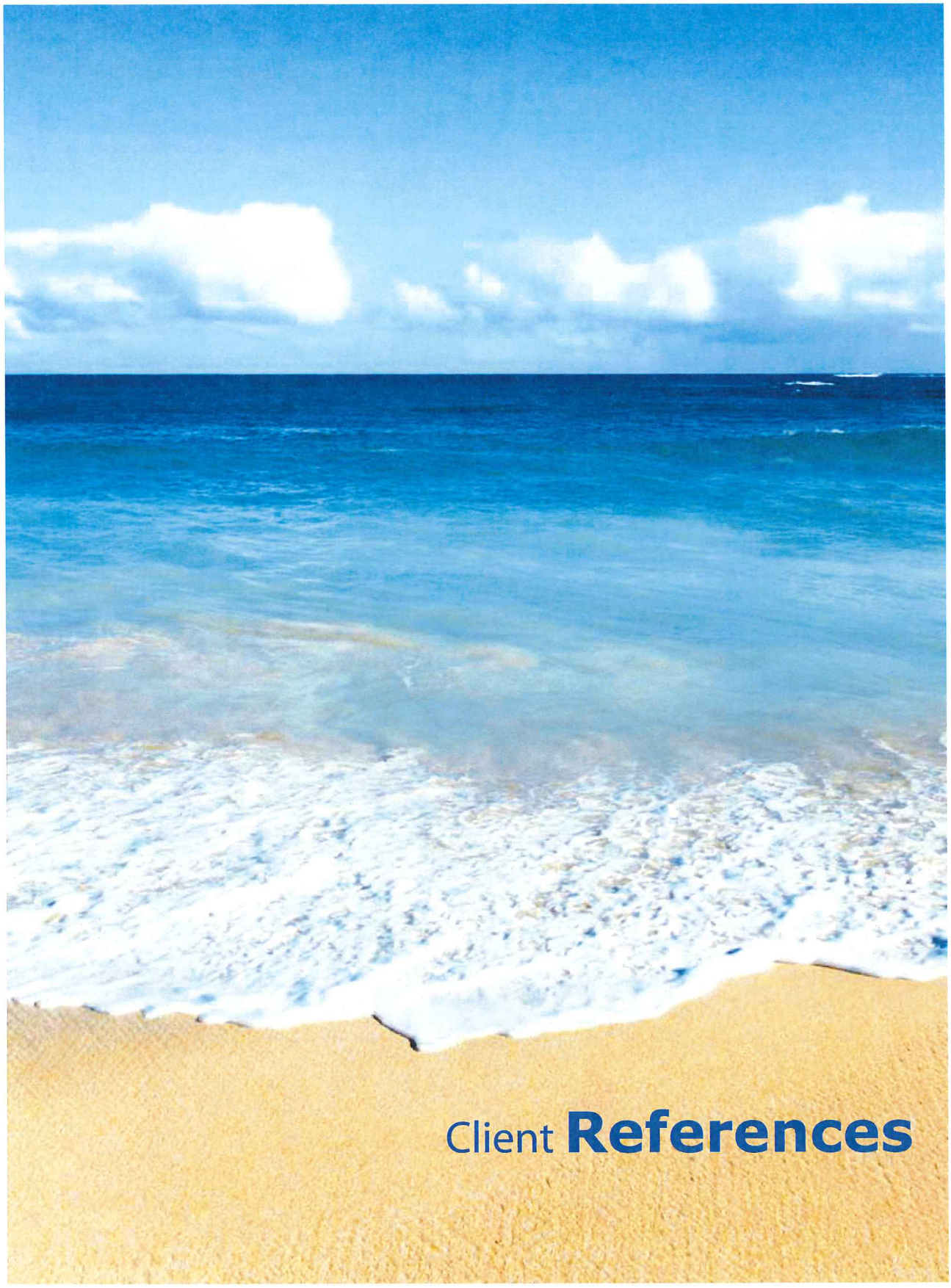
In 2013, the City of Orlando (City) selected Carollo Engineers, Inc. (Carollo) for a $6.5M project to replace the aging biosolids dewatering system at the City's Conserv II Water Reclamation Facility (WRF). The preliminary phase of the project included side-by-side pilot testing of multiple mechanical dewatering systems at the WRF, for which Carollo developed the Pilot Test Protocol, oversaw the testing, and analyzed and summarized the pilot test data. Also included in the preliminary phase of the project was a complete evaluation of the existing dewatering system at the WRF, including the mechanical dewatering equipment, sludge pumping, polymer system, dewatered sludge conveyance system, and odor control system. A series of technical memorandums were developed that formed the basis of design for the dewatering system components.

The City is currently preparing to enter into the final design phase of this project with Carollo. This was the first time we hired Carollo for a design project and we are extremely pleased with that decision. From the start, they have performed very professionally, been extremely responsive and have brought the most qualified and appropriate personnel to service us and our needs as a client. Carollo has delivered on all their promises plus more. The City is looking forward to completing the next phases of this project with Carollo.

In my opinion, Carollo is a top-notch consulting firm with a staff of highly skilled engineers. Based upon my experience on this project, I would have a strong willingness to hire Carollo for future work involving wastewater treatment processes.

Sincerely,

Kristi L. Fries, P.E.
Project Manager
kristina.fries@cityoforlando.net
407-246-3353



Client **References**

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1

Category:
Continuing Engineering Services

Firm Responsibility: PRIME

Owner's Representative:
Colin Groff, *Assistant City Manager*
City of Boynton Beach
124 E. Woolbright Road, Boynton Beach, FL 33435
Ph: (561) 742-6300 | Fax: (561) 742-6298
groffc@bbfl.us

Completion Date: 2014 - Ongoing

CITY OF BOYNTON BEACH, FL

WTP Plant Improvements and General Consulting Services

Carollo began serving the City of Boynton Beach with the design of several improvements to their Water Treatment Plants and have continued to serve the City under a General Consulting Services contract. Projects have included:

- **Ion Exchange Improvements (project is complete).** Includes design/build of a 16 mgd MIEX® system and ancillary systems. Included modifications to the existing raw water supply system located at the West WTP will be required. These modifications included connections to the existing raw water main and transmission line to transfer water was required from the Western Wellfield to the East WTP and modifications to the existing CIP spent solution system for waste brine disposal.
- **Wellfield and Transmission Line Hydraulic Analysis.** Analyzed yield of wellfield and transmission of raw water from Western Wellfield to East WTP
- **West WTP Centralized A/C Plant Assessment.** The City's West Water Treatment Plant (West WTP) was built in the early 90's and has had ongoing issues with the HVAC systems on the second floor of the membrane building since that time. The second floor houses both offices and the main laboratory. Carollo provided analysis of a new centralized chilled water system at the West WTP as well as other existing A/C systems throughout the plant with a centralized A/C chiller system.
- **Stormwater Modeling.** The City has experienced episodes of severe flooding due to rain events. Carollo investigated alternatives to alleviate the flooding in five selected neighborhoods. This investigation included hydrologic and hydraulic modeling to determine alternatives plus preparation of cost estimates for the improvement.
- **Utilities Management Optimization Plan.** Carollo developed a Utilities Management Optimization Plan (UMOP) that supported strategic, long-term decision-making regarding the need and timing of expansion, repair, or replacement of existing facilities, and the need to build facilities to meet regulatory requirements and efficiency goals. This included the development of four engineering models (e.g., hydraulic models) to simulate existing conditions of the Boynton infrastructure and to plan for future improvements through the development of a CIP. The output of these models (e.g., CIP projects) is used as input to the UMOP.
- **Asset Management.** This work includes conducting a condition assessment of the City's treatment plants, distribution system, collection system (including master lift stations), and reuse system. In addition, Minetek, an asset management program will be used for the City's long-term development of capital costs.

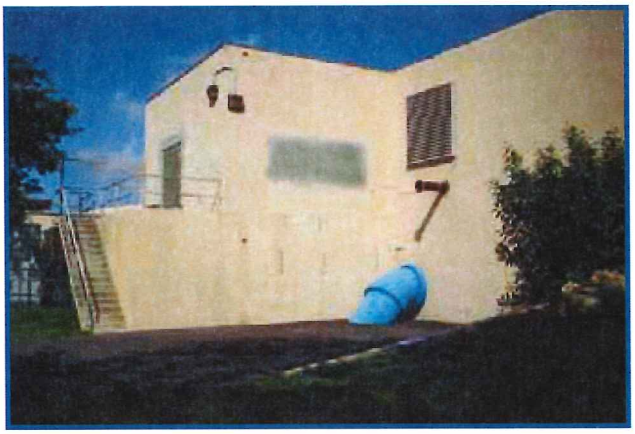
2

Category:
Continuing Engineering Services

Firm Responsibility: PRIME

Owner's Representative:
Randy Brown, *Utilities Director*
City of Pompano Beach
1205 NE 5 Avenue, Pompano Beach, FL 33060
Ph: (954)-545-7044 | Fax: (954) 545-7046
randolph.brown@copbfl.com

Completion Date: 2011 - Ongoing



CITY OF POMPANO BEACH, FL

Consulting Services Engineering Contract

Carollo, under the Consulting Services Engineering Contract for the City of Pompano Beach, completed several studies and designs. These include the following:

- **Electrical Master Plan, Phase I and II, Design.** Developed a high service pump station electrical master plan followed by implementation of identified Phase I improvements for the replacement and upgrade of power distribution system with state-of-the-art equipment to increase the reliability of the electrical system for the WTP and compliance with current building and life safety codes.
- **Energy Performance Study.** Review of the possible addition of variable frequency drive units to the high service pump station and replacement of HVAC equipment. The review included safety, long-term reliability, and value of the proposed products.
- **Prepurchase for Phase I and II Electrical Master Plan Improvements.** Included prepurchase of 4160V Motor Control Centers (MSSc). The MCCs are a component of Phase I and II upgrades.
- **Lime versus Nanofiltration WTP Evaluation.** Evaluated the advantages and disadvantages of the expansion of the nanofiltration WTP versus an upgrade of the lime softening WTP.
- **Avondale Stormwater Improvement Project.** Assessed the feasibility, the regulatory permit restrictions, the cost impacts, and the flood reduction effectiveness of each potential alternative.
- **High Service Pumps Improvement Project.** The design of improvements to provide ample capacity and reliability for the replacement of switchgear to meet current and future energy demands and service for the High Service Pump Facility.
- **Membrane Concentrate Disposal Alternative Study.** Carollo evaluated alternatives for emergency disposal of membrane concentrate and implemented the preferred alternative.
- **Reuse Treatment Plant Permit Renewal.** Carollo prepared application materials necessary for the renewal of the existing operating permit for the City's Reuse Treatment Facility, which is permitted to treat 7.5 mgd of reuse domestic wastewater.
- **WTP Transfer Pump Station Improvements.** This project provides for redundancy and reliability for the City's water treatment plants, specifically the transfer of treated water into the Clearwell, including assessment of remedies to an apparent hydraulic bottleneck into the transfer station, selection of a motor and the Installation of two vertical turbine pumps owned by the City, upgrade of electrical equipment for the transfer station, and design of ancillary improvements for HVAC, access, lighting and wall insulation in the transfer station.

3

Category:
Continuing Engineering Services

Firm Responsibility: PRIME

Owner's Representative:
Timothy Welch, *Director of Utilities*
City of Sunrise
777 Sawgrass Corporate Parkway, Sunrise, FL 33325
Ph: (954) 888-6055 | Fax: (954) 846-7404
twelch@sunrisefl.gov

Completion Date: 2011 - Ongoing

CITY OF SUNRISE, FL

Continuing Engineering Services Contract

Carollo, under the Continuing Services Contract for the City of Sunrise, completed several studies and designs, as well as stand-alone projects where Carollo was selected through the CCNA process for a project-specific assignment. These include the following:

- **Sawgrass Water Treatment Plant Expansion Design.** Carollo performed study and design services for a 3-mgd RO WTP to be constructed at the existing 18-mgd Sawgrass WTP to allow the facility to expand it to 6 mgd in the future.
- **Sawgrass Water Treatment Plant Expansion Study.** Carollo worked on the study phase that included the evaluation of potential processes to expand potable water treatment capacity, improve overall facility water recovery, improve potable water quality, and provide an analysis of options for new brackish water treatment facilities.
- **Sawgrass Water Treatment Plant Membrane Element Replacement Evaluation.** Carollo performed an evaluation of the industry available NF membranes to determine which would be most appropriate for use in this replacement activity.
- **Sawgrass Water Treatment Plant Rerate Improvements.** Carollo evaluated the existing 18-mgd NF treatment system and provided the necessary technical and permitting support to re-rate the NF facility from 18 to 24 mgd. Carollo also provided construction management services (CMS) to include construction contract administration and inspection services by staff experienced in the discipline fields that correspond to the inspection activity.
- **Springtree Water Treatment Plant Improvements.** Carollo completed the study phase of this project that included the evaluation of potential improvements for rehabilitation and renewal of a 24-mgd lime softening facility. Carollo also performed pilot testing of ion exchange and ballasted flocculation technologies for organics control alternatives. Carollo also provided construction management services to include construction contract administration and period inspection services during construction of sodium hypochlorite tank replacement project. The project includes replacement of four existing 15,000 gallons each FRP sodium hypochlorite solution storage tanks with new FRP tanks, piping, accessories, and level indicators.
- **Springtree Water Treatment Plant Lime Residuals Handling and Disposal Evaluation.** Carollo was selected to evaluate lime handling, solids minimization, and disposal options. Due to the limited dewatering lime sludge storage area available at the plant site and the nuisances associated with the dust that is created by storing the sludge in an open area, the City desired to improve operations of the existing lime sludge thickening and/or dewatering process.

4

Category:
Continuing Engineering Services

Firm Responsibility: PRIME

Owner's Representative:
Scott Kelly, P.E., *Assistant City Manager*
City of West Palm Beach
1045 Charlotte Avenue, West Palm Beach, FL 33401
Ph: (561) 822-1400 | Fax: (904) 682-6484
sdkelly@wpb.org

Completion Date: 2015 - Ongoing

CITY OF WEST PALM BEACH, FL

West Palm Beach Water Treatment Plant Quality Deviation

Category 1 ENGINEERING

Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM

The City of West Palm Beach owns and operates a surface water treatment plant. In the Spring of 2015, finished water turbidity levels began to rise and came close to regulatory limits. The City retained Carollo Engineers to assist with diagnosing the cause of the turbidity excursions, develop near and long-term solutions, and also to assist with communicating with stakeholders including their City Commission. To support the City, Carollo responded with a nationally recognized water quality and treatment expert on-site in less than 24 hours from receiving the request for assistance. Carollo immediately initiated a situational audit including:

1. Interviews and plant inspection
2. Data gathering/analysis
3. Jar testing
4. Particle charge analysis and supplemental testing

Recommended immediate changes lowered finished water turbidity and provided relief from the risk of regulatory violation. Follow-up activities include longer-term monitoring, testing, and analysis with recommendations for future improvements. Additionally, Carollo has assisted the City with long-term capital improvement planning at the water treatment plant.

5

Category:
Continuing Engineering Services

Firm Responsibility: PRIME

Owner's Representative:
Greg Coffelt, *Principal Engineer*
South Florida Water Management District
3301 Gun Club Road, West Palm Beach, FL 33406
Ph: (561) 682-6853 | Fax: (561) 682-6484
gcoffelt@sfwmd.gov

Completion Date: 2013 - Ongoing

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, FL

L-8 Reservoir Intake Structure and Pump Station Study

Carollo Engineers was selected by the South Florida Water Management District (SFWMD) for the L-8 Reservoir Modifications, Pump Station, and Inflow Structure project. This project allows for full functionality of a 46,000 acre-feet man-made reservoir in Palm Beach County, Florida. The reservoir provides storage for water that is released in a controlled manner into the regional canal system (shared by several Counties), for restoration under the Comprehensive Everglades Restoration Plan, and for water quality buffering in Southeast Florida's Stormwater Treatment Areas (STAs) – a vast amount of wetlands that maintain the environmental equilibrium of the region.

The new infrastructure that makes this possible consists of a 450 cfs (291 mgd) pump station, a 3,000 cfs (1,940 mgd) inflow structure, and armoring modifications of the levees that surround the reservoir. Carollo Engineers completed preliminary studies and a conceptual plan for the project improvements and implementation in 2011. Results of this preliminary phase were used by the SFWMD to consider an alternative delivery method for the subsequent phases of the project.

In 2012, the SFWMD decided to implement the project using an alternative delivery approach. Carollo Engineers convened a workshop with SFWMD staff where alternative delivery approach alternatives were discussed with the SFWMD deciding on the design-build (D/B) delivery approach for the L-8 project. Carollo Engineers was then retained to serve as the Owner's Advisor throughout the D/B procurement and implementation of the project.

Carollo's services for the D/B Owner's Advisor role include assisting the SFWMD with the following:

- Development of technical criteria to be used in design and construction. This included stipulations for the D/B team meeting guaranteed maximum energy consumption requirements for the new pump station to encourage efficient energy use over the life-cycle of the pump station.
- Creation of the Request for Qualifications, qualifications review, Request for Proposal, collaboration meetings with proposers, technical proposals evaluation, and cost proposals evaluation.
- Technical review during for the design to ensure compliance with the project technical criteria.
- Permitting for local, state, and federal permits.
- Inspection and engineering services during construction.

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EXPERIENCE OF KEY PERSONNEL

Liz Fujikawa, P.E., LEED AP

Project Manager

Category 1 ENGINEERING

"The engineers that I have worked with over the years tend to be either academic and concept oriented or practical and real-world focused...the challenge is finding an engineer who blends all of these skills and Liz is that engineer...Liz is more than a consultant...easy to discuss topics with...carefully considers questions and suggestions. It is for these reasons that I hold her ideas and recommendations in such high regard."

– William D. Koepsel, Jr., Director of Operations, Central Lake County Joint Action Water Agency

MEETING YOUR REQUIREMENTS

- Based in Carollo's Lake Worth office.
- Successfully managing continuing engineering contracts for South Central Regional WWTDB, Boynton Beach, Pompano Beach, and Broward County.
- 25 years of experience
- MSE – Environmental Engineering; BS – Chemistry
- Professional Engineer: FL, DE, IL and WI

Liz, a vice president with Carollo, has more than 25 years of engineering experience. She has served in roles ranging from project manager, technical specialist, to principal-in-charge for municipal clients. Her experience includes studies through construction management for projects with capital construction costs of up to $240 million, including two of the U.S.'s largest treatment plants: Chicago's Jardine Water Plant (1,000 mgd), and the Metropolitan Water Reclamation District of Greater Chicago's Stickney Water Reclamation Plant (1,200 mgd). This broad range of experience will be an asset to your Continuing Engineering Services contract. As Project Manager, Liz will bring the necessary resources and focus on the needs of the City.

Relevant Project Experience

New Bulk Sodium Hypochlorite Storage and Feed Facility, South Central Regional Wastewater Treatment Plant, FL | Project Manager
The facility will receive and store 12.5% sodium hypochlorite and meter the feed to the inlet to the tertiary filters for reuse.

Electrical Evaluation, South Central Regional Wastewater Treatment Plant, FL | Project Manager
Work included evaluation of alternative 4160V versus 480V supply for replacement of the transformers feeding the filters.

Potable Water Storage Tanks, Pumping Systems, and Chemical Systems Project, Broward County, FL | Project Manager
Work includes the study, design and construction phase management for new ground storage tanks, new high service pump stations, and new sodium hypochlorite and ammonia feed and storage systems.

Ion Exchange Treatment System and East Water Treatment Plant Improvements Progressive Design Build Project, City of Boynton Beach, FL | Project Manager
Work includes permitting, design, and construction of a 16.0 mgd ion exchange system, associated ancillary systems, and west wellfield and transmission line modifications.

Utility Management and Optimization Project, City of Boynton Beach, FL | Client Service Manager
Work included master planning and hydraulic modeling for water, sewer, reuse and stormwater systems.

Evaluation of Long Range Treatment by Lime Softening Versus Nanofiltration, City of Pompano Beach, FL | Project Manager
The project evaluated advantages and disadvantages to bring the existing lime softening treatment plant into a 20-year life cycle condition versus an expansion of the nanofiltration treatment plant.

Electrical System Master Plan and Upgrades, City of Pompano Beach, FL | Project Manager
The project consisted of master planning and design services for replacement and upgrade of electrical power distribution system with state-of- the-art equipment and materials.

Hialeah-Preston Water Treatment Plant Chemical System Improvements, Miami-Dade County, FL | Technical Reviewer
Technical reviewer for Miami-Dade County's 225-mgd Hialeah-Preston Water Treatment Plant chemical systems improvements.

Randy Braley, P.E.

Project Manager

Category 1 ENGINEERING

Randy, a vice president with Carollo, has 35 years of experience serving as strategist and manager for challenging water and wastewater projects for numerous public and private clients, across the U.S. and abroad.

Prior to joining Carollo, he served as the leader of global business units for a large international consulting firm. He created a sustainable and profitable business operation in Africa, Middle East, and Central Asia Region. He served clients with projects covering water supply, treatment and distribution; wastewater collection, treatment and reuse; sustainability; management consulting; institutional and capacity building; program management; and public education.

MEETING YOUR REQUIREMENTS

- Based in Carollo's Lake Worth office.
- 35 years of experience
- MS – Civil Engineering; BS – Civil Engineering
- Professional Engineer: FL, CT, ME; Civil Engineer: MA, NH
- Board Certified Environmental Engineer, American Academy of Environmental Engineers

Relevant Project Experience

Study and Design of a Backup Concentrate Disposal System, City of Pompano Beach, FL | Technical Advisor
Technical advisor for the study and design of a backup concentrate disposal system for a 10-mgd nanofiltration plant for the City of Pompano Beach, Florida. The project includes identification and evaluation of disposal alternatives and selection of a recommended plan, followed by design and bidding services.

South Central Regional Wastewater Treatment Plant, City of Delray Beach, FL | Technical Advisor
Technical advisor for a temporary, bulk sodium hypochlorite disinfection feed system for the 40-mgd South Central Regional Wastewater Treatment Plant in Delray Beach, Florida.

Southwest Water Reclamation Facility, City of St. Petersburg, FL | Project Manager
Project manager for a study to assess preliminary treatment and expansion of the headworks at the 20-mgd Southwest Water Reclamation Facility in St. Petersburg, Florida. The study included complex hydraulic analyses for the headworks under various flow conditions including wet weather flow by-pass scenarios, and development and evaluation of alternatives to expand the headworks' peak flow capacity from 40 to 70 mgd.

Assessment Study and Design Project, Manchester Water Works, City of Manchester, NH | Project Manager
The scope of work included a water supply study, environmental assessment study, and conceptual design for the including a river intake structure, 40-mgd raw water pumping station, and a 5-mile transmission line.

Wastewater Reclamation Facilities Design Project, Public Utilities Board, Ministry of the Environment, Singapore | Project Specialist
Created the conceptual design for the expansion of secondary wastewater treatment works at Ulu Pandan to an advance treatment capability of 120 mgd. Applied first-of-its-kind ultra-compact and completely enclosed technologies using the A-B activated sludge process with provision for nutrient removal.

Facility Planning and Conceptual Design of the 570-mgd Deer Island Wastewater Treatment Plant, Massachusetts Water Resource Authority, City of Boston, MA | Project Manager
Responsibilities included evaluation and design of preliminary treatment, primary treatment, and secondary sedimentation, including innovative stacked clarifiers for a dramatically reduced footprint.

Build-Operate-Transfer (BOT) Project, Sulaibiya Water Reclamation Facility | Project Director/ Program Manager
Led program management and BOT advisory services on the 99-mgd water reclamation facility—the world's most advanced project of its kind at the time, which produces high quality water for unrestricted reuse and aquifer recharge. The $450-million privately financed, 30-year concession project uses biological nutrient removal followed by ultrafiltration and reverse osmosis to meet extraordinary effluent requirements.

Facilities Planning, and Conceptual Design Project, South Essex Sewerage District, City of Salem, MA | Project Manager
This 30-mgd secondary wastewater treatment facility in urban Salem included a region-wide siting process, and a compact design with stacked secondary clarifiers.

Lyle Munce, P.E.

Project Manager

Category 1 ENGINEERING

MEETING YOUR REQUIREMENTS

- Based in Carollo's Lake Worth office.
- 25 years of experience
- MS – Sanitary Engineering
  BS - Civil Engineering
- Professional Engineer: FL

Lyle, a vice president with Carollo Engineers, has 25 years of environmental/ civil engineering experience, with an emphasis on municipal water systems. He has served as client manager, project manager, project engineer, quality control coordinator, technical reviewer, and construction manager for numerous multi-disciplinary water related projects. Lyle's project experience and technical expertise include the following: Membrane Treatment, Lime Softening Treatment, Pilot and Bench-scale Programs, Raw and Finished Water Quality Analysis, Concentrate Injection Well Design and Permitting, Air Stripping and Odor Control, Preliminary and detailed Final Design of Water Treatment Systems, Water Well Design and Permitting, Comprehensive Master Planning, Water Treatment Feasibility Evaluations, Design Build Document Production, Construction Management and Administration, Design of Water and Wastewater Transmission Facilities, Utility System Acquisition, and Water Systems Operations Consultation.

Relevant Project Experience

Springtree Water Treatment Plant Improvements Project, City of Sunrise, FL | Project Manager

Project elements include general renewal and replacement of the 24-mgd lime softening facility, design of a fluidized bed ion exchange treatment system, a 1.5-mgd RO treatment system and the repurposing of an existing ASR well to a Floridan production well. General site improvements included stormwater management system redesign as part of the overall project.

Florida Water Treatment Plant Magnetic Ion Exchange (MIEX®) Treatment System No. 2, Palm Beach County Water Utilities Department, Palm Beach County, FL | Project Manager

Responsible for design of a 16.4-mgd MIEX® treatment system to achieve color reduction and dissolved organic carbon removal from the source water, as well as reduce disinfection by-products (DBPs).

Nitrification Plan, Palm Beach County Water Utilities Department, Palm Beach County, FL | Project Manager

Prepared a plan to outline procedures for preventing, detecting, monitoring, and responding to nitrification episodes, with the overall goal of maintaining consistent target water quality throughout the County's distribution system.

Florida Distribution System Security Enhancement Program - Phase 1 Study, Palm Beach County Water Utilities Department, Palm Beach County, FL | Partner-in-Charge/ Project Manager

This project is the first phase of a distribution system upgrade, which includes performing a TEVA-SPOT analysis to determine the best locations for sensor placement in the distribution system. The project also involves the latest software technologies available for distribution system security.

Florida Water Conservation Evaluation, Palm Beach County Water Utilities Department, Palm Beach County, FL | Project Manager

Investigated whether water conservation could be a part of the future solution to meeting water needs in the most cost-effective manner. The evaluation showed that water demands could be reduced 8-14 percent over 20-30 years, and that water conservation could provide up to 35 percent of new water needs by 2035. The 30-year present value of cost savings could be as high as $30 million.

On-Site Hypochlorite System Design, Miami-Dade Water & Sewer Department, FL | Project Manager

Design of the Miami-Dade Water & Sewer Department's (MDWASD's) $25 million on-site sodium hypochlorite system. This design was performed as part of the MDWASD South District High Level Disinfection project. The design project consisted of a 15,000 pound per day (lbs/day) facility, expandable to 21,000 lbs/day, including chemical feed, pumping, carbon filtration, water softening, and product distribution. The system is currently the largest proposed facility of its type in the country.

Chris Reinbold, P.E.

Project Engineer

Category 1 ENGINEERING

Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM

Chris, an associate with Carollo, has 14 years of experience that includes study, design, permitting, and construction administration services for treatment plants, pumping stations, pipelines, and chemical systems. His continual focus for clients is to seek additional value, savings, or other operational enhancements on each project. Since he began his career, Chris has had opportunities to work with many advanced technologies, which include NF/RO membranes as well as designing the world's largest high rate magnetic ion exchange system. He brings this diverse experience to the City's project to help ensure a successful result.

MEETING YOUR REQUIREMENTS

- Based in Carollo's Lake Worth office.
- 14 years of experience
- MS – Civil Engineering
  BS – Civil Engineering
- Professional Engineer: FL, NC

Relevant Project Experience

Florida Springtree WTP Phase II Improvements and Rehabilitation, City of Sunrise, FL | Project Manager

This project includes renewal and upgrades to the existing (4) 6-mgd each solids contact clarifiers, additional of raw water aerators, replacement of the south lime silo, concrete structure rehabilitation for the filters and flume, demolition of the existing east filters and transfer pump, addition of a new transfer pump station rated for 12-mgd, addition of a water stabilization (CO_2) system, extension of washwater return piping to connect to the two west softeners, and replacement of the existing rotary drum vacuum filter belts and appurtenances for lime sludge dewatering.

Study/Design/Construction of WTP NO. 2 Filter Replacement Project, Palm Beach County Water Utilities Department, Palm Beach County, FL | Project Manager/ Construction Manager

This project includes a new filter structure with dual media filters rated for an initial capacity of 16.4 mgd and designed to be high rated to an ultimate capacity of 25 mgd. The filter structure also includes a clearwell, transfer and backwash pumps, air scour blowers, electrical room, and chemical feed connections.

Water Master Plan Update, Palm Beach County Water Utilities Department, Palm Beach County, FL | Technical Advisor

Project included development of a new water master plan for PBCWUD to recommend capital improvements to meet the County's 20-year water needs. Demand projections developed by PBCWUD were reviewed and confirmed, and updated peaking factors were developed based on historical production and SCADA data.

Sawgrass 3-mgd Reverse Osmosis Water Treatment Plant, City of Sunrise, FL| Project Manager

This project included the preparation of a procurement bid package and the general construction bid package, including 3 mgd of reverse osmosis treatment at the existing 18-mgd Sawgrass Water Treatment Plant. Also included in this project was the uprating of the existing nanofiltration treatment system from 18 to 24 mgd along with other renewal and improvement items.

Springtree Water Treatment Plant Sodium Hypochlorite Tank Replacement, Reverse Osmosis Water Treatment Plant, and Controls Building and High Service Pump "A", City of Sunrise, FL | Design Manager

The project was executed as three separate bid packages, which included sodium hypochlorite tank replacement, a new RO water treatment plan, and a new control building and HSP.

System 3 Water Treatment Plant Permeate Pipeline Replacement, Palm Beach County Water Utilities Department, Palm Beach County, FL | Project Manager

Prior to designing the new piping, a study was conducted to investigate repair or replacement options for a deteriorating 42-inch diameter ductile iron permeate pipeline.

System 8 Water Treatment Plant Train 3 Softener Bypass and Ion-Exchange Pilot Study, Palm Beach County Water Utilities Department, Palm Beach County, FL | Project Manager

An ion-exchange pilot study was conducted to evaluate the potential to stabilize the softener effluent by bypassing a portion of raw water around the softener and into the influent stream of the 10-mgd ion-exchange system.

Mark Ludwigson, P.E.

Project Engineer

Category 1 ENGINEERING

Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM

Mark has 14 years of engineering experience with projects across the country. He has worked solely in the water environment industry since 2004 and is passionate about water and wastewater systems. He was the lead engineer for a prominent circular clarifier manufacturer for a number of years. Mark has brought success to a variety of water projects, whether serving as project manager or project engineer. He is experienced with for civil, mechanical, and process design discipline work.

MEETING YOUR REQUIREMENTS

- Based in Carollo's Lake Worth office.
- 14 years of experience
- MS – Engineering
  BS – Engineering Mechanics
- Professional Engineer: FL, WI
- Certificate, Quality Management in the Design Organization, American Society of Civil Engineers, FL 2014
- Certifiation 10-hour OSHA Construction Safety and Health, Safe-Con, LLC, 2013
- Certificate, Project Management Qualified, Management and Strategy Institute, 2014
- Certificate Confined Space Attendant, Entrant, and Entry Supervisor, Symbiont, WI 2009

Relevant Project Experience

Springtree Water Treatment Plant Phase II Improvements and Rehabilitiation Project, City of Sunrise, FL | Project Engineer

Work includes rehabilitating the solids contact clarifiers, replacement of a lime silo, concrete repairs, demolition of filters, a new 12 mgd transfer pump station, a new carbon dioxide storage and feed system, thickener supernatant return pipe modifications, and improvements to the lime sludge thickening and dewatering process, including new rotary drum vacuum filters.

New Potable Water Storage Tanks and Pumping Systems for Four Site Districts, Broward County, FL | Project Engineer

Leading the process and mechanical designs for the following improvements: ground storage tanks ranging in size from 1.5 MG to 5.0 MG, high service pump stations ranging from 8 mgd to 30 mgd, chemical feed systems, 4-log disinfection systems, yard piping, and associated improvements.

Southwest Water Treatment Plant Ion Exchange and Other Improvements Project, City of Sunrise, FL | Project Engineer

Designed for the addition of an ion exchange treatment system, lime storage silo, and lime slaker and feed system.

Evaluation of Lime Feed Improvmeents, City fo North Miami Beach and NMB Water, FL | Project Manager

Improvements were identified the existing lime feed storage and feed systems. Several upgrade alternatives were presented including layouts and cost estimates.

Construction Management Services for WTP No. 2 Filter Replacement Project, Palm Beach County Water Utilities Department, Palm Beach County, FL | Project Engineer

This project includes a new filter structure with dual media filters rated for an initial capacity of 16.4 mgd and designed to be high rated to an ultimate capacity of 25 mgd. The filter structure also includes a clearwell, transfer and backwash pumps, air scour blowers, electrical room, and chemical feed connections.

Lift Station adn Forcemain Facility Plant for the Cherry Valley Pump Station, Rock River Water Reclamation Distriction, City of Rockford, IL | Project Engineer

The project included increasing the effective wet well volume by 100 percent, increasing the firm pumping capacity to 18.5 mgd, assessing the existing 30-inch prestressed concrete cylinder pipe (PCCP) forcemain, and designing a new 13,800 foot long force main, with a combination of horizontal directional drilling and open cut methods.

Dean Milton, P.E.

Lead Civil Engineer
Lead Conveyance/Transmission

Category 4 CIVIL ENGINEERING

Category 9 WATER RESOURCES STORMWATER MANAGEMENT TEAM

Dean, an associate with Carollo, has 21 years of experience in design, and construction for water and wastewater projects. He has experience in the design of wastewater and reuse water force mains, including routing studies, predesign, final engineering design and construction. Experience related to reuse, water distribution and pumping includes hydraulic modeling, engineering design and construction of wastewater and reuse pumping systems.

MEETING YOUR REQUIREMENTS

- 21 years of experience
- MS – Environmental Engineering
  BS – Civil Engineering
- Professional Engineer: FL

Relevant Project Experience

Carlton Water Treatment Plant 5 MG Finisehd Water Storage Tank, Sarasota County, FL | Project Manager
Responsibilities included design and permitting.

Phase 3A 5-MG Finished Water Storage Tank, Peace River Manasota Regional Water Supply Authority, FL | Project Manager/Engineer
Responsibilities included final design of a finished water storage tank and permitting.

Pic Town Waterline Replacement Project, Manatee County, FL | Project Manager/Engineer
Responsibilities included design and replacement of 2, 4, and 6-inch galvanized, ductile iron, PVC and asbestos cement waterline with approximately 7,900 linear feet of 6-inch and 3,300 linear feet of 8-inch PVC and ductile iron waterline. This project was designed for phased construction and provided fire-flow to 285 residences and commercial facilities. The design included a jack-and-bore under the Florida Department of Transportation right-of-way. Responsibilities included overall project management during design and construction, permitting, development of plans and specifications, construction cost estimates, shop drawing reviews, and site inspections.

Reverse Osmosis Water Treatment Plant Expansion, North Lee County, FL | Project Engineer
Responsible for civil and mechanical design layouts of a 5-mgd finished water pump station with can type, vertical turbine pumps and two 2- million gallon ground storage tanks. Also responsible for the coordination of geotechnical, structural, architectural, electrical, and mechanical efforts preparation of technical specifications and bid documents; preliminary route location and predesign of 7,100 feet of 30-inch ductile iron finished water transmission main.

Oneco Terrace Waterline Replacement Project, Manatee County, FL | Project Manager/Engineer
The project included design and replacement of 2, 4, and 6-inch galvanized, ductile iron, PVC and asbestos cement waterline with approximately 14,500 linear feet of 6-inch PVC, ductile iron and HDPE waterline. This project was designed for phased construction and provided fire-flow to 229 residences and commercial facilities. The design included both traditional open-cut and horizontal direction drilling (HDD) for the waterline construction. Responsibilities included overall project management during design and construction, permitting, development of plans and specifications, construction cost estimates, shop drawing reviews, and site inspections.

Bayshore on the Lakes Waterline Replacement Project, Manatee County, FL | Project Manager/Engineer
The project included the design and replacement of 4-, 6-, and 8-inch waterline with approximately 10,000 linear feet of 6- and 8-inch PVC and ductile iron water line. Responsibilities included overall project management during design and construction, permitting, development of plans and specifications, construction cost estimates, shop drawing reviews, and site inspections.

Phase 3 Regional Pump Station Project, Peace River Manasota Regional Water Supply Authority, Sarasota County, FL | Project Manager/Engineer
The 18.5-mgd water pump station included five 150-hp vertical turbine pumps with variable frequency drives, an electrical building with motor control centers, automatic transfer switch and PLC, new electrical service, emergency generator, flow metering and control valve assemblies, and 24 and 36-inch ductile iron yard piping.

Regional Integrated Loop System - Phase 3A Interconnect Project, Peace River Manasota Regional Water Supply Authority, Sarasota County, FL | Project Manager
Provided bid phase services for construction of 9-miles of 48-inch diameter transmission pipeline, including a subaqueous crossing of the Myakka River and pipeline appurtenances with meter stations; a high service pumping station, and a 5-MG water storage tank.

Dwayne Kreidler, P.E.

Civil Engineer

Category 4 CIVIL ENGINEERING

MEETING YOUR REQUIREMENTS

- 24 years of experience
- BS – Environmental Engineering
- Professional Engineer: FL

Dwayne specializes in environmental engineering projects and serves as a professional engineer in the areas of water, wastewater, and general environmental engineering on projects in the State of Florida. As a project engineer, his expertise includes conceptual, preliminary, and final design activities associated with, gravity sewer, reclaimed water, and force main transmission/collection facilities. He has extensive experience in preparation of bid recommendations, shop drawing review and construction site inspections, and permitting activities through local and state agencies for various water, wastewater, and land development projects. He has set up and evaluated water distribution, wastewater transmission, and effluent disposal systems through computer-aided hydraulic modeling.

Relevant Project Experience

Lake Nona 8-inch Reclaimed Water Replacement, City of Orlando, FL | Project Manager
Responsible for the route study and installation investigation to install a new reclaimed water main through an established neighborhood.

Downtown Community Redevelopment Area - Water and Wastewater Improvments, City of Tavares, FL | Project Manager/Engineer of Record
Responsible for design, permitting, and final construction documents that provided the necessary improvements to the City's Community Redevelopment Area (CRA) infrastructure. The improvements include approximately 37,000 linear feet of existing water main and 42,000 linear feet of sanitary sewer (gravity and force mains) within the CRA. The project was funded through low interest loans from the Florida Department of Environmental Protection State Revolving Fund, Drinking and Clean Water Departments.

Reclaimed Water System Improvments Phases 1 through 4, City of Tavares, FL | Technical Advisor
Responsible for review and assistance in the construction document development and construction administrative services for the Phase 1 project. The project included the design, permitting, bidding, and construction of a 5-MG storage tank and 33,000 linear feet of reclaimed water transmission mains. The Reclaimed Water Facilities Plan identified projects Phases 1-4 to include a 5-MG reclaimed storage tank, a total of 85,000 linear feet of reclaimed water transmission mains, LEED certified administration building, Operations and Maintenance building and permanent reclaimed water pump station emergency generator. The pipes in Phase 1 ranged from 6-inch diameter to 24-inch diameter. The Phase 1 construction included horizontal directional drill, as well as jack and bore trenchless technology and completed in 2012. Phase 2-3 construction was completed in 2014.

Intermodal Container Transfer Facility, Dames Point Marine Terminal, Jacksonville Port Authority, FL | Project Engineer
Responsible for utility and team coordination for relocation of utilities associated with development of a new marine terminal facility owned by the Jacksonville Port Authority. The project involved new railway and roadway realignment to expand an intermodal container transfer facility. The existing utilities both above and below grade were identified and coordinated to be relocated along the new Dames Point Road construction. The project duties also required the design of the extension of water and wastewater to serve the new project site through design coordination with the utility provider (Jacksonville Electric Authority).

East Side Water Reclamation Facility Phase II Expansion, City of Clermont, FL | Program Manager
Responsible for the Phase II expansion of the East Side WRF from 2.0 to 4.0 mgd and modifications to the West Side wastewater treatment facility with the installation of 20,000 linear feet of 12-inch diameter force main. Scope of work included permitting, preliminary design, final design, bidding, and construction phase services. The design of the 12-inch force main included additional trenchless construction methods such as bore and jack and horizontal directional drilling to reduce impact along the selected route.

Eastern Water Reclamation Facility Expansion Reuse Facilities Phase IV B, Orange County Utilities, FL | Project Engineer
Responsible for the final design and permitting of the reclaimed water storage and pumping system. The project consisted of 2-MG reclaimed water ground storage tank. Scope of work included final design for the priority facilities at the Eastern WRF. These improvements included a new 2-MG reclaimed water ground storage tank, a high service reuse pumping station, flow metering station, MCC and generator building and associated civil and site improvements.

Brent White, P.E.

Civil Engineer

Category 4 CIVIL ENGINEERING

Brent has 9 years of experience as a project engineer and project manager in the areas of water and wastewater treatment, chemical system design, hydraulic modeling, distribution, pump station, and collection system analysis and design, stormwater treatment design, and construction engineering.

MEETING YOUR REQUIREMENTS

- 9 years of experience
- BS – Civil Engineering
- Professional Engineer: FL
- Vice Presiident of the Florida Engineering Society Central Florida Chapter

Relevant Project Experience

Improvements to the Vistana Water Supply Faiclity, Orange County, FL | Project Manager and Engineer of Record

Improvements include new well houses installed at existing wells, well discharge piping and instrumentation upgrades, high service pump modifications, replacement of the existing sodium hypochlorite and fluoride system with new bulk storage and feed systems, and associated electrical and instrumentation improvements. Services included a preliminary design report, construction documents, and services during construction.

Lake Ivanhoe Sewer Interceptor Improvements, City of Orlando, FL | Project Engineer

Project Engineer for the replacement of approximately 1,100 feet of dual 18 inch interceptor sewer. Improvements include replacement and CIPP lining of existing 18 inch and 8 inch sanitary sewer, maintenance of traffic coordination, bypass pumping considerations, and replacement of the existing brick roadway. Responsibilities included development of the preliminary design report, design drawings and specifications, and cost estimate.

Greenwood Lakes Water Reclamation Facility Renewal and Rehabilitiation, Orange County, FL | Project Manager/ Project Engineer

Project included rehabilitation of existing wastewater components at the Greenwood Lakes WRF. Improvements included upgrades to the effluent transfer pump system, in-plant high service pumps, replacement of the existing bulk sodium hypochlorite storage and feed system, control system evaluation, and filter press building replacement. Services included evaluations and recommendation memorandum regarding the equipment anticipated to be rehabilitated, final design documents, and services during construction.

Pump Station R/R Package No. 7 Improvements, Orange County, FL | Project Manager and Engineer of Record

Responsibilities included rehabilitation of four existing wastewater pump stations in Orange County FL. Services included two preliminary design reports detailing the improvements, FDEP permit determinations, FDEP permitting, final plans, specifications, and bid documents, construction cost estimate, bid evaluation, and services during construction.

Pump Station R/R Package No. 8 Improvements, Orange County, FL | Project Manager and Engineer of Record

Responsibilities included rehabilitation of three existing wastewater pump stations in Orange County FL. Services included two preliminary design reports detailing the improvements, FDEP permit determinations, final plans, specifications, and bid documents, and construction cost estimate.

Water Treatment Plant Major Upgrades, Southeast Regional Water Plant, Seminole County, FL | Project Engineer and Resident Construction Engineer

Prepared preliminary design report detailing proposed improvements for submittal to FDEP. Prepared plans, calculations, specifications, and cost estimates for plant upgrades, which include: ozone treatment system addition, granular activated carbon filtration system, conversion of an existing gas chlorine system to a bulk sodium hypochlorite storage and feed system, transfer pump station, and high service pump station modifications. Engineer of record service tasks included review and approval of submittals, response to RFIs, issuing field orders, review and approval of work change proposals, onsite construction inspection, startup and testing of plant equipment, and coordination with contractor to achieve design intent during construction.

Abnery Picon, P.E.

Civil Engineer

Category 4 CIVIL ENGINEERING

Abnery is a principal environmental engineer with 15 years of experience in environmental and civil engineering. Her project experience covers water distribution and wastewater collection system design, water and wastewater treatment plant evaluation, water and wastewater infrastructure planning, project management, site development, and climate resiliency.

MEETING YOUR REQUIREMENTS

- 15 years of experience
- MS – Civil and Environmental Engineering;
  BS – Civil Engineering
- Professional Engineer: FL, Puerto Rico

Relevant Project Experience

Facilities Review Project, Hillsborough County Administration, FL | Project Engineer
Responsible for developing the Engineer's Report.

Water Reclamation Facilities - Phase 1 and 2, Babcock Ranch Community, FL | Project Engineer
The scope of work included planning and studies for the Babcock Ranch Community, Florida, Water Reclamation Facilities – Phase 1 and Phase 2.

La Virgencita Water Treatment Plant Rehabilitation - Phase II Project, Puerto Rico Aqueduct and Sewer Authority (PRASA), Toa Alta, Puerto Rico | Project Manager
Design for rehabilitation of the existing 6.0-mgd water treatment plant, and the installation of 1.0 km of a new raw water pipeline.

Infrastructure Evaluation, PRASA, Toa Alta, Puerto Rico | Project Engineer
Evaluated PRASA's water distribution systems of the three Municipalities, to determine the required improvements to the system, including design of the improvements to two pump stations and one storage tank, and design of a new storage tank of 1.5-MG.

North and Metro Region's Capital Improvements Program, PRASA, Toa Alta, Puerto Rico | Pre-Construction Manager
Pre-construction manager for PRASA's North and Metro Region's Capital Improvements Program with an estimated project investment for calendar year 2015 of $38 million. Responsible from project conceptualization to bid process, fulfillment of PRASA's monthly and 180 days metrics, quality assurance/quality control, communication with PRASA's stakeholders, and negotiation in local and federal agencies.

Metro Region Water Resources Management Plan, PRASA, Toa Alta, Puerto Rico | Planning Leader
Developed during the 2015 drought period experienced in Puerto Rico. Responsible of identifying the water availability and infrastructure needs to mitigate a future drought period.

2009 Water and Wastewater Infrastructure Master Plan, PRASA, Toa Alta, Puerto Rico | Project Leader
Responsible for the island-wide planning of the water infrastructure projects for a 30-year period.

Identity How Climate Change affect Intrastructure, PRASA, Toa Alta, Puerto Rico | Project Leader
Development of the report that identifies how climate change may affect PRASA's infrastructure. Projected changes in temperature, precipitation, and water level, and identified the infrastructure that may be affected.

Evaluate Design Alternatives, Ciales Wastewater Treatment Plant, Ciales, Puerto Rico | Project Engineer
Evaluation of design alternatives for the expansion of the Ciales Wastewater Treatment Plant.

Puerto Rico Infrastructure Financing Authority, Puerto Rico | Project Engineer
Designed a 7.0-mgd pump station, a 4.0-MG storage tank, and transmission line at Carolina, for the Puerto Rico Infrastructure Financing Authority.

Mario Gamboa, P.E.

Lead Electrical/I&C Engineer

Category 5 MECHANICAL/ ELECTRICAL/ PLUMBING ENGINEERING

Mario's professional experience spans 36 years in design; value engineering; engineering management, construction management of numerous municipal, industrial and commercial projects. These include expertise focus with electric energy and automation for water treatment, wastewater treatment and pumping stations. Provided electrical design and instrumentation with construction specifications for 115 kV substations, medium voltage class (5-kV through 38-kV) and low-voltage power distribution systems; including prime and standby power generations systems, power for large pumps-motors with 5 kV variable speed controls systems; lighting systems; life safety systems; grounding; lightning protection; and SCADA automation systems.

MEETING YOUR REQUIREMENTS

- 36 years of experience
- BS – Electrial Engineering Engineering Management Graduate Level Studies
- Electrical Engineer: FL, CA Electrical Contractor: CA
- Master Electrician: Various Counties in FL

Relevant Project Experience

East Water Treatment Plant Magnetic Ion Exchange (MIEX®) Water Filters Project, City of Boynton Beach, FL | Electrical Engineer

This project included VFD driven mixers of MIEX resin and adsorption of raw water contaminants, and regeneration of process resin. Also, the MIEX process control included state of the art instrumentation that communicated with the plant SCADA PLC system via a network using "Profibus" protocol.

Pompano Beach Water Treatment Lime Softening Plant Electrical Improvements Master Plan, City of Pompano Beach, FL | Electrical Engineer

This project included separate phases for the design and construction to replace 5 kV power distribution switchgear, synchronizing switchgear and controls for two 900 kW – 5 kV standby power generators, 5 kV motor control centers, 600 volts switchgear, 5 kV /480 volts transformers, reviewed quality of design of other firm for 600 hp pump's speed controls with 5 kV VFDs and addition of programmable logic controllers.

Pompano Beach Water Treatment Lime Softening Plant Phase I and Phase II Electrical Improvements, City of Pompano Beach, FL | Electrical Engineer

This project included replacement of 5 kV motor control centers with redundant power provisions for 5 kV 600 HP VFDs for high service pumps, replacement of 480 volts switchgear, 480 volts panelboards, addition of 5 kV/480 V transformer and addition of VFDs for speed control of filter's backwash pumps

SCADA Upgrade and Speed Control of High Service Pumps Project, City of Plantation, East Water Treatment Plant, FL | Electrical Engineer

Project included VFDs for pump control and replacement of two programmable logic controllers. Mr. Gamboa assisted with the coordination for the replacement of PLC hardware and software for the control of existing RO membranes and water pumping equipment.

Central County Water Reclamation Facility Phase 2 & 3 Expansion and Main Lift Station Upgrade, Sarasota County Utiltiies Department, FL | Electrical Engineer

Project included design of an upgrade to the 480 volts power distribution and SCADA system that included FP&L utility transformers, 480 volts-4000 A switchgear with provisions to synchronize two generators; motor control centers, underground ductbanks, pumps with variable frequency (speed) controllers, and new programmable controllers. Mr. Gamboa provided design and construction support services.

Regional Wastewater Plant and Central Water Plant Pump Speed Controller Upgrade Project, City of Plantation, FL | Electrical Engineer

Design included new 480 volts MCCs, VFDs, underground ductbanks, electric manholes, new programmable automation controllers, and temporary power provisions to maintain the existing plant in continuous operation. Wastewater processes included modifications to the existing deep well pumps, RAS pumps, and water storage transfer pumps.

Electrical Assessment of Three (3) Water Reuse Pumping Stations, Manatee County Water Utiltiies, FL | Electrical Engineer

Project included Power System Analysis of utility power, motor control center, 200 HP VFDs and standby power generator, for compliance with NFPA-72E for installing equipment arc flash labels.

Venice Gardens Water Treatment Plant Upgrades Pre-Design Project, Sarasota County, FL | Electrical Engineer

Project included pre-design evaluation of electrical 480 volts power distribution system capacity, standby generator capacity and PLC configuration for improvements to the existing water treatment membranes.

Chad Green, P.E.

Lead HVAC/Plumbing Engineer

Category 5 MECHANICAL/ ELECTRICAL/ PLUMBING ENGINEERING

Chad, a senior building mechanical engineer with Carollo, has 7 years of engineering experience in various building mechanical designs for water and wastewater facility projects as well as odor control and fuel systems. As a building mechanical engineer, he provides all aspects of design services associated with the design of air, heating, cooling, controls, plumbing systems, fire protection systems, odor treatment, and fuel systems.

MEETING YOUR REQUIREMENTS

- 7 years of experience
- BS – Mechanical Engineering
- Professional Engineer: FL, TX, AR, AZ, CA, CO, NB, NM, OK, OR, WA, IL
- American Society of Heating, Refrigeration, and Air-Conditioning Engineers

Relevant Project Experience

Broward County District 1B1 High Service Pump Station Project, City of Fort Lauderdale, FL | Lead Building Mechanical Engineer

Supervised junior engineers for HVAC/plumbing calculations, designs, code reviews, drawings, specifications, and construction services. Scope included HVAC/plumbing for the pump station which included a pump room, sampling lab, restroom, electrical room, generator room, and chemical rooms.

Broward County District 3A High Service Pump Station Project, City of Dania Beach, FL |Lead Building Mechanical Engineer

Supervised junior engineers for HVAC/plumbing calculations, designs, code reviews, drawings, specifications, and construction services. Scope included HVAC/plumbing for the pump station which included a pump room, sampling lab, restroom, electrical room, generator room, and chemical rooms.

Caloosahatchee River (V-43) West Basin Storage Reservoir Project, Southern Florida |Lead Building Mechanical Engineer

Supervised junior engineers for HVAC/plumbing calculations, designs, code reviews, drawings, and construction services related to the S-470 Pump Station and S-483 Control Building. Scope included a pump station which included a pump room, below grade pipe gallery, workshop, locker room, restrooms, break rooms, and control room. The S-483 control building included a control room and generator room.

Southwest Water Treatment Plant Ion Exchange System and Improvements Project, City of Sunrise, CA | Lead Building Mechanical Engineer

Provided HVAC calculations, designs, code reviews, drawings, and construction services. Scope included a generator room.

Water Utilities Water Treatment Plant No. 2's Filter Replacement, Palm Beach County, FL | Lead Building Mechanical Engineer

Provided HVAC/plumbing designs, calculations, code reviews, and construction services related to the Water Treatment Plant No. 2. Scope included a filter gallery, blower room, and electrical room.

Pompano Beach Water Treatment Plant Transfer Pump Station Improvements Project, City of Pompano Beach, FL | Lead Building Mechanical Engineer

Supervised junior engineers for HVAC calculations, designs, code reviews, drawings, and construction services. Scope included an electrical building.

Sawgrass Water Treatment Ion Exchange and Other Improvements Project, City of Sunrise, FL | Lead Building Mechanical Engineer

Provided HVAC/plumbing/fire protection calculations, designs, code reviews, drawings, and construction services. Scope included an electrical room and chemical room. Scope also included fire protection design for the chemical room.

Polk County Utility Dinner Lake South Booster Pump Station and Storage Project, City of Winter Haven, FL | Lead Building Mechanical Engineer

Supervised junior engineers for HVAC designs, calculations, code reviews, drawings, specifications, and construction services related to the project. Scope included an electrical building.

Eric Pedersen, P.E.*

Mechanical Engineer

Category 5 MECHANICAL/ ELECTRICAL/ PLUMBING ENGINEERING

Eric, a lead building mechanical and piping engineer with Carollo, has 1 year of engineering experience in various building mechanical designs for water and wastewater facility projects as well as odor control and fuel systems. Apart from water and wastewater facilities, Eric has 9 years' experience in building mechanical designs for several different industries. As a building mechanical engineer, he provides all aspects of design services associated with the design of air, heating, cooling, controls, plumbing systems, fire protection systems, odor treatment, pumping and fuel systems.

MEETING YOUR REQUIREMENTS

- 9 years of experience
- BS – Mechanical Engineering
- Professional Engineer, CT, ME; Civil Engineer, MA, NH
- American Society of Heating, Refigeration, and Air-Conditioning Engineers

Relevant Project Experience

Salt River Pima-Maricopa Indian Community (SRPMIC), City of Scottsdale, AZ | Lead Building Mechanical Engineer
Performed HVAC/plumbing /fire protection designs, calculations, code reviews, drawings, specifications, and construction services related to the project. Scope included a pump building, chemical building, arsenic treatment building and electrical building.

Site 2 Improvements, City of Henderson, NV | Lead Building Mechanical Engineer
Performed HVAC/plumbing designs, calculations, code reviews, drawings, specifications, and construction services related to the project. Scope included a pump station and electrical building.

Pompano Beach Water Treatment Plant Transfer Pump Station Improvements, City of Pompano Beach, FL | Building Mechanical Engineer
Performed HVAC calculations, designs, code reviews, drawings, and construction services. Scope included an electrical building.

Broward County District 1B1 High Service Pump Station Project, City of Fort Lauderdale, FL | Building Mechanical Engineer
Performed HVAC/plumbing calculations, designs, code reviews, drawings, specifications, and construction services. Scope included HVAC/plumbing for the pump station which included a pump room, sampling lab, restroom, electrical room, generator room, and chemical rooms.

Broward County District 3A High Service Pump Station Project, City of Dania Beach, FL | Building Mechanical Engineer
Supervised junior engineers for HVAC/plumbing calculations, designs, code reviews, drawings, specifications, and construction services. Scope included HVAC/plumbing for the pump station which included a pump room, sampling lab, restroom, electrical room, generator room, and chemical rooms.

Trinity River Authority of Texas Tarrant County Water Supply Project, City of Euless, TX | Building Mechanical Engineer
Performed HVAC/plumbing calculations, designs, code reviews, drawings, and construction services related to the Treatment Plant. Scope included an electrical building, chemical building, raw water ozone building, and pump station.

Fountain Hills Sanitary District Water Treatment Plant Expansion, City of Fountain Hills, AZ | Lead Mechanical Engineer
Performed HVAC designs, calculations, code reviews, drawings, specifications, and construction services related to the project. Scope included electrical rooms, chlorine scrubber replacement, odor control replacement, non-potable water pump station, and non-potable water pump booster station.

Polk County Utility Dinner Lake South Booster Pump Station and Storage Project, City of Winterhaven, FL | Building Mechanical Engineer
Performed HVAC designs, calculations, code reviews, drawings, specifications, and construction services related to the project. Scope included an electrical building.

WRF Expansion, City of Marana, AZ | Lead Mechanical Engineer
Performed HVAC designs, calculations, code reviews, drawings, specifications, and construction services related to the project. Scope included a maintenance building and potable water booster pump.

*Licensed in a state other than Florida

Seok Min Kim, P.E.*

Mechanical Engineer

Category 5 MECHANICAL/ ELECTRICAL/ PLUMBING ENGINEERING

Seok Min, a senior mechanical engineer with Carollo, has more than 17 years of engineering experience in HVAC and plumbing engineer projects. He specializes HVAC/Plumbing/Fire Protection design, calculations, studies, analysis, code reviews, and construction services and is skilled in AutoCad and TRACE700 / HAP4.9 software. He is versed in International Mechanical/ Plumbing/ Energy Conservation/ Fuel Gas Codes, NFPA, ANSI/ASHRAE, SMACNA Standards. He has also attained LEED AP with a specialization in building design and construction (BD+C) certification.

MEETING YOUR REQUIREMENTS

- 9 years of experience
- MS – Refrigeration and Air-Conditioning Engineering
  BS – Refrigeration and Air-Conditioning Engineering
- Professional Engineer: FL
- Certified 1st Class Engineer, South Korea

Relevant Project Experience

Edmond Arcadia Water Treatment Plant, City of Edmond, OK | Mechanical Engineer
Responsibilities included HVAC calculations, site surveys, designs, code reviews, drawings. This phase of the project includes the conceptual and preliminary design.

Wemlinger Water Purification Plant Improvements ESDC, City of Aurora, CO | Mechanical Engineer
Responsibilities included HVAC calculations, analysis, site surveys, code reviews, report, and drawings. This phase of the project includes the design of the cooling tower replacing the once-thru water cooling and HVAC study for the Administration building.

Oak Harbor Clean Water Facility, City of Oak Harbor, WA | Mechanical Engineer
Responsibilities included HVAC calculations, designs, code reviews, and drawings. This phase of the work includes the development of preliminary engineering and a Facilities Plan for the wastewater treatment facilities.

Ammonia Treatment and Biosolids Dewatering Improvements, City of Longmont, CO | Mechanical Engineer
Responsibilities included HVAC calculations, designs, code reviews, and drawings. This is the ESDC and RPR services for a design/build project.

Echo Water Nitrifying Sidestream Treatment Project, City of Elk Grove, CA | Mechanical Engineer
Responsibilities included the HVAC/ Plumbing calculations, designs, code reviews, and drawings. This project included the design of the main electrical building and the lime building.

City of Richardson Library and City Hall, City of Richardson, TX | Mechanical Engineer
This project included HVAC renovations of the major HVAC equipment in the Library and the City Hall. Responsibilities included the HVAC calculations, design, code reviews, and drawings as well as construction services.

City of Murphy Fire Station, Policy/Court Pump Works and City Hall, City of Murphy, TX | Mechanical Engineer
This project included the new municipal campus comprised of Fire Station, Police Station and court, Public Works, etc. Responsibilities included the HVAC/ Plumbing calculations, design, code reviews, and drawings as well as construction services.

City of Dallas 911 Center Improvements, City of Dallas, TX | Mechanical Engineer
This project included conceptual and preliminary design of the 911 center expansion. Responsibilities included the HVAC calculations, design, code reviews, and drawings.

City of Murphy Fire Station, Policy/Court Pump Works and City Hall, City of Murphy, TX | Mechanical Engineer
This project included the new municipal campus comprised of Fire Station, Police Station and court, Public Works, etc. Responsibilities included the HVAC/ Plumbing calculations, design, code reviews, and drawings as well as construction services.

*Licensed in a state other than Florida

Joel Smason, P.E.

Lead Structural Engineer

Category 6 STRUCTURAL ENGINEERING

Joel has 40 years of experience as a structural design engineer for water and wastewater treatment plants and nuclear power plant design. As a senior structural design engineer, Mr. Smason's responsibilities include preparation of preliminary structural designs, client assistance, supervision of personnel, preparation of budgets and estimates, and the development of detailed drawings and specifications. He also has experience with alternative project delivery methods including design-build and construction manager at risk (CMAR).

MEETING YOUR REQUIREMENTS

- 40 years of experience
- MS – Structural Engineering; BS – Structural Engineering
- Structural Engineer: AZ, IL
  Civil Engineer: NV
  Professional Engineer: FL, NC, SC, TX, IL, MS, NM

Relevant Project Experience

South Florida Water Management District, FL | Structural Design Engineer
SFWMD structural design engineer for the S470 1500 cfs pump station.

Field Station Roof Replacement, South Florida Water Management District, FL | Strucutral Design Engineer
Participating in structural design to replace roofs of four buildings in the West Palm Beach Field Station that were deemed necessary to be replaced.

Lithia Hydrogen Sulfide Removal Facility Utilizing Ozone Treatment, Tampa Bay Water, FL | Structural Design Engineer
Predesign, Procurement, and Construction Support Services.

Florida Water Services' Palm Coast Reverse Osomosis Water Treatment Plant Expansion, City of Apopka, FL | Structural Design Engineer
The expansion of the water treatment plant from 2 mgd to 9.6 mgd included design of supports for electrical equipment.

Northeast Water Treatment Plant - Water Reclamation Facility Deisgn, Collier County, FL | Strucutral Engineer
This project involved facility planning, new co-located water and wastewater facilities, brackish groundwater RO treatment, public access reuse quality, state-of-the-art I&C to maximize reliability, design of a 10-mgd brackish RO water treatment plant, energy recovery devices, and increased efficiency by providing newer technology on control systems.

2 MG Reservoir and Booster Pump Station at Ray and Recker Roads, Town of Gilbert, AZ | Structural Engineer
Created the conceptual design for the expansion of secondary wastewater treatment works at Ulu Pandan to an advance treatment capability of 120 mgd. Applied first-of-its-kind ultra-compact and completely enclosed technologies using the A-B activated sludge process with provision for nutrient removal.

Facility Planning and Conceptrual Design of the 570-mgd Deer Island Wastewater Treatment Plant, Massachusetts Water Resource Authority, City of Boston, MA| Project Manager
The project consists of a 0.5 MG wet well, a 1.5 MG reservoir, and a 6.3 mgd booster pump station. The wall between the reservoir and wet well is equipped with a valve that can isolate the reservoir from the wet well and allow the pump station to continue operation with the reservoir out of service. The reservoir is an in-ground structure with a reinforced concrete hopper bottom and a continuous seam aluminum roofing system.

Well 299 Optimization Plan, City of Phoenix, AZ | Structural Engineer
Providing technical and operational guidance for the Well 299 Optimization Plan including training, testing, troubleshooting, data interpretation, and strategic operation implementation services.

Hayden Road Crossover Pump Station Design and Construction Managment Project, City of Phoenix, AZ | Structural Engineer
The pump station consists of three 400-hp horizontal pumps with room for a future fourth pump, an electrical equipment building, SRP electrical service equipment, masonry block perimeter wall, and gates. The small site was designed to include all of the required equipment for the pump station, while providing maintenance access.

Reverse Osmosis Water Treatment Plant Expansion, South Island Public Service, Ciyt of Hilton Head, SC | Strucutral Design Engineer
Design included expansion of the cooling tower foundation and support, expanding the storage building, and checking existing tanks for hurricane winds.

And many, many more projects, too numerous to list.

Rich Warner, P.E.

Structural Engineer

Category 6 STRUCTURAL ENGINEERING

MEETING YOUR REQUIREMENTS

- 20 years of experience
- BS – Civil Engineering
- Professional Engineer: FL, CA, OH, AR, LA, TX, MS, Guam

Rich is a structural engineer with more than 20 years experience in structural analysis and design of water and wastewater treatment plants, pumping stations and building structures, Rich brings strong structural design qualifications to your project. Rich is also experienced in alternate delivery methods including design-build and construction-manager-at-risk (CMAR). This experience is key to ensuring adequate structural design and quality review are incorporated into a fast-paced design-build atmosphere.

Relevant Project Experience

Biosolids Dewatering Centrifuge Project, Toho Water Authority, FL | Structural Engineer-of-Record

Responsibilities included: vibration analysis of an existing biosolids dewatering building subjected to new centrifuge loading, and structural design of a new biosolids dewatering building and a dewatered cake truck unloading station.

S-470-Pump Station Design, South Florida Water Management District, FL | Structural Engineer

Responsibilities included structural design of S-470 Pump Station and sheet piling.

Dinner Lake South Booster Pump Station, Polk County, FL | Structural Engineer

Responsibilities included structural design of a chemical building, pump station, and electrical building.

Kermit H Lewin Seawater Desalination Facilities Rehabilitation adn Expansion, Florida Keys Aqueduct Authority, FL | Structural Engineer

Responsibilities included structural design of new 4 mgd Reverse Osmosis building and emergency generator platforms and rehabilitation of an existing building structure for reuse.

Northeast Master Lift Station Inspection, City of St. Petersburg, FL | Structural Engineer

Responsibilities included structural inspection of the existing lift station above and below grade and provide recommendations for repair and rehabilitation including planning level cost estimates for alternatives.

St. Bernard Parish Pump Stations and Pump Station Modifications, U.S. Army Corps of Engineers, LA | Structural Engineer

Served as the engineer-of-record for the structural portion of this project. Provided structural analysis and design of the new elevated pump stations No. 2 and 3 and modifications for existing pump station No. 5. The pump stations and equipment were being elevated to prevent future hurricanes from causing damage to and interference with the performance of the pumps and drive units. This project was delivered via the Design-Build method of delivery. This project was a 2009 Design-Build Institute Award Winner.

Micro-filtration/Reverse Osmosis Building, Pebble Beach Company and Carmel Area Water District, CA | Structural Engineer

Served as the engineer-of-record for the structural portion of this $18 million project. He provided structural design oversight and reviewed structural and architectural drawings for the design of the steel special concentric braced-frame building structure. This project was completed through the Design-Build method of delivery. The building was situated in an area of high liquefaction potential which required special attention to the foundation design to mitigate the problem. The purpose of the project was to use de-salinated ocean water to irrigate the grounds of the Pebble Beach Country Club.

David Jessep, P.E.

Structural Engineer

Category 6 STRUCTURAL ENGINEERING

MEETING YOUR REQUIREMENTS

- 20 years of experience
- MBA
  MEng – Civil and Structural Engineering
  BS – Civil and Structural Engineering
- Professional Engineer: FL, CO, IL, LA, MT, ND, NM, NV, OH, OK, OR, PA, SD, TX, UT, WA, WV, WY
  Civil Engineer, MA, NH
  Structural Engineer: AZ, IL, NV, OR, UT

David has over 20 years of experience in consulting, 15 years experience in the design of structures for water and wastewater treatment facilities, and 3 years experience as a project manager. His experience includes inspection and evaluation of existing structures, structural analysis and design, cost estimating, cost benefit analysis, financial evaluation of alternative solutions, preparation of contract drawings and specifications, assistance during construction, and project management.

David's project work includes structural design for new, expanded, and rehabilitated water and wastewater projects with capacities ranging from 1.5 to 200 mgd. He has designed or investigated structures for pump stations, water storage tanks, water and wastewater treatment, storage of chemicals and hazardous materials, solid waste handling, microelectronics fabrication, pulp and paper production, wood products manufacturing, oil and gas production storage and transportation, highway and pedestrian bridges, and commercial and residential use.

Relevant Project Experience

New Influent Pump Station and Headworks, City of Riverbend, TX | Lead Structural Engineer
New Influent Pump Station and Headworks Riverbend, TX Waste Water Treatment

Wastewater Treatment Plant, City of Lemoore, CA | Project Manager/Lead Structural Engineer
Project Manager and Lead structural engineer for improvements to waste water treatment plant at food processing plant.

Improvements to Microelectronics Manufacturing Plant, City of Chandler, AZ | Lead Structural Engineer
Lead structural engineer for improvements to microelectronics manufacturing plant.

New Pipeline and Storage Tanks, City of Nederland, TX | Project Manager/Lead Structural Engineer
New pipeline and storage tanks at Oil and Gas storage and distribution facility.

New 3-mgd Produced Water Storage and Treatment Facility, Doddridge County, WV | Project Manager/Lead Structural Engineer
Project Manager and Lead structural engineer for new 3 MGD produced water storage and treatment facility to serve various upstream Oil and Gas producers.

New Gas Compression and Distribution Facility, Weld County, CO | Lead Structural Engineer
Lead structural engineer for new gas compression and distribution facility.

Draper Water Treatment Plant, City of Oklahoma City, OK | Lead Structural Engineer
Lead structural engineer for the new $35 million 80 mgd High Service Pump at Oklahoma City's Draper Water Treatment Plant.

South Secondary Improvements Project, Metro Wastewater Reclamation District, City of Denver, CO | Lead Structural Engineer
Project includes final design of a new 100-mgd secondary treatment complex. Total construction cost estimate was approximately $225 million.

Norman Water Treatment Plant, City of Oklahoma City, OK | Lead Structural Engineer
Lead structural engineer for the design and construction of the $11.5 million Phase I expansion of City of Norman Oklahoma's Water Treatment Plant.

Draper Water Treatment Plant, City of Oklahoma City, OK | Lead Structural Engineer
Lead structural engineer for the design and construction of the $7.5 million improvements to Oklahoma City's Draper Water Treatment Plant

North Secondary Improvemenst Project, Metro Wastewater Reclamation District, City of Denver, CO | Lead Structural Engineer
Lead structural engineer for the design of the $47 million North Secondary Improvements Project at Metro Wastewater Reclamation District, Denver, Colorado.

Gary Sagehorn, P.E.

Structural Engineer

Category 6 STRUCTURAL ENGINEERING

MEETING YOUR REQUIREMENTS

- 30 years of experience
- BS – Architectural Engineering
- Professional Engineer: FL, VA, IA, KS, CO, TX, WI, MS, AR, OK
  Civil Engineer: CA, ID, NB

Gary, a vice president, has over 35 years of experience as a structural project engineer, with the past 30 years specifically devoted to the design and investigation of structures for water and wastewater treatment and conveyance. His experience includes inspection and evaluation of existing structures, structural analysis and design, preparation of contract drawings and specifications, and assistance during construction for conventionally bid, fast-track, and design/build projects.

Gary's project work includes structural designs and investigations for the following new and existing facilities: water and wastewater projects with capacities ranging from 0.5 to 240 mgd; pump stations for water, wastewater, and storm drainage; water storage tanks and impoundments; treatment of industrial waste, and storage and containment of chemicals and hazardous materials; airport deicing facilities; and structures for commercial and residential use.

This work includes design forof new water treatment plants in Colorado Springs, Colorado; Henrico County, Virginia; Fort Worth, Texas; Lawton, Oklahoma; Rancho Cucamonga, California; and Brewer, Maine. He has also provided designs for renovation or expansion of plants in Clifton, Colorado; Oklahoma City, Oklahoma; Olathe and Wichita, Kansas; Austin, Ft. Worth, and Round Rock, Texas.; Rancho Cucamonga, California.

Relevant Project Experience

Lake Draper Water Treatment Plant, City of Oklahoma City, OK | Lead Structural Engineer

Lead structural engineer for evaluation of existing facility, and design of $31 million in improvements to expand the Lake Draper Water Treatment Plant in Oklahoma City, Oklahoma from 90 mgd to 124 mgd. Work included a new raw water mixing and diversion structure, modifications to existing settling basins for enhanced chemical mixing, flocculation and sedimentation/sludge removal, and design of new chemical storage and feed facilities for lime, coagulant, chlorine, and ammonia.

Evaluation and Design of Expansion of the Lime Softening Water Treatment Plant, City of Wichita, KS | Lead Structural Engineer

This $30 million project expanded the plant from 120 to 160 mgd and included rehabilitation of existing aeration structures, structural modifications to improve plant hydraulics, and reconfiguration of settling basin structures to allow the installation of alternate sludge removal equipment.

Lake Hefner Water Treatment Plant, City of Oklahoma City, OK | Engineer of Record/Lead Structural Engineer

Structural design work included modifications and expansion of the low lift pump station just below the dam for Lake Hefner, design of new ozonation tanks and an adjacent ozone equipment building; design of new lime feed facilities and new settling basin; and design of a new high-service pumping station.

Design of Phase I, II, and III Improvements, Eagle Mountain Water Treatment Plant, City of Ft. Worth, TX | Lead Structural Engineer

In 1990, served as structural engineer for design of new 24-mgd plant. Project included raw water pump station, pre-ozonation facilities; rapid mix, flocculation, and sedimentation basins; filters; new administrative offices; bulk chemical storage facilities; and backwash reclamation tanks. Eight years later, led structural engineering team for design of Phase II improvements to expand plant to 60 mgd capacity. In 2005, Mr. Sagehorn was again selected to lead structural design for the Phase III expansion to raise plant capacity from 70 mgd to 105 mgd.

North Holly Water Treatment Plant, City of Ft. Worth, TX | Structural Engineer

Evaluated existing 90-year old structures for installation of new lime storage silos, and designed lime trough system to deliver lime slurry to existing basins. Provided basin modifications for sludge collection equipment.

AWWA Research Foundation Project 460, City of Denver, CO | Writer of Structural Engineer

Produced the guidance document,."Water Treatment Plant Infrastructure Assessment Manager." With project manager, developed overall scheme for organizing and conducting assessment, and consolidating results of each component of the assessment.

Laura Baumberger, P.E.

Lead Master Planner

Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM

MEETING YOUR REQUIREMENTS

- 14 years of experience
- MS – Environmental Engineering
  BS – Civil Engineering
  BA – Spanish
- Professional Engineer: FL
  Civil Engineer: CA

Laura, an associate vice president with Carollo, has 14 years of experience in the water and wastewater field. She has extensive experience in master planning, hydraulic modeling, and asset management and has provided comprehensive planning services to a number of Florida utility agencies. She also has provided permitting and regulatory assistance, water and wastewater studies, collection system evaluations, and bond engineer services.

Relevant Project Experience

Water Master Plan Update, Palm Beach County Water Utilities Department, FL | Project Manager

Recommended capital improvements to meet the County's 20-year water needs. Demand projections were reviewed and confirmed, and updated peaking factors were developed based on historical production and SCADA data. Assisted the County in updating its Infowater hydraulic model and developed and facilitated a calibration program. The calibrated model was used to evaluate the system under a number of demand conditions including average, maximum day, peak hour, and fire flow scenarios. Water age also was evaluated using the hydraulic water model. Based on modeling results and evaluation of storage facilities, a 20-year CIP was developed to sustain the County's future water demands.

Glades Region Water Master Plan Update, Palm Beach County Water Utilities Department, FL | Project Manager

Developed a water master plan for the Glades Region and recommended 20-year capital improvements. Demand projections were reviewed and confirmed, and updated peaking factors were developed based on historical production and SCADA data. Developed an Infowater hydraulic model and developed and facilitated a calibration program. The calibrated model was used to evaluate the system under a number of demand conditions including average, maximum day, peak hour, and fire flow scenarios. Water age also was evaluated using the hydraulic water model. Based on modeling results and evaluation of treatment and storage facilities, a 20-year Capital Improvements Plan was developed.

2015 Water Supply Study, Punta Gorda, FL | Project Manager

The scope of work included a water supply study, environmental assessment study, and conceptual design for the including a river intake structure, 40-mgd raw water pumping station, and a 5-mile transmission line.

Wastewater Reclamation Facilities Design Project, Public Utilities Board, Ministry of the Environment, Singapore | Project Specialist

Evaluated two potential water supply sources: connection to and purchase of water from a regional water supply Authority, or a reverse osmosis treatment plant. The City requires a new source to blend with the existing water supply to meet the total dissolved solids regulation and to provide reliability in water supply sources. The reverse osmosis treatment facility will work conjunctively with the City's existing surface water treatment plant to provide a sustainable, reliable supply that can meet the TDS standard through 2035.

2006 and 2011 Water Supply Master Plan Updates, Sarasota County, FL | Project Manager

Updated water demand projections, reviewed the inventory of water assets, and identified potential future supplies. A scenario-based alternatives development approach was used to produce a plan that provides flexibility in light of future uncertainties and to provide a basis for the continuation of sustainable water supply development. A 10-year CIP was developed to best satisfy the County's future water supply needs.

2006 and 2009 Water Supply Master Plan Updates, City of Punta Gorda, FL | Project Manager

Updated demand projections, evaluated potential future supply sources, and conducted an alternatives analysis to identify water supply projects for a range of different planning scenarios. Key considerations included minimum flow and level regulations, ASR well regulations and usage options, meeting total dissolved solids regulation with a mineralized surface water, and reliability in water supply sources. Presented project recommendations and cost estimates to the City's Utility Advisory Board and the City Council.

David Ammerman, P.E.

Lead Reuse

Category 9 WATER RESOURCES/ STORMWATER MANAGEMENT TEAM

MEETING YOUR REQUIREMENTS

- 30 years of experience
- MEng – Agricultural Engineering
  BSE – Agricultural Engineering
- Professional Engineer, FL

David has more than 30 years of experience in water reuse, including planning studies, master plans, permitting, preliminary and final design, construction, facility start-up and operations. He formerly served as AECOM's national practice leader for water reuse. He is the author of numerous papers on the subject of water reuse and was a principal author of the 1992 and 2004 EPA Guidelines for Water Reuse as well as a contributing author to the 2012 EPA Guidelines for Water Reuse. He is a member of the WEF/AWWA Reuse Committee and is the Past-President of WateReuse Florida and past Chairman of the FWEA Reuse Committee. David also served on the technical advisory panel that revised Florida's reuse regulations

As a member of Carollo's water reuse practice in Florida, David supports local, regional, and national business development and technical practice demands, which include serving as a project manager and technical advisor for key projects. David is well known in the Florida reuse industry, and is part of Carollo's mission of being dedicated to creative, responsive, quality solutions to those we serve.

Relevant Project Experience

Reclaimed Water Transmission System A-First Transmission System Pipeline Project, City of Altamonte Springs, FL | Technical Advisor
This transmission pipe is a critical element of an innovative water resource program which includes the reuse of stormwater from the upcoming I-4 improvements program.

Stormwater Resue Project, City of Orlando, FL | Project Manager
This project included development of a preliminary design for the use of reclaimed water and stormwater for urban irrigation in the Lake Nona development. This included evaluation of stormwater and ground water resources, hydraulic modeling of the transmission/ distribution system and design of a stormwater pumping station based on current regulatory guidelines for the use of stormwater for unrestricted access irrigation.

Update to the EPA Guidelines for Water Reuse | Principal Editor/Contributing Author/Project Manager
Principal editor and contributing author for the agricultural reuse section of the 2012 Update to the EPA Guidelines for Water Reuse. Project manager for the 1992 and 2004 Update to the EPA Guidelines for Water Reuse.

Reclaimed Water Master Plan Update, City of St. Petersburg, FL | Project Engineer
This included a detailed analysis of historical monthly, daily, and hourly reclaimed water supplies and demands. A predictive model was also used to define expected seasonal variations in reclaimed water using 40 years of weather data.

Eastern Regional Reclaimed Water Distribution System Expansion, City of Orlando, FL | Project Manager
Under this program David lead the effort to develop preliminary and final design documents for a reclaimed water system serving customers in eastern Orange County and Seminole County. Reclaimed water supplies are provided from the city of Orlando's Iron Bridge WRF and the Orange County Eastern WRF with expected combined peak hour flows of approximately 60-mgd in 2020. Reclaimed water customers consisted of residential, commercial, and industrial properties in the planning area.

Tampa Augmentation Project (TAP), City of Tampa, FL | Project Manager
The City of Tampa is currently evaluating the Tampa augmentation project (TAP). This project seeks to use natural treatment systems (wetlands and soil aquifer treatment) to return highly treated reclaimed water from the Howard F. Curran advanced wastewater treatment plant to the regional raw water supply. Elements of this project applicable to Toho's SAT study include:

- The use of SAT as part of a potable reuse project
- Detailed analysis of Applicable FDEP and Water Management District regulations
- Estimate of reclaimed water yields
- Evaluation of the cost of the augmentation program in comparison to other alternative water supplies.

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SECTION B | Approach to Project Management

OVERVIEW

Carollo's management philosophy is founded on simple precepts:

- Hire and hold on to the best people in the business. The most critical element for a successful project is the individuals that do the work. Carollo aggressively recruits highly experienced and successful engineers along with the top engineering graduates entering the work force. Our training and mentoring process allows younger engineers to become industry leaders. The City will benefit extensively from our management philosophy due to the dedication of our Client Services Manager, Liz Fujikawa, as well as the entire team. We also create successful teaming environments by developing communication skills and a commitment to building and maintaining lasting client relationships.
- Specialize in the planning, design, and construction management of water projects. This is our core business. Our success hinges solely upon our ability to provide cost-effective and responsive service to our clients.
- Focus on client service. Carollo knows the value of listening to our clients and recognizes that successful projects result from our staff working as an extension of your staff. This commitment to listening and valuing client input is the cornerstone of Carollo's 84 years of success. We take pride in the large number of clients with whom we have maintained continuing relationships. We have worked with some clients for over seven decades — validating the quality of our work, cost control, and ability to meet schedules. We strive to live up to our mission statement, "Dedicated to creative, responsive, quality water solutions to those we serve."

Our job is to identify your project expectations and determine the best way to deliver them to you.

> The Carollo Team's credentials and approach are based on client service, experience, technical innovation, and understanding of your issues.

ENGAGING YOUR STAFF: NO SURPRISES

The Emphasis Is on Teamwork and Communication

Critical to a project's success is reading between the lines on your requests and true teamwork between your staff and ours. Doing that well is all about good communication. Aside from the day-to-day conversations between our project managers, we work regular interface opportunities into our projects.

Our most direct way to communicate will be by meetings with the affected stakeholders, often including subconsultants, other utilities, contractors, and/or regulators. Regular progress meetings are scheduled. An agenda is prepared. We typically forward the agenda in advance so that staff is made aware of the issues to be discussed and the people required to make the necessary decisions can be in attendance. Meeting notes are prepared for each meeting to document decisions made. Items documented in the meeting notes would include:

- Attendees
- Meeting time, date, and location
- Record of discussion
- Project status
- Decisions made
- Action items
- Outstanding issues

We also anticipate meeting on a more frequent and informal basis with project team members, as required, to assist in the decision-making process. We would schedule informal meetings through your project manager to maintain proper communication channels.

Carollo offers a project specific management tool on the Internet. Password protected and updated daily by Carollo, this website allows your team members to keep track of the project's progress; review schedules, budgets, the latest technical findings and decisions, and action logs; and to post current information. In addition to being a useful tool for team communication and coordination, the website can access agendas, notes, draft and final reports, specifications (as they are being developed), and drawings. Since it is a secure password-protected site, it can have technical information, detailed project and budget status reports, and team coordination information.

The website can also be accessed by other agency staff who may need updates on the project, but are not involved on a day-to-day basis. We have developed similar web pages on other projects and have found them useful for improving coordination and communication among the client, subconsultants, other agencies, and Carollo. In addition, we can create a second layer on the page that can be accessed by the general public. This page is used to supplement public involvement activities and keep the public informed of the project status, time and location of public meetings, and opportunities for public input into the construction.

APPROACH TO DESIGN OF PROJECTS

Carollo utilizes the same standards and practices for every project we undertake, whether it is a small study or the most complex design project.

Plan the Work and Work the Plan

Our approach to accepting specific projects begins with a conversation between our client services manager, Liz Fujikawa, and appropriate City staff. Based on that discussion, Liz will assign the appropriate Project Manager and the right Carollo talent for the assignment and work with City staff to develop a detailed scope and budget.

Our overall approach to delivering specific projects will differ depending on the nature of the assignment, but will center around four key concepts for delivering highly successful projects:

- **ENGAGE** all key project stakeholders early and develop consensus on all critical project elements. Carollo will work closely with City personnel during projects. We will function as an extension of your staff to address project elements. We anticipate open and frank discussions during meetings. This "early and often" interchange of ideas will assure that only the alternatives that have technical merit, are operator friendly, low maintenance, and cost-effective will be considered. Having you involved allows us to benefit from your knowledge, makes sure we get it right the first time, and allows you to get exactly what you want and need.
- **APPLY** a dedicated "Design Team" approach as opposed to "Design Center" approach. The core project delivery team will remain consistent and dedicated to each City assignment from the development of the scope of work through training and start-up. The same engineer who develops a design concept for our scope will work with your staff to refine that concept through detailed design; that same engineer will respond to related contractor RFIs and will inspect construction and work with your operations staff through training and start-up. The continuity of service offered by this design team approach offers many advantages over a design center approach, including:
- **DESIGN DEVELOPMENT** is more rapid and accurate when performed by a dedicated design team.
    - Errors and omissions are often associated with "hand-offs" in a Design Center and are eliminated using a Design Team.
    - Design intent is maintained through construction. The original design engineer is best suited to make critical decisions regarding alternatives suggested during construction, weighing potential cost savings with functionality.
    - The original design engineer who worked from conceptual through construction is best positioned to assist with start-up and training.
    - All of these benefits of the design team approach reduce cost and improve quality. These benefits are strictly lacking in a "design center" approach. In fact, there is little or no benefit to an owner associated with a design center project delivery approach.
- **APPLY** a proven approach to process design and optimization. We will evaluate alternatives and explore ways to maximize use of existing infrastructure using our process optimization approach. This approach includes the use of sound principles instead of relying on rules-of-thumb or "textbook" values that often result in "over" or "under" designed facilities. Our proven approach has been used successfully at many other facilities where it has saved the client money while optimizing treatment capacity.
- **PRODUCE** highly refined plans and specifications. At Carollo, our roots are in "nuts and bolts" water and wastewater plant design. We have many clients who have adopted our CADD standards and others who insist that Carollo produce the plans and specifications for their projects. The clarity of concept and level of detail for Carollo plans and specifications translates to lower bids by allowing contractors to reduce their contingencies.

> *"From the start they proved that they were innovative, had our best interests at heart, and continuously demonstrated their preserverance and resolve to deliver an exceptional work product."*
>
> **Sam Samandi, P.E., Acting Engineering Manager, City of Oklahoma City, OK**

Our Industry Leadership

During our 84-year history, Carollo has successfully completed more than 20,000 projects for the public sector. Unlike the majority of our competitors, we exclusively provide services supporting water and wastewater utilities. We focus on the water/wastewater industry, fostering a reputation for leadership and innovation. Our leadership role is exemplified by the following:

- ***First engineering firm in the waterworks industry to apply computational fluid dynamics***; the groundbreaking application was optimization of the hydraulic characteristics of an ozone contact chamber. This technology, initially developed by the aerospace industry, is now commonly used by most national engineering firms to eliminate short-circuiting and identify non-laminar flow conditions.
- ***Pioneered the use of UV irradiation for drinking water treatment*** via multiple research projects with WaterRF and construction of the first full-scale UV validation facility in North America.
- ***First engineering firm to incorporate micro- or ultra filtration in conjunction with lime softening treatment.*** This concept was pioneered by Carollo and tested on pilot scale operations in the Midwest. Full-scale, award winning facilities now employ this exciting technology, now being utilized by numerous other clients seeking superior water quality at an affordable price.
- ***Carollo developed the use of biological active filtration*** for the removal of a host of compounds from drinking water supplies, including nitrates, MIB & geosmin, pharmaceutical compounds, perchlorate, and a host of other contaminants. Several pilot testing programs are now underway and full-scale facilities being designed to incorporate these customized removal technologies at vastly reduced cost when compared to alternative treatment technologies, such as RO treatment.
- Multiple times over the last 10 years, ***Carollo has led the industry with the most number of papers accepted for presentation at national conferences*** (i.e., AWWA ACE and WEFTEC), and has consistently been in the top three regarding number of papers presented. Our leadership in the industry has also been recognized with the award of several WaterRF, WateReuse Foundation, and Water Environment Federation research projects.

OUR WORKING KNOWLEDGE AND UNDERSTANDING OF YOUR REQUIREMENTS

Innovation.Innovation.Innovation

Carollo has earned a reputation in the industry for technical innovation coupled with practical, value-laden solutions that meet our clients' needs over the long term. We believe we have a unique combination of local understanding, experience, commitment to service, technical innovation, and fresh perspectives that are well suited to address your needs.

Although our national reputation is built on 84 years of service in water engineering, we have a shorter history in South Florida. We are already working for you at your South Central Regional Wastewater Treatment Plant--completing a plant-wide condition assessment, evaluation of electrical transformers and switchgear, and we are currently designing a new sodium hypochlorite storage and feed system.

We have also built a local reputation for high-quality, high-value service with the Cities of Boynton Beach, Margate, and Sunrise; Miami-Dade County Water and Sewer Department, Palm Beach County Water Utilities Department, Collier County, and the South Florida Water Management District, all having entrusted Carollo to assist them with some of their largest and most complex projects over the past few years.

Fundamental to the successful delivery of services to the City is to first understand your goals and objectives for each particular project, along with any impacts the work will have on other planned improvements. Regardless of whether the goal is to complete a planning study, a detailed evaluation of the process and non-process systems, alternatives development and screening, or detailed design, we will listen closely to you to make certain we understand the task at hand.

Master Planning Services

Should you decide to utilize Carollo for any facility or master planning effort, you will find our approach to master planning is founded on the fact that a plan is only as reliable as the information used in its development. This means that if the foundation of the work and assumptions are wrong, your master plan, which relies on this information, is not going to be on target. Therefore, Carollo takes great care in making certain the following key components are duly considered and as accurate as possible.

1. **Demand Projections.** We make certain forecasted demands are accurate by properly taking into account projected population growth, per-capita water demand, water use by industrial and commercial users, existing and pending water conservation programs, and economic forecasts.

2. **Condition and Reliability of Infrastructure.** Thorough condition, reliability, and criticality assessments are performed by skilled and experienced staff in the field, working closely with staff from the City, to make certain the capital improvement program is properly prioritized and customized to your needs.
3. **Regulatory Compliance.** Regulations continuously change and evolve—our planning approach carefully considers potential future regulatory changes so the capital improvements and operational changes are timely, cost-effective, and integrated into the master plans in a manner that is complementary to the other planning elements.
4. **Energy Optimization and Sustainability.** Changes in the way you operate your facilities, improvements to reduce energy, and promoting sustainability are likewise integral to all of Carollo's planning efforts.
5. **Overall Optimization.** Aside from energy reductions, opportunities to reduce chemical costs, often times with improvements to finished water quality, are aggressively sought, as well as opportunities to reduce labor and incidental operating costs through appropriate automation.
6. **Automation.** As part of the optimization process, Carollo focuses a great deal on automation—a term that often means different things to different people or firms. To Carollo, automation simply means improving data acquisition and control in a logical manner by making certain the benefits of automating any given process or piece of equipment outweigh the associated costs. Whatever the benefit (monetary savings, improved water quality, enhanced reliability, safety, etc.), it must be well defined and understood before making the associated investment.
7. **Ease of Use.** No planning document is useful unless it is user-friendly and easy to understand. We take care in producing master plans, GIS, and other supporting materials that are carefully organized reference tools that are user-friendly and easily updated. The master plan will clearly describe all assumptions, methods, and considerations that led to its recommendations. The GIS and hydraulic model databases will be easy to understand and maintained while the CIP will clearly describe which projects need to be done when, where, and why.

Most importantly, these efforts will be done while working side by side with your staff so that your experience dovetails with that of our own. Likewise, we will make certain your experience is woven into the planning efforts, and your preferences and needs listened to as well. Any master planning we may perform for you will fit into your overall planning efforts, enhanced by innovative solutions stemming from our fresh approach and passion to find and seek such solutions on your behalf.

> *"Carollo fostered a team approach which built a strong partnership through trust and cooperation with all parties. This teaming approach delivered a high quality project in every aspect of the project."*
>
> **David Cox, P.E., Utilities Engineering Manager, City of Olatha, KS**

Asset Management/Conducting Thorough Condition Assessments

The first step in developing an effective asset management program is to establish a benchmark relative to the condition and function of your infrastructure, including process and non-process systems, as well as their individual components. Accurate and timely collection of this information is essential for treatment and conveyance facilities to adequately operate in the present and progress into the future with the flexibility to meet additional demands and new operational and regulatory challenges. This approach integrates four parallel efforts: process evaluations, condition assessments, hydraulic evaluations, and regulatory assessments.

Establishing this benchmark begins by performing comprehensive, thorough, and accurate assessments of the existing treatment systems and associated equipment. Our assessment procedure has been proven to successfully accomplish this objective. This procedure includes utilizing technical process experts along with specialty discipline evaluators (specialists in the areas of mechanical, structural, electrical, and controls engineering), non-destructive evaluations (NDEs) testing, and customized software to organize and store information and prioritize needs.

We have demonstrated this approach elsewhere in South Florida. Shown below are infrared thermography pictures taken at both Miami-Dade County and Palm Beach County facilities. This is just one example of the extra steps we will take to truly understand the condition, functionality, and proper operating parameters of your plants and distribution system infrastructure.

Alternative Funding Procurement

The Carollo Team works to enhance value in every project that we undertake. One of the ways we do that is to attract governmental funding from local, state, and federal sources. We will rigorously identify funding opportunities that must take place throughout the planning cycle from project conceptualization to final design and construction.

Traditional funding efforts (i.e., targeted funding) are focused on a linear approach, where a specific project has been identified through an agency's water supply plan, and then funds are sought and obtained based on project attributes. The downside to this approach is that a significant portion of the funding spectrum is ignored and opportunities are lost. Our team's approach is to not only consider "targeted" funding opportunities but also proactively identify "creative" opportunities that would otherwise not be considered.

Creative funding opportunities include research grants, planning grants, block grants, and incentives for energy efficiency and water conservation. Achieving success with creative funding sources involves determining the full benefits of a project to the community and highlighting those benefits in funding applications (e.g., indirect benefits to water supply, job creation benefit, environmental benefits, demonstration of new technologies).

Our team's belief is that funding and legislative assistance should be an integral part of the development and refinement of your strategic planning process. Using this approach, Carollo teams have helped our clients secure millions of dollars for projects from such programs as:

- State Revolving Fund Loans, including "Green Project Reserve."
- Matching Grants through the Florida Water Management District.
- Department of Energy Matching Grants.

> *The work performed by Carollo consistently met or exceeded our expectations, particularly with respect to proactive and effective communication between all parties.*
>
> **Paul Mattausch, Director, Water Department, Collier County, FL**

Ensuring Reliability for the Future

One of the challenges facing the City is maintaining a water supply that addresses future potable water demand projections within the constraints imposed by limited water resources in a tightening regulatory environment.

Historically, the City has relied on the Biscayne Aquifer as its water supply source for the lime softening water treatment plant. Because your future supplies may need to consider highly treated reuse water, the Floridan aquifer, and other alternative sources, more advanced and more expensive treatment technologies will be required to process this water. Our job could be to work closely with you to evaluate options such for treatment of potable and reuse water including conventional treatment, membrane bioreactors, ultraviolet disinfection, reverse osmosis, improved concentrate recovery, blending, and overall source water management including water conservation.

Our Insights on Your Water Treatment Plant

The City's water treatment includes lime softening facility. The lime softening facility most likely recovers approximately 97 percent of the raw water as finished product, with additional treatment by gravity filtration.

Optimizing Clarifier Performance

Lime softening is a reliable, affordable process that has long been the unit operation of choice for treating groundwater in Florida. Carollo has worked with facilities throughout the Midwest, Texas, and Florida that are similar to Delray Beach to maximize the use of their existing facilities and minimize the cost of rehabilitation and upgrades. Similar to Delray Beach's water plant, the City of Olathe, KS, has a water plant with lime softeners or solids contact clarifiers (SCCs). Carollo increased Olathe's softening basin capacity to 37 mgd by retrofitting the existing lime softening basins, allowing the city to avoid the extra cost of additional structures.

Carollo's experience in assessing the performance of lime softeners extends not only from projects throughout the lime softening region of the Midwest but also here in South Florida. For Miami-Dade County, Carollo performed a detailed analysis of the operations of the SCCs at the 165-mgd Preston WTP; an evaluation that compared the loading rates and operating protocol against all the other SCC's throughout the state of Florida.

The SCCs utilized at your treatment facility are one of the oldest technologies in the water treatment industry. Although widely used, SCCs are also one of the most misunderstood and neglected unit processes. The SCC process is the first step in the lime softening solids management, and its impact on the final water quality and dewatered solids should not be underestimated.

Maintaining a high solids concentration in the center cone of the SCC is critical for producing excellent settled water quality and producing a concentrated residuals stream. The concentration of the center cone is managed by increasing the recirculation of solids within the cone. The softening process is optimized by allowing the solids to remain in the center cone and for successive layers of calcium carbonate to precipitate on the existing solids. Increasing the solids concentration in the center cone also decreases the volume of the lime softening solids stream.

The generation of solids in the center cone is dependent upon the following factors:

- Flow rate
- Influent hardness
- Effluent hardness
- Lime dose

Carollo has developed a proven, simple algorithm that captures these factors and uses them to control the solids concentration in the center cone of SCCs. Prior to implementing this algorithm, the City of Manhattan, KS, could not stay within the recommended percent solids range for more than 4 days. Once the algorithm was implemented, the City was able the stay within the recommended percent solids for more than 100 days straight. Maintaining the proper solids concentration results in excellent settled water quality (less solids carryover) and improves dewaterability, resulting in less hauling and disposal costs.

Increasing Capacity by Split Softening

The softening process occurs when the pH is high enough that all of the bicarbonate alkalinity is converted to carbonate, which causes mineral precipitation. The challenge with this precipitation reaction is that it "over-softens" the water (takes out more of the mineral content than desired), resulting in lower hardness than the desired hardness goal. In the U.S., most utilities bypass a portion of this flow around the softening process, but most Southeast Florida utilities are prevented from doing this due to very high total organic carbon content of the raw water and its associated color.

> *I can always trust Carollo to make the right decisions for our projects. They focus on understanding our goals and objectives to ensure they develop the best solutios - not just a copy of some job off the shelf. Despite facing many difficult permitting, schedule, and budget challenges, they always find a way to deliver and exceed our expectations. Their level of client service is second to none adn I would highly recommend them for any proejct.*
>
> **Jay Simonton, CIP Project Manager, City of Yuma, AZ**

Split softening treatment can be successfully utilized in SE Florida if a portion of the carbon content in the bypass water is removed to prevent water color problems. Carollo has recently completed a design for the Palm Beach County, where the use of an ion exchange process will permit bypass flow around the softening units. This process will allow Palm Beach County to "dial-in" the finished water hardness and increase the finished water alkalinity all while producing a more stabilized finished water. In addition, the chemical usage was decreased, solids production was reduced, and the resulting bypass flow will allow Palm Beach County to increase the plant capacity by 15 percent without building any new treatment facilities.

As the regulatory focus of the Environmental Protection Agency shifts to the distribution system, the importance of finished water alkalinity will continue to increase. For systems that utilize chloramines, high finished water alkalinities are even more critical. High alkalinities allow finished water to resist pH changes associated with acid production from biological growth (including nitrification). In addition, the reduction of the organics in the finished water, it also reduces the food source for biofilm growth, which will result in less chloramine residual degradation and reduced distribution system flushing, which can be extremely costly. For the Palm Beach County project, it was estimated that the reduction in organics in the finished water could result in a 50-percent reduction in flushing (for Palm Beach County this 50-percent reduction represented in excess of 1.5-million gallons per day of flushing water saved). A reduction in the City's flushing would also be expected if a split softening system was incorporated into the current treatment schemes.

Optimizing Lime Slaking

In a lime softening treatment system, the majority of the chemical usage and cost is associated with the amount of lime consumed in the process. In order to achieve the maximum efficiency of the lime used, the reactivity, which is primarily controlled by slaking temperature, should be as close to the optimum as possible. The optimal slaking temperature is just below the boiling point of water (this forms the highest surface area of lime). Therefore, the temperature of the slaking process should be as high as possible without creating localized areas where boiling would occur.

Due to the changes in the reactivity of the quicklime, the dilution water temperature, particle size and gradation of the quicklime, and the amount of magnesium in the lime, determination of the correct water-to-lime ratio and detention time, slakers can be difficult to set and maintain. Batch slaking systems address these changing variables and maintain a consistent slaking temperature setpoint. Carollo has experience with the design and installation of batch lime slaking systems including installations for large utilities. Our proposed project team members rewrote the dry chemical feed section of the AWWA/ASCE WTP Design Book, which includes a section on batch lime slaking.

Our team has experience assisting utilities with securing funding for lime slaker replacement projects due to the green features associated with reductions in lime doses, the reduction in solids production and the reduced shipping and hauling costs.

Reducing Energy: Pumping Optimization

Water utility pumping systems consume a significant $300 amount of energy. Carollo has developed an optimization approach to pumping that is tailored to a client's system and has proven to save money by reducing energy costs. This approach involves developing a pumping control algorithm that can be programmed into the control system to operate the pumps based on the desired system pressure and flow rate, in addition to taking into account the operating efficiency and the number of pumps running. All too often, pumps are referred to by their capacity, similar to saying a pump with a rated point of 6,000 gallons per minute (gpm) at 170-feet of total dynamic head is "a 6,000 gpm pump." This is not always the case when the system pressure varies or the number of pumps operating changes, the corresponding output flow rates may change. Recognizing this, a control algorithm may be developed to take into account all of these parameters. The premise is based on the fact that in general, the more pumps driven by variable frequency drives that are operated in parallel, the stricter the efficiency band that can be achieved. The pumping system may then operate at higher efficiencies throughout a wide range of flows.

Maintaining Targeted Water Quality in Your Distribution System

Oftentimes overlooked, water quality in the distribution system can deteriorate rapidly from demands placed on the residual disinfectant from organic and inorganic constituents in the water, and from nitrification, which is common to utilities throughout Florida. In fact, Palm Beach County faced this problem and sought out Carollo to complete a comprehensive study of their treatment and distribution systems in order to abate this problem. Carollo prepared a Nitrification Action Plan for Palm Beach County that quickly became the benchmark in the state on how such studies should be undertaken and implemented. This project involved hydraulic modeling (discussed above under master planning), water quality sampling, analysis, and evaluations at the plant and throughout the distribution system, and development of short-term and long-term strategies to deter nitrification throughout the system.

Most importantly, Carollo understands not only the planning and design elements of a distribution system relative to conveying water, but we also have specialists trained in understanding and managing distribution water quality.

Water Reuse: Augmenting and Protecting the City's Water Resources

In many municipalities, landscape irrigation can take up nearly half the potable water demand. The use of reuse water in the City is going to be increased to allow the SCRWTP to meet the upcoming Ocean Outfall Rule.

HOW IS A SERVICE AUTHORIZATION IMPLEMENTED?

Overview

We are very familiar with continuing services contracts, in fact, most of our work in south Florida is based on that contracting mechanism. We know that there may be many emergency tasks that need to be responded to on the same day. Those tight schedules are met by getting it right the "first time". In addition, we will expect longer term assignments that need to be defined and reworked through multiple meetings.

There is a commonality in the implementation of each of our assignments, highlights are described below.

Engaging Resources: Project Staffing

Proper staffing is key to successful projects. Our fundamental approach is to assemble the best-qualified team to match the project requirements. We then review the scope of the project and review staffing levels and budgets from similar projects to estimate labor requirements to complete a project.

A labor-hour estimate is made for each task in the Scope of Work. The estimate includes time for site visits and meetings, as well as in-office engineering work for the project. We then use historical data, modified for project-specific requirements, to estimate the types of services and personnel classifications to complete each task. For example, our historical records indicate that a typical project design will be about 55 percent professional staff, 40 percent design technicians, and 5 percent clerical.

The project schedule has a significant impact on staffing planning. Project milestones are identified and labor hour requirements per task are estimated to determine staffing levels to complete the task by the milestone date. The staffing levels are broken down by discipline to determine overall office personnel planning. A database on staffing needs and current staff assignments is maintained and updated monthly, both company-wide and in our local office. The database allows us to project workloads and identifies when and if staff becomes over or under committed.

We combine this staffing effort with our project planning, monitoring, and reporting procedures so that each project has adequate resources to meet the project schedule.

Staying on Schedule

Schedules are established by identifying project milestones and determining when each task must be complete to meet the milestone dates. The schedule is reviewed to determine staff requirements to complete the project on schedule. If a project is needed on a fast-track, more staff are assigned than for a project with a longer schedule.

Each month, our project manager will assess the percent complete for the project. The percent complete is estimated on a per-task basis, in a defined manner, and is done independently of budget review. Budget status is not provided to the project manager until after the percent complete has been estimated.

The estimated percent complete is compared to the planned percent complete to determine if the project is on schedule. If the project is not on schedule, staffing adjustments or other corrective measures are implemented.

Tracking Progress

Twice each month, each project manager is provided a record of labor hours charged to each job. Using the cumulative hours, percent of budget used is calculated and plotted on the project S-curve. The "S" curve is a graphical illustration of the project plan, showing how the project will be completed on time and within the labor-hour budget.

The project manager can then assess the following:

- Are percent complete and percent budget expended close to the planned curve?
- Are percent complete and percent budget expended curves parallel, converging, or diverging?
- Does the rate of progress match the budget expenditure rate?

Summary reports of our progress graphically depicting this information will be shared each month with your project manager, along with a discussion of any concerns, action items, and upcoming activities.

Monthly Project Reporting

Carollo project managers routinely prepare a monthly progress report. The report addresses the following items:

- Project percent complete
- Project progress in the previous month
- Budget used
- Budget remaining
- Key decisions made in the previous month
- Items requiring decision
- Potential/actual changes in project scope

The status report is prepared as part of our monitoring of planned versus actual schedule and budget. By monitoring this information on a regular and frequent basis, potential problems are immediately identified and corrective action can be taken at the earliest possible time.

Managing Our Documents

Handling of documents such as meeting minutes, shop drawing submittals, requests for information, construction clarifications, and change order requests is an essential element to the proper Management of the project. Carollo typically uses ProjectWise software and a collaborative website to log in and track all documents generated by the team. The software provides an operational repository for the project documents, allowing easy cataloging and retrieval. When the project concludes, a comprehensive collection of all Contract Documents is available on the website, which can be downloaded to your desired medium for permanent archiving.

The linking of various documents is very important in providing the information required to avoid and mitigate claims. For example, when the project is complete, the relationship of a single request for information (RFI), meeting notes, other correspondence, and change order requests are all linked to any change order that may be warranted and will be grouped together.

Delivering a Quality Product

Careful quality control in our technical products is only one way that we have continued to bring our clients excellent service. Control of construction costs starts with those technical products, which set the table for what happens during construction. Data taken from 25 of our recent large projects, with a total construction cost of more than $225 million, showed change orders totaling less than 1.5 percent (which includes owner-initiated additions to the projects), compared to an industry average of 4 to 5 percent.

Before a project begins, the project manager is responsible for preparing a project checklist. This form lists various project steps and guides the project team to identify

the quality management steps and to document their completion. The checklist helps confirm that the project follows our quality management procedures. Some of the areas we include in our quality management checklist are:

- **Pre-Contract Planning.** Before a proposal is submitted or a contract is signed, we plan how we will complete the work. This includes understanding the project goals, selecting the project team, developing or refining the project scope, and establishing a budget that adequately reflects the level of service requested and expected by the client. Contracts are reviewed internally, prior to being executed, and two signatures are required, with one of these signatures coming from a senior manager in the firm.
- **Special Requirements.** Special requirements that can impact the project are identified. This can include special permits and regulatory approvals that could affect the schedule, teaming arrangements, project delivery issues, or any other issue that is not normally part of our project procedures.
- **Work Plan.** A work plan is developed for each project. The work plan establishes the work sequence effort, when work needs to occur within the project schedule, meeting times, discussion topics at the meetings, key decisions that need to be made, and the project deliverables.
- **Project Management Plan.** The project management plan includes lines of communication, schedule, scope, budget, staffing plan, and special requirements. The project management plan is distributed to the entire design team.
- **Specific Project Checks.** Projects receive a series of reviews at various project points. These include a concept review at the 10-percent level, a peer review at the 10- to 25-percent level, owner review at set milestones, constructability reviews (for design projects only) at the 50- and 95-percent levels, and a detailed check at the 90-percent level.
- **Independent Final Checks.** Senior engineers who have not been involved in the final deliverable of the project provide an internal review. The deliverable is "red-lined" using established checking procedures. The check includes an inter-discipline review. As applicable, a final cost estimate is prepared using our established methodology.
- **Quality Control Tools.** Carollo developed a number of design aid manuals. These manuals are maintained both as hard copies and on our intranet. These documents are regularly used on our projects to provide a consistent approach to quality management.

WHERE WILL CAROLLO'S WORK BE PERFORMED?

Our work will be performed from our local office in nearby Lake Worth:

9897 Lake Worth Road, Suite 302
Lake Worth, Florida

ACCESSIBILITY FOR MEETINGS, COMMUNICATION, COORDINATION, AND SUPERVISION

Carollo's local staff will perform your projects, this proximity inherently results in ease of scheduling meetings and enhanced coordination and partnering with your staff.

MEETING ATTENDANCE

We offer our staff's availability by the following means: a short drive to your offices, video meetings, or a simple teleconference, whatever is preferred or appropriate to the task at hand.

Our staff routinely responds to last minute requests for meeting attendance. Meetings are typically scheduled anytime from same day to a week ahead.

We would plan on meeting in person for pre-schedule meetings.

ACCESSIBILITY DURING AGREEMENT

Our accessibility during the term of the Agreement is simple, we offer a project team that is based in our nearby Lake Worth office supported by Carollo's nationwide network of experts that can be called on to meet specific needs.

Our local staff supports communication with our clients by in-person meetings, email, phone calls, and video conferences.

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SECTION C | Projects for Similar Services

PALM BEACH COUNTY UTILITIES CONTINUING SERVICES CONTRACT

WEST PALM BEACH, FLORIDA

Similar PROJECT EXPERIENCE

2008 - 2017

Carollo, under the Continuing Services Contract for Palm Beach County, completed several studies and designs, as well as stand-alone projects where Carollo was selected through the CCNA process for a project-specific assignment. These include the following:

- ***WTP 2 Filter Replacement.*** Design and construction management of new filters. The new dual media filters with reinforced concrete construction replace the existing Train 1 and 2 steel constructed filters.
- ***WTP MIEX® Treatment System Design.*** Design and construction management of a water treatment system which reduces the color and organic content of the water produced at WTP No. 2. This new treatment system replaced the existing ozone system.
- ***Distribution & Collections O&M Optimization Study.*** Carollo conducted a comprehensive Optimization Assessment of the potable water distribution, reuse water distribution, wastewater collection and lift station O&M functions.
- ***Glades Region Water Master Plan.*** Carollo developed a Water Master Plan for the Glades Region of the County, which is operated by the County's Utilities Department.
- ***Membrane Water Treatment Plant Operations Optimization Study.*** Carollo evaluated methods to optimize facility operations to prepare for future emergency and contingency situations in order so that services to customers would remain uninterrupted. The project recommended a change to no-acid operation to improve reliability during emergency conditions, improve operator safety, and decrease operating costs (estimated savings $700,000/year).
- ***Nitrification Action Plan.*** This project involved an analysis of water quality data at distribution system points of entry versus nitrification events; identification of key factors triggering nitrification episodes; recommendations to improve water quality to minimize likelihood of nitrification; and a response plan to manage nitrification.
- ***Water Conservation Study Phase 1.*** Carollo developed a water use demand model and identify water conservation measures to reduce water usage. Project goals involved reducing future water demands and optimizing the timing of future capital infrastructure. The end result save Sunrise money by delaying and/or downsizing capital projects.
- ***Water Distribution System Security Enhancement Program.*** Carollo assisted the Palm Beach County Water Utilities District (PBCWUD) in developing a Water Security Enhancement Program designed to minimize the impacts of accidental or malicious contamination of its distribution system.
- ***Water Master Plan Update.*** The 2012 Water Master Plan Update documents and evaluates the County's existing water system and provides recommendations for future infrastructure improvements to meet the County's level of service goals while maintaining sustainable water supply development throughout its service area.

REFERENCE

Mr. Jim Stiles,
Director of Utilities

Palm Beach County
8100 Forest Hill Blvd
West Palm Beach, FL 33416

TELEPHONE 561-493-6109

EMAIL jstiles@pbcwater.com

ENGINEERING MODELS DEVELOPMENT FOR THE WASTEWATER COLLECTION SYSTEM, WATER DISTRIBUTION SYSTEM, AND RECLAIMED WATER SYSTEM

CITY OF BOYNTON BEACH, FLORIDA

Similar PROJECT EXPERIENCE

2/2016 - 1/2017

REFERENCE

Mr. Michael R.T. Low
Manager, Technical Services

City of Boynton Beach
Utilities Department
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Boynton Beach, FL 33435

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The City of Boynton Beach selected Carollo to create an integrated utility management tool to help the City manage and plan for just-in-time capital improvements across their utility systems. The resulting Utilities Management Optimization Program (UMOP) model serves as a dynamic long-term planning tool to assist in decision-making for expansion and asset management of their utility infrastructure. It also supports day-to-day operating decisions for all of the City's utility systems.

As part of the UMOP project, Carollo developed and calibrated hydraulic models for the City's wastewater collection, water distribution, and reclaimed water systems. The models were built from the City's existing GIS data as well as new GIS data collected during the UMOP project. The models were built in Innovyze software (InfoSWMM for wastewater, InfoWater for water and reclaimed water distribution). The wastewater model consisted of over 56 miles of pressurized force mains and 53 lift stations, including six master lift stations. The water distribution model included all the existing piping above 3/4 of an inch (more than 10,000 pipe segments), two water treatment plants, and two remote pump stations. The reclaimed water system included all the existing piping and was expanded to plan for an extensive future network. The approach used in all three models allowed for full representation of the flows and demands throughout the systems with select hydraulics to mimic the operation of the existing systems and also plan for future growth.

Throughout the UMOP project, Carollo conducted ten workshops (monthly) with City staff to review key assumptions and performance criteria, models development and calibration results, evaluation of existing and future conditions, and recommended infrastructure improvements based on modeling results, including planning level cost estimates. The end product was "living" network system models that can easily be updated by City staff as infrastructure improvements are completed, and a detailed capital improvement plan to address existing deficiencies to provide capacity for future growth.

HIGHLIGHTS

- Data Collection/Gap Filling
- GIS
- Model Development
- Field Testing/Flow Monitoring
- Models Calibration
- Evaluation of Existing Hydraulic Deficiencies
- Evaluation of Capacity for Future Growth
- Development of Detailed CIP
- Model Training

BOYNTON BEACH WTP IMPROVEMENTS AND GENERAL CONSULTING SERVICES

CITY OF BOYNTON BEACH, FLORIDA

Similar PROJECT EXPERIENCE

2014 - Ongoing

Carollo began serving the City of Boynton Beach with the design of several improvements to their Water Treatment Plants and has continued to serve the City under a General Consulting Services contract. Projects have included:

- ***Ion Exchange Improvements.*** Includes design/build of a 16 mgd MIEX® system and ancillary systems. In addition, modifications to the existing raw water supply system located at the West WTP will be required. These modifications include connections to the existing raw water main and transmission line to transfer water from the Western Wellfield to the East WTP and modifications to the existing CIP spent solution system for waste brine disposal. *(Substantially Complete)*
- ***Wellfield and Transmission Line Hydraulic Analysis.*** Analyzed yield of wellfield and transmission of raw water from Western Wellfield to East WTP. *(Complete)*
- ***West WTP Centralized A/C Plant Assessment.*** The City's West Water Treatment Plant (West WTP) was built in the early 90's and has had ongoing issues with the HVAC systems on the second floor of the membrane building since that time. The second floor house both offices and the main laboratory. Carollo provided analysis of a new centralized chilled water system at the West WTP as well as other existing A/C systems throughout the plant with a centralized A/C chiller system. *(Complete)*
- ***Stormwater Modeling.*** The City has experienced episodes of severe flooding due to rain events. Carollo investigated alternatives to alleviate the flooding in five selected neighborhoods. This investigation included hydrologic and hydraulic modeling to determine alternatives. *(Complete)*
- ***Utilities Management Optimization Plan.*** Carollo is developing a Utilities Management Optimization Plan (UMOP) that will support strategic, long-term decision-making regarding the need and timing of expansion, repair, or replacement of existing facilities, and the need to build facilities to meet regulatory requirements and efficiency goals. This includes the development of four engineering models (e.g. hydraulic models) to simulate existing conditions of the Boynton infrastructure and to plan for future improvements through the development of a CIP. The output of these models (e.g., CIP projects) was used as input to the UMOP. *(Complete)*
- ***Asset Management.*** This work includes conducting a condition assessment of the City's treatment plants, distribution system, collection system (including master lift stations), and reuse system. In addition, Minetek, an asset management program will be used for the City's long-term development of capital costs. *(Ongoing)*

REFERENCE

Mr. Colin Groff
Assistant City Manager Public Services

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Utilities Department
124 E Woolbright Road

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EMAIL groffc@bbfl.us

POMPANO BEACH CONSULTING SERVICES ENGINEERING CONTRACT

CITY OF POMPANO BEACH, FLORIDA

Similar PROJECT EXPERIENCE

2011 - Ongoing

Carollo, under the Consulting Services Engineering Contract for the City of Pompano Beach, completed several studies and designs. These include the following:

- ***Electrical Master Plan, Phase I and II, Design.*** Developed a high service pump station electrical master plan followed by implementation of identified Phase I improvements for the replacement and upgrade of power distribution system with state-of- the-art equipment to increase the reliability of the electrical system for the WTP and compliance with current building and life safety codes. *(Complete)*
- ***Energy Performance Study.*** Review of the possible addition of variable frequency drive units to the high service pump station and replacement of HVAC equipment. The review included safety, long term reliability, and value of the proposed products. *(Complete)*
- ***Prepurchase for Phase I and II Electrical Master Plan Improvements.*** Included prepurchase of 4160V Motor Control Centers (MSSc). The MCCs are a component of the Phase I and II upgrades. *(Complete)*
- ***Lime versus Nanofiltration WTP Evaluation.*** Evaluated the advantages and disadvantages of the expansion of the nanofiltration WTP versus an upgrade of the lime softening WTP. *(Complete)*
- ***Avondale Stormwater Improvement Project.*** Assessed the feasibility, the regulatory permit restrictions, the cost impacts, and the flood reduction effectiveness of each potential alternative. *(Complete)*
- ***High Service Pumps Improvement Project.*** Design of improvements to provide ample capacity and reliability for the replacement of switchgear to meet current and future energy demands and service for the High Service Pump Facility. *(Complete)*
- ***Membrane Concentrate Disposal Alternative Study.*** Carollo evaluated alternatives for emergency disposal of membrane concentrate and implement the preferred alternative. *(Complete)*
- ***Reuse Treatment Plant Permit Renewal.*** Carollo prepared application materials necessary for the renewal of the existing operating permit for the City's Reuse Treatment Facility, which is permitted to treat 7.5 mgd of reuse domestic wastewater. *(Complete)*
- ***WTP Transfer Pump Station Improvements.*** This project provides for redundancy and reliability for the City's water treatment plants, specifically the transfer of treated water into the clearwell, including assessment of remedies to an apparent hydraulic bottleneck into the transfer station, selection of a motor and the Installation of two vertical turbine pumps owned by the City, upgrade of electrical equipment for the transfer station, and design of ancillary improvements for HVAC, access, lighting and wall insulation in the transfer station. *(Ongoing)*

REFERENCE

Mr. Randy Brown
Utilities Director

City of Pompano Beach
Utilities Department
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Pompano Beach, FL 33060

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EMAIL randolph.brown@copbfl.com

SUNRISE GENERAL SERVICES

CITY OF SUNRISE, FLORIDA

Similar PROJECT EXPERIENCE

2011 - Ongoing

Carollo, under the Continuing Services Contract for the City of Sunrise, completed several studies and designs, as well as stand-alone projects where Carollo was selected through the CCNA process for a project-specific assignment. These include the following:

- ***Sawgrass Water Treatment Plant Expansion Design.*** Carollo performed study and design services for a 3-mgd RO WTP to be constructed at the existing 18-mgd Sawgrass WTP to allow the facility to expand it to 6 mgd in the future. *(Complete)*
- ***Sawgrass Water Treatment Plant Expansion Study.*** Carollo worked on the study phase that included the evaluation of potential processes to expand potable water treatment capacity, improve overall facility water recovery, improve potable water quality, and provide an analysis of options for new brackish water treatment facilities. *(Complete)*
- ***Sawgrass Water Treatment Plant Membrane Element Replacement Evaluation.*** Carollo performed an evaluation of the industry available NF membranes to determine which would be most appropriate for use in this replacement activity. *(Complete)*
- ***Sawgrass Water Treatment Plant Rerate Improvements.*** Carollo evaluated the existing 18-mgd NF treatment system and provided the necessary technical and permitting support to re-rate the NF facility from 18 to 24 mgd. Carollo also provided construction management services (CMS) to include construction contract administration and inspection services by staff experienced in the discipline fields that correspond to the inspection activity. *(Complete)*
- ***Springtree Water Treatment Plant Improvements.*** Carollo completed the study phase of this project that included the evaluation of potential improvements for rehabilitation and renewal of a 24-mgd lime softening facility. Carollo also performed pilot testing of ion exchange and ballasted flocculation technologies for organics control alternatives. Carollo also provided construction management services to include construction contract administration and period inspection services during construction of sodium hypochlorite tank replacement project. Project includes replacement of four existing 15,000 gallon each FRP sodium hypochlorite solution storage tanks with new FRP tanks, piping, accessories, and level indicators. *(Complete)*
- ***Springtree Water Treatment Plant Lime Residuals Handling and Disposal Evaluation.*** Carollo was selected to evaluate lime handling, solids minimization, and disposal options. Due to the limited dewatering lime sludge storage area available at the plant site and the nuisances associated with the dust that is created by storing the sludge in an open area, the City desired to improve operations of the existing lime sludge thickening and/or dewatering process. *(Complete)*

REFERENCE

Mr. Timothy Welch, P.E.
Director of Utilities

City of Sunrise
Utilities Department
777 Sawgrass Corporate Parkway
Sunrise, FL 33325

TELEPHONE 954-888-6055

EMAIL twelch@sunrisefl.gov

BROWARD COUNTY POTABLE WATER STORAGE TANKS AND PUMPING STATIONS

BROWARD COUNTY, FLORIDA

Similar PROJECT EXPERIENCE

2014 - Ongoing

Broward County has numerous storage tanks, pumping stations and chemical feed systems that will be upgraded or built in the next five years. Carollo was selected in 2014 to complete the planning, design, and construction-phase service for every one of these projects, including the following:

- ***New 2.5-MG Ground Storage Facility and New High Service Pump Station, Electrical/Generator Room and Chemical Facilities (District 3A).*** New variable speed drive pumps, in conjunction with the appropriate control logic, will maintain a relatively stable discharge pressure. Furthermore, the pumps will receive equal use and wear, maximizing the useful life of all four units and providing operations with maximum flexibility. Design complete, project going to bid.
- ***New 5-MG Ground Storage Tank and Existing Storage Tank Repair (District 2A).*** Construction constraints included maintaining the existing two pump stations in operation and implementing a temporary bypass line to keep the North HSPS in full service during construction. The new 5.0 MG tank will maximize efficiency in operation of the tanks, in addition to providing an additional 3.5 MG of storage capacity. This additional capacity will provide the facility approximately 16 hours of storage at the projected average flow for 2040. Design 90 percent complete.
- ***New 1.5-MG Ground Storage Facility, High Service Pump Station, and Chemical Facility. (District 1B1).*** The facility is currently comprised of a 1.5 MG finished water storage tank, a high service pump station (HSPS) including four outdoor pumps, a sodium hypochlorite feed system, a diesel engine generator, and a sewer lift station. Design, complete, project going to bid.
- ***New Ground Storage Facility, High Service Pump Station, Chemical Facility, and Water Main Extension (final sizes to be determined during pre-design study) (District 1A2).*** Design assessment, design, and engineering services during construction of the new Ground Storage Facility, High Service Pump Station, Chemical Facility, and Water Main Extension. Site assessment is complete, design pending.

Carollo is also responsible for construction management of these projects.

REFERENCE

Mr. Jeff Greenfield
Project Manager

Broward County
Water and Wastewater Engineering Division
2555 W. Copans Road
Pompano Beach, FL 33069

TELEPHONE 954-831-0923

EMAIL jgreenfield@broward.org

WASTEWATER COLLECTION SYSTEM MODELING

CITY OF PLANTATION, FLORIDA

Similar PROJECT EXPERIENCE

12/2013 - 6/2015

The City of Plantation (City) provides wastewater service to approximately 85,000 utility customers and maintains over 246 miles of sewer collection lines. The City desired a wastewater collection system model to guide master planning efforts for system upgrades and enhance day-to-day operations. The wastewater collection system model now serves the City as a useful capital improvements and operational optimization tool.

Operational simulations have helped the City reduce electrical costs by identifying the lift stations with high run times and potential pump improvements to reduce energy use. The model is used to improve lift station control elevations and sequencing to reduce overall energy use. In addition, the City can identify the most critical lift stations to prevent sanitary sewer overflows and evaluate potential capacity increases.

The collection system consists of 138 wastewater lift stations, with capacities between 42 and 6,000 gallons per minute. The lift stations are connected to approximately 50 miles of force main, ranging in diameter from 4 to 30 inch.

REFERENCE

Mr. Steven Urich
Assistant Director of Utilities

City of Plantation
Utilities Department
400 NW 73rd Avenue
Plantation, FL 33317

TELEPHONE 954-7977-2290

EMAIL surich@plantation.org

Carollo constructed a hydraulic model of the City's wastewater lift station and force main system using Innovyze InfoSWMM software. Carollo gathered necessary field and record data, developed land use based flow projections, drafted the model, performed model calibration activities, evaluated the existing forcemain system, provided recommendations for improvements, and analyzed two future scenarios specified by the client.

The existing system performance was evaluated against criteria for force main hydraulic performance, lift station pumping and storage, and reliability/vulnerability of the system. The vulnerability analysis was performed to analyze the degree of strain put on the system by wet weather flows. Results indicated a significant level of vulnerability when system flows are greater than about 1.25 times annual average daily flows over a 48-hour period; at this flow the wastewater loading exceeds the conveyance capacity of the lift station network.

HIGHLIGHTS

- Data Collection/Gap Filling
- GIS
- Wastewater Model Development
- Field Testing/Flow Monitoring
- Model Calibration

SOUTHWEST WATER RECLAMATION FACILITY MULTIPLE PHASE IMPROVEMENTS

MANATEE COUNTY, FLORIDA

Similar PROJECT EXPERIENCE

11/2011 - 10/2015

The Southwest Water Reclamation facility (SWWRF) has a permitted capacity of 40 mgd and experienced significant deterioration. The four secondary clarifier's mechanisms and the headworks equipment are more than 20 years old and beyond their useful life. Much of the equipment and concrete affiliated with the headworks was deteriorated and in need of restoration or replacement. Additionally, the scum ejector equipment for Clarifiers 3 & 4 were more than 20 years old and no longer operational. Carollo was retained to design the following components:

- Rehabilitated headworks facility, including structural rehabilitation, channel modifications, new screenings conveyors, and a new grit classifier and removal system.
- New clarifier mechanisms and effluent launders for Clarifiers 1 through 4.
- New variable frequency drives for existing RAS Pump Nos. 2, 4, 5, and 6.
- New scum pumping systems for Clarifier 3 & 4.
- New electrical and I&C wiring and conduits to support all new and rehabilitated facilities.

Carollo designed the project in multiple phases to allow the plant to be in operation while making all the improvements to the headworks, clarifiers, and other renovated equipment and systems. The headworks upgrades were designed to maintain the facility in operation by isolating the individual channels. The replacement of the clarifier's mechanisms, screenings conveyors, and grit classifiers will dramatically improve plant reliability and efficiency. These new scum pumps eliminated the problematic and odorous operation and maintenance issues. New variable frequency drives improve the operational efficiency and prolong the life of the existing pumps.

REFERENCE

Mr. Anthony Benitez, P.E.
Project Engineer II

Manatee County
1022 26th Avenue East
Bradenton, FL 34208-7333

TELEPHONE 941-708-7450 x7333

EMAIL
anthony.benitez@mymanatee.org

PROGRESSIVE DESIGN-BUILD OF ION EXCHANGE SYSTEM

CITY OF BOYNTON BEACH, FLORIDA

Similar PROJECT EXPERIENCE

7/2014 - Ongoing

The City owns and operates two water treatment plants (WTP), the East WTP (EWTP) and the West WTP (WWTP). Both facilities utilize the local surficial aquifer (LSA) as a raw water source. A primary driver for the City is directly related to the groundwater withdrawal permit. The City formulated an innovative plan to utilize raw water from the Western Wellfield and treat it with the magnetic ion exchange (MIEX®) process.

The project team designed and constructed a 16-mgd MIEX® treatment process to pre-treat water from multiple wells prior to the lime softening process. Using this approach, the project brings together a new organics removal MIEX® system for Western Wellfield water with the use of excess treatment capacity for hardness removal and filtration at the EWTP. Permitting, equipment procurement, and instrumentation and control programming were all critical to the project schedule.

REFERENCE

Mr. Colin Groff
Assistant City Manager Public Services

City of Boynton Beach
Utilities Department
124 E Woolbright Road

TELEPHONE 561-742-6401

EMAIL groffc@bbfl.us

Highlights include:

- Design: The project team developed a cost-effective solution to increase capacity at the existing water treatment facility with minimal disruption. Due to the height of the treatment equipment, extreme care was required in the design of the facility to make sure it blended with the surrounding aesthetics.
- Process Selection: Various treatment technologies and strategies were evaluated. Carollo assisted the City in determining the best technology to meet their needs.
- Permitting: Based on water use permitting requirements, the City needed to have the facilities operational as soon as possible to provide the needed additional water treatment production. Permits were procured by the design-build team in stages to correspond to the construction schedule.
- Construction: The new treatment process was sited at the existing plant requiring relocation of electrical utilities and the repurposing of existing buildings.
- Operations: Construction required six individual plant tie-ins and shut downs that could not interfere with plant operations. This was completed through detailed planning and coordination with the plant's operation staff.

This project is substantially complete and near final completion.

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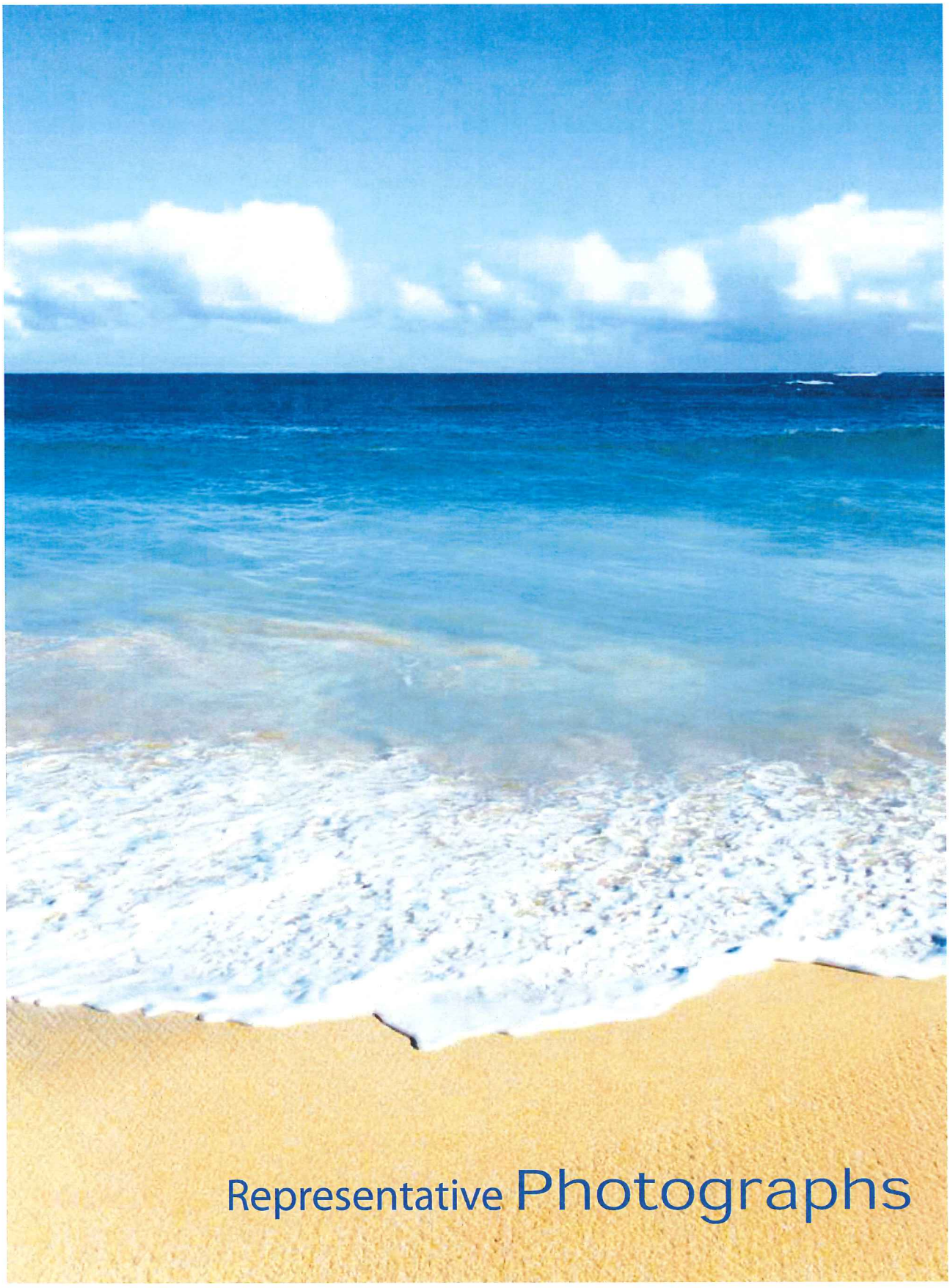

Representative Photographs

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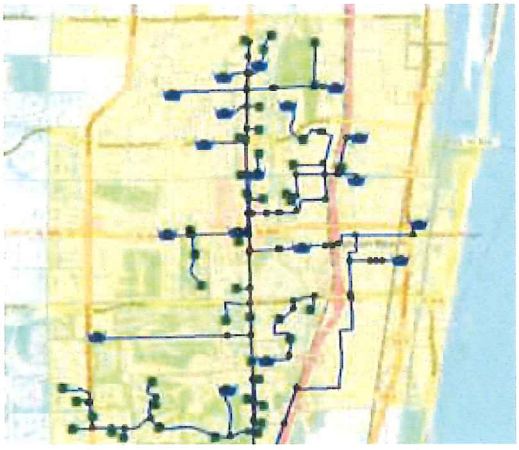
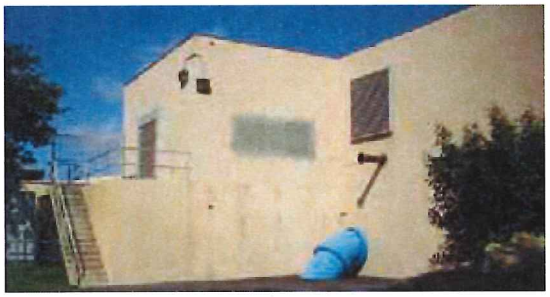
PALM BEACH COUNTY UTILITIES CONTINUING SERVICES CONTRACT, WEST PALM BEACH, FLORIDA

ENGINEERING MODELS DEVELOPMENT FOR THE WASTEWATER COLLECTION SYSTEM, WATER DISTRIBUTION SYSTEM, AND RECLAIMED WATER SYSTEM, CITY OF BOYNTON BEACH, FLORIDA



BOYNTON BEACH WTP IMPROVEMENTS AND GENERAL CONSULTING SERVICES, CITY OF BOYNTON BEACH, FLORIDA

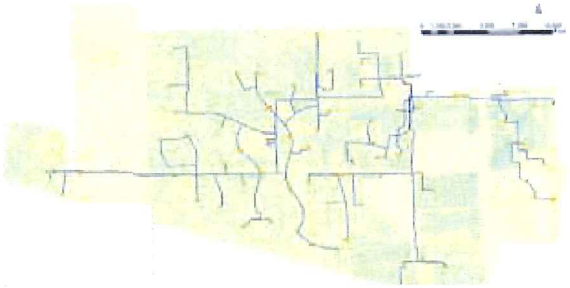
POMPANO BEACH CONSULTING SERVICES ENGINEERING CONTRACT, CITY OF POMPANO BEACH, FLORIDA



SUNRISE GENERAL SERVICES, CITY OF SUNRISE, FLORIDA

BROWARD COUNTY POTABLE WATER STORAGE TANKS AND PUMPING STATIONS, BROWARD COUNTY, FLORIDA

WASTEWATER COLLECTION SYSTEM MODELING, CITY OF PLANTATION, FLORIDA



SOUTHWEST WATER RECLAMATION FACILITY MULTIPLE PHASE IMPROVEMENTS, MANATEE COUNTY, FLORIDA

PROGRESSIVE DESIGN-BUILD OF ION EXCHANGE SYSTEM, CITY OF BOYNTON BEACH, FLORIDA

SECTION D | Organizational Structure

DETAILS OF RESOURCES

We are confident that our key team members and firm have the capacity and resources to deliver your Continuing Engineering Services projects within your desired timeframe. Our company-wide staff numbers more than 960 employees including more 425 registered engineers. Further, we will deliver responsive service from our nearby office in Lake Worth. Carollo's breakdown of staff by discipline is shown in the table below.

As a specialty water/ wastewater firm, we offer all the benefits of a small firm focused day-to-day on water and wastewater with the large firm benefits of national perspectives.

Staff Discipline Breakdown

DISCIPLINE	NO. OF EMPLOYEES	
	LOCAL	CORPORATE
Administration	1	90
Architects	0	5
Chemical Engineer	0	4
Civil Engineers	6	204
Computer Personnel	0	34
Construction Engineer	0	6
Construction Inspectors	2	39
Construction Manager	0	19
Draftsperson	0	101
Electrical Engineer	0	31
Environmental Engineers	4	230
Geographic Information System	0	2
Instrumentation/Control	0	38
Marketing	0	38
Mechanical Engineers	0	21
Structural Engineers	0	32
Word Processing	0	21
Other Employees	0	48

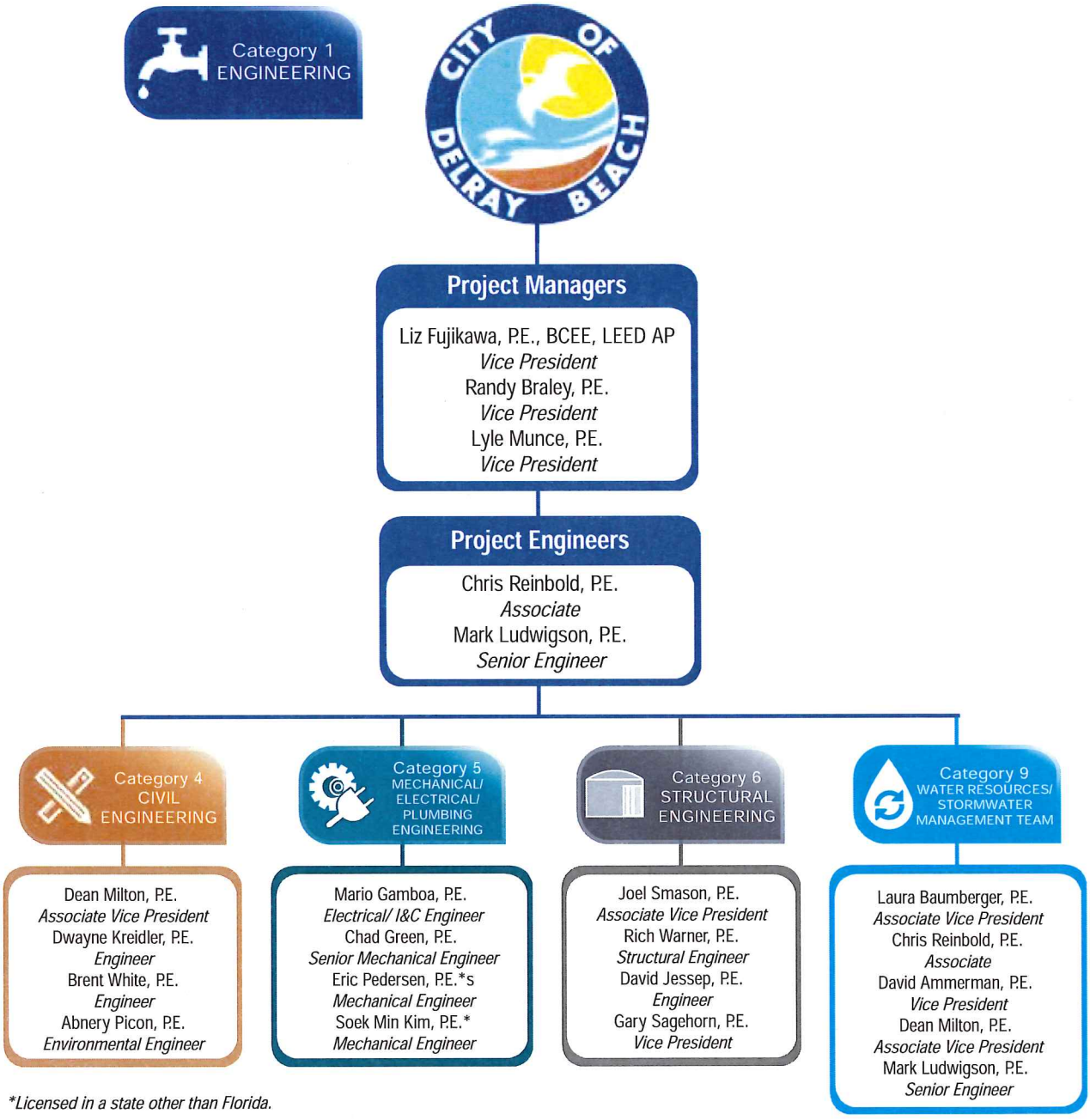
SUBCONSULTANTS

Carollo is a full service firm, we anticipate that typically only local geotechnical and surveying firms will be added to our team on an as needed basis. Those firms will be selected in partnership with your staff based on familiarity and past performance on your projects. The table at the end of this section represents the availability of each key team member, as well as the other projects they are currently delivering.

ORGANIZATIONAL DIAGRAM

This continuing services contract will be managed and directed by Liz Fujikawa. The organizational chart on the next page shows the path of responsibility between the City staff, our project managers and our "Hand Selected" Carollo team. This team and organizational structure has the following key benefits:

- **Core Team with Extensive Local Experience.** A core team with the depth of local resources to start work immediately on clearly defined task order elements.
- **Flexibility.** The team must have the full commitment of a pool of on-call experts and resources that are available at a moment's notice to support you on any challenge. We have over 70 local staff in our Florida offices, supplemented by our nationwide experts, and they are committed to your success.



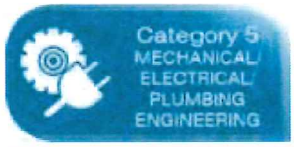
*Licensed in a state other than Florida.

RESPONSIBILITIES AND ROLES

Shown below are the roles and responsibilities of our key staff members.

KEY PERSONNEL/ROLE	RESPONSIBILITIES
Liz Fujikawa, P.E., BCEE, LEED AP Project Manager	• Overall contract management • Management of individual task orders
Randy Braley, P.E., Project Manager	• Management of individual task orders
Lyle Munce, P.E., Project Manager	• Management of individual task orders
Chris Reinbold, P.E., Project Engineer	• Project Engineering: analyses, preparation of plans and specifications, construction management and permitting.
Mark Ludwigson, P.E., Project Engineer	• Project Engineering: analyses, preparation of plans and specifications, construction management and permitting.

KEY PERSONNEL/ROLE	RESPONSIBILITIES
Dean Milton, P.E., Lead Civil Engineer	• Study and design of pipelines, transmission lines, stormwater analyses, grading and drainage, sewer and water pumping stations.
Dwayne Kreidler, P.E., Civil Engineer	• Study and design of pipelines, transmission lines, stormwater analyses, grading and drainage, sewer and water pumping stations.
Brent White, P.E., Civil Engineer	• Study and design of pipelines, transmission lines, stormwater analyses, grading and drainage, sewer and water pumping stations.
Abnery Picon, P.E., Civil Engineer	• Study and design of pipelines, transmission lines, stormwater analyses, grading and drainage, sewer and water pumping stations.



KEY PERSONNEL/ROLE	RESPONSIBILITIES
Mario Gamboa, P.E., Lead Electrical/I&C Engineer	• Electrical analyses of FPL supply alternatives, design of electrical distribution systems, switchgear selection, arc flash studies, lighting, surge analysis, energy assessments.
Chad Green, P.E., Lead HVAC/Plumbing Engineer	• HVAC designs and studies: air conditioning, dehumidification, heating. • Plumbing designs and studies: protected water supplies, fire protection and sanitary systems.
Eric Pedersen, P.E.*, Mechanical Engineer	• HVAC designs and studies: air conditioning, dehumidification, heating. • Plumbing designs and studies: protected water supplies, fire protection and sanitary systems.
Soek Min Kim, P.E.*, Mechanical Engineer	• HVAC designs and studies: air conditioning, dehumidification, heating. • Plumbing designs and studies: protected water supplies, fire protection and sanitary systems.

*Licensed in a state other than Florida.

KEY PERSONNEL/ROLE	RESPONSIBILITIES
Joel Smason, P.E., Lead Structural Engineer	• Design and rehabilitation of water bearing tankage and miscellaneous concrete • Design and rehabilitation of prestressed storage tanks • Design of superstructures
Rich Warner, P.E., Structural Engineer	• Design and rehabilitation of water bearing tankage and miscellaneous concrete • Design and rehabilitation of prestressed storage tanks • Design of superstructures
David Jessep, P.E., Structural Engineer	• Design and rehabilitation of water bearing tankage and miscellaneous concrete • Design and rehabilitation of prestressed storage tanks • Design of superstructures
Gary Sagehorn, P.E., Structural Engineer	• Design and rehabilitation of water bearing tankage and miscellaneous concrete • Design and rehabilitation of prestressed storage tanks • Design of superstructures

KEY PERSONNEL/ROLE	RESPONSIBILITIES
Laura Baumberger, P.E., Lead Master Planner	• Master planning: Hydraulic and hydrologic modeling, population forecasting, analyses of infrastructure needs, permitting.
Chris Reinbold, P.E., Lead Treatment	• Analyses and design of lime softening, filtration, reverse osmosis, nanofiltration, chemical feed, pumping systems, permitting.
David Ammerman, P.E., Lead Reuse	• Analysis and design of reuse systems: process selection, concentrate disposal and blending, permitting.
Dean Milton, P.E., Lead Conveyance/ Transmission	• Analysis and design of distribution, transmission and conveyance systems including lift and pumping stations, permitting.
Mark Ludwigson, P.E., Lead Storage/Pumping	• Analysis and design of pump stations and storage tanks, permitting.

carollo
Engineers...Working Wonders With Water®

9897 Lake Worth Road, Suite 302, Lake Worth, Florida 33467
P. 561.868.6400 F. 561.868.6401

May 25, 2017

City of Delray Beach
Purchasing Department
100 NW 1st Avenue
Delray Beach, FL 33444

Subject: RFQ No. 2017-048 - Continuing Engineering, Surveying, and Landscaping Architectural Consulting Services - Commitment of Personnel and Other Resources

Dear Selection Committee Members:

Carollo Engineers, Inc. recognizes the importance of providing the right resources to the City of Delray Beach on each and every task order issued under the Continuing Engineering, Surveying, and Landscaping Architectural Consulting Services contract (Contract). Therefore, Carollo commits to provide the necessary resources, including the key personnel listed in this proposal, as appropriate to meet the respective needs of each individual task order.

Over the duration of this 5-year Contract, and possible 2-year extension, the workload of key personnel and other resources will vary according to overall project commitments and individual roles and responsibilities within Carollo. Under any circumstance, the depth of our named key personnel and company-wide staff allows us to provide quality deliverables within budget and schedule for City requested task orders.

For the Professional Services Agreement Categories covered by this Contract, the following table presents Carollo's approximate aggregate historical and current, and projected workloads for the named key personnel groups. The estimated aggregate commitment of key personnel groups for this Contract is also noted in the table based on task orders over the 5-year Contract period.

SERVICES	HISTORICAL AND CURRENT WORKLOAD (%, PERCENT)	PROJECTED WORKLOAD (%, PERCENT)	PROJECTED AVAILABILITY (%, PERCENT)
Project Managers	85	85	30
Project Engineers	85	85	40
Civil Engineers	85	85	50
Mechanical, Electrical, and Plumbing Engineers	85	85	50
Structural Engineers	85	85	50
Water Resources/Stormwater Management Team	85	85	60

In summary, Carollo commits to providing personnel and other resources necessary to successfully deliver a requested task order or multiple task orders concurrently under this Contract.

If you have any questions, please contact me.

Sincerely,

CAROLLO ENGINEERS, INC.

Elizabeth Fujikawa, P.E., LEED AP
Vice President and Project Manager

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KEY PERSONNEL'S RECENT, CURRENT, AND PROJECTED WORKLOADS

The key personnel named by Carollo under the Continuing Engineering, Surveying, and Landscaping Architectural Consulting Services contract (Contract) are committed to fulfill the staffing requirements of task orders issued by the City according to the needs of respective task orders. The following table presents historical and current, and projected workloads for the named key personnel. The table also present the availability of key personnel for this Contract based on task orders over the 5-year Contract period.

CATEGORY	KEY PERSONNEL	HISTORICAL AND CURRENT WORKLOAD (%, PERCENT)	PROJECTED WORKLOAD (%, PERCENT)	PROJECTED AVAILABILITY (%, PERCENT)
	Liz Fujikawa, P.E.	85	85	60
	Randy Braley, P.E.	85	85	60
	Lyle Munce, P.E.	85	85	60
	Chris Reinbold, P.E.	85	85	70
	Mark Ludwigson, P.E.	85	85	70
	Dean Milton, P.E.	85	85	80
	Dwane Kreidler, P.E.	85	85	80
	Brent White, P.E.	85	85	80
	Abnery Picon, P.E.	30	85	80
	Mario Gamboa, P.E.	85	85	80
	Chad Green, P.E.	85	85	80
	Eric Pedersen, P.E.*	85	85	80
	Soek Min Kim, P.E.*	85	85	80
	Joel Smason, P.E.	85	85	80
	Rich Warner, P.E.	85	85	80
	David Jessep, P.E.	85	85	80
	Gary Sagehorn, P.E.	85	85	80
	Laura Baumberger, P.E.	85	85	80
	Chris Reinbold, P.E.	85	85	80
	David Ammerman, P.E.	85	85	80
	Dean Milton, P.E.	85	85	80
	Mark Ludwigson, P.E.	85	85	80

*Licensed in a state other than Florida.

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Chapter 5

FORMS (PUBLIC ENTITY FORM, DRUG FREE WORKPLACE FORM, CONFLICT OF INTEREST FORM, ACKNOWLEDGEMENT OF ADDENDA FORM

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:

Carollo Engineers, Inc.
Firm Name

Signature

May 25, 2017
Date

Elizabeth Fujikawa, P.E., BCEE, LEED AP, Vice President
Printed Name and Title

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:

Carollo Engineers, Inc.

Firm Name

Signature

May 25, 2017

Date

Elizabeth Fujikawa, P.E., BCEE, LEED AP, Vice 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.

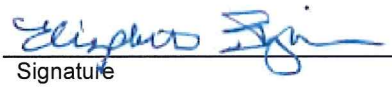
Please check one of the following statements and attach additional documentation if necessary:

☐ 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:

Carollo Engineers, Inc.
Firm Name



Signature

May 25, 2017
Date

Elizabeth Fujikawa, P.E., BCEE, LEED AP, Vice 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
1 (Document Addendum No. 1)	April 24, 2017
2 (Document Addendum No. 2)	April 27, 2017
3 (Document Addendum No. 3)	May 4, 2017
4 (Document Addendum No. 4)	May 10, 2017
5 (Document Addendum No. 5)	May 10, 2017
6	May 11, 2017
7 (Document Addendum No. 6)	May 18, 2017
8 (Document Addendum No. 7)	May 19, 2017

Signature of Proposer's Agent

Vice President
Title

Elizabeth Fujikawa, P.E., BCEE, LEED AP
Printed Name

May 25, 2017
Date

Chapter 6

EVIDENCE OF INSURANCE

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE MM DD YYYY: 5/10/2017

T IS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RI TS UPON T E CERTIFICATE OLDER T IS CERTIFICATE DOES NOT AFFIRMATI ELY OR NE ATI ELY AMEND E TEND OR ALTER T E CO ERA E AFFORDED BY T E POLICIES BELOW T IS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN T E ISSUIN INSURER S AUT ORI ED REPRESENTATI E OR PRODUCER AND T E CERTIFICATE OLDER

IMPORTANT If t e certificate older is an ADDITIONAL INSURED t e policy ies must a e ADDITIONAL INSURED pro isions or be endorsed If SUBRO ATION IS WAI ED sub ect to t e terms and conditions of t e policy certain policies may re uire an endorsement A statement on t is certificate does not confer rig ts to t e certificate older in lieu of suc endorsement s

PRODUCER Risk Strategies Company 2040 ain Street, Suite 450 Irvine, CA 92614 www.risk-strategies.com CA DOI License No. 0F06675	CONTACT NAME Risk Strategies Company P ONE A C No E t 949-242-9240 FA A C No E-MAIL ADDRESS syoung risk-strategies.com
INSURED Carollo Engineers, Inc. 2700 gnacio alley Road, 300 Walnut Creek CA 94598	INSURER S AFFORDIN CO ERA E — NAIC INSURER A assachusetts Bay Insurance Company 22306 INSURER B INSURER C anover Insurance Company 22292 INSURER D Continental Casualty Company 20443 INSURER E INSURER F

CO ERA ES — CERTIFICATE NUMBER 35571504 — RE ISION NUMBER

T IS IS TO CERTIF T AT T E POLICIES OF INSURANCE LISTED BELOW A E BEEN ISSUED TO T E INSURED NA ED ABO E FOR T E POLIC PERIOD INDICATED. NOTWIT STANDIN AN REQUIRE ENT, TER OR CONDITION OF AN CONTRACT OR OT ER DOCU ENT WIT RESPECT TO W IC T IS CERTIFICATE A BE ISSUED OR A PERTAIN, T E INSURANCE AFFORDED B T E POLICIES DESCRIBED EREIN IS SUB ECT TO ALL T E TER S, E CLUSIONS AND CONDITIONS OF SUC POLICIES. LI ITS S OWN A A E BEEN REDUCED B PAID CLAI S.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR W D	POLICY NUMBER	POLICY EFF MM DD YYYY	POLICY E P MM DD YYYY	LIMITS	
A	✓ COMMERCIAL ENERAL LIABILITY CLAI S- ADE ✓ OCCUR ✓ Deductible $0 EN L A RE ATE LI IT APPLIES PER: POLIC ✓ PRO- ECT LOC OT ER:	✓		DF8944892	12/31/2016	12/31/2017	EAC OCCURRENCE DA A E TO RENTED PRE ISES (Ea occurrence) ED E P (Any one person) PERSONAL AD IN UR ENERAL A RE ATE PRODUCTS - CO P/OP A	$ $1,000,000 $ $1,000,000 $ $25,000 $ $1,000,000 $ $2,000,000 $ $2,000,000
A	AUTOMOBILE LIABILITY ✓ AN AUTO OWNED AUTOS ONL SC EDULED AUTOS IRED AUTOS ONL ✓ NON-OWNED AUTOS ONL	✓		ADFA486963	12/31/2016	12/31/2017	CO BINED SIN LE LI IT (Ea accident) BODIL IN UR (Per person) BODIL IN UR (Per accident) PROPERT DA A E (Per accident) Deductible: Comp/Coll	$ $1,000,000 $ $ $ $ $1,000
	UMBRELLA LIAB OCCUR E CESS LIAB CLAI S- ADE DED RETENTION $						EAC OCCURRENCE A RE ATE	$ $
C	WOR ERS COMPENSATION AND EMPLOYERS LIABILITY AN PROPRIETOR/PARTNER/E ECUTI E OFFICER/ E BERE CLUDED Mandatory in N If yes, describe under DESCRIPTION OF OPERATIONS below Y N: N	N A		W F8903731	12/31/2016	12/31/2017	✓ PER STATUTE ✓ OT - ER E.L. EAC ACCIDENT E.L. DISEASE - EA E PLO EE E.L. DISEASE - POLIC LI IT	Deductible: $0 $ $1,000,000 $ $1,000,000 $ $1,000,000
D	Professional Liability Unlimited Prior Acts			AE 288354410	7/4/2016	7/4/2017	Each Claim: Aggregate: Deductible:	$1,000,000 $1,000,000 $400,000

DESCRIPTION OF OPERATIONS LOCATIONS E ICLES ACORD Additional Remarks Sc edule may be attac ed if more space is re uired

Projects as on file with the insured including but not limited to: RFQ : 2017-048 Continuing Engineering, Surveying, and Landscaping Architectural Consulting Services (918-42, 918-89, 906-56). City of Delray Beach is included as additional insured with respects to general auto liability.

CERTIFICATE OLDER

City of Delray Beach
100 NW 1st Avenue
Delray Beach FL 33444

CANCELLATION

S OULD ANY OF T E ABO E DESCRIBED POLICIES BE CANCELLED BEFORE T E E PIRATION DATE T EREOF NOTICE WILL BE DELI ERED IN ACCORDANCE WIT T E POLICY PRO ISIONS

AUT ORI ED REPRESENTATI E

ichael Christian

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DF8944892
Carollo Engineers, Inc.
12/31/2016

T IS ENDORSE ENT C AN ES T E POLIC . PLEASE READ IT CAREFULL .

COMMERCIAL ENERAL LIABILITY BROADENIN ENDORSEMENT

This endorsement modifies insurance provided under the following:

CO ERCIAL ENERAL LIABILIT CO ERA E PART

SUMMARY OF CO ERA ES

	Additional Insured by Contract, Agreement or Permit	Included
	Additional Insured – Primary and Non-Contributory	Included
	Blanket Waiver of Subrogation	Included
	Bodily Injury Redefined	Included
	Broad Form Property Damage – Borrowed Equipment, Customers oods Use of Elevators	Included
	nowledge of Occurrence	Included
	Liberalization Clause	Included
	edical Payments – Extended Reporting Period	Included
	Newly Acquired or Formed Organizations - Covered until end of policy period	Included
	Non-owned Watercraft	51 ft.
	Supplementary Payments Increased Limits	
	- Bail Bonds	$2,500
	- Loss of Earnings	$1000
	Unintentional Failure to Disclose azards	Included
	Unintentional Failure to Notify	Included

This endorsement amends coverages provided under the Commercial eneral Liability Coverage Part through new coverages, higher limits and broader coverage grants.

Additional Insured by Contract Agreement or Permit

The following is added to **SECTION II – W O IS AN INSURED**:

Additional Insured by Contract Agreement or Permit

a Any person or organization with whom you agreed in a written contract, written agreement or permit that such person or organization to add an additional insured on your policy is an additional insured only with respect to liability for "bodily injury", "property damage", or "personal and advertising injury" caused, in whole or in part, by your acts or omissions, or the acts or omissions of those acting on your behalf, but only with respect to:

our work for the additional insured(s) designated in the contract, agreement or permit;

Premises you own, rent, lease or occupy; or

our maintenance, operation or use of equipment leased to you.

b The insurance afforded to such additional insured described above:

Only applies to the extent permitted by law; and

Will not be broader than the insurance which you are required by the contract, agreement or permit to provide for such additional insured.

Applies on a primary basis if that is required by the written contract, written agreement or permit.

Will not be broader than coverage provided to any other insured.

Does not apply if the "bodily injury", "property damage" or "personal and advertising injury" is otherwise excluded from coverage under this Coverage Part, including any endorsements thereto.

c This provision does not apply:

Unless the written contract or written agreement was executed or permit was issued prior to the "bodily injury", "property damage , or personal injury and advertising injury .

To any person or organization included as an insured by another endorsement issued by us and made part of this Coverage Part.

To any lessor of equipment:

a After the equipment lease expires; or

b If the "bodily injury", "property damage", "personal and advertising injury" arises out of sole negligence of the lessor

To any:

a Owners or other interests from. whom land has been leased which takes place after the lease for the land expires; or

b anagers or lessors of premises if:

i The occurrence takes place after you cease to be a tenant in that premises; or

ii The bodily injury , property damage , personal injury or advertising injury arises out of structural alterations, new construction or demolition operations performed by or on behalf of the manager or lessor.

To "bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of or the failure to render any professional services.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage" or the offense which caused the "personal and advertising injury" involved the rendering of or failure to render any professional services by or for you.

d With respect to the insurance afforded to these additional insureds, the following is added to **SECTION III – LIMITS OF INSURANCE**:

The most we will pay on behalf of the additional insured for a covered claim is the lesser of the amount of insurance:

Required by the contract, agreement or permit described in Paragraph **a** or

Available under the applicable Limits of Insurance shown in the Declarations.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

Additional Insured – Primary and Non-Contributory

The following is added to **SECTION I – COMMERCIAL ENERAL LIABILITY CONDITIONS** Paragraph **Ot er insurance**

Additional Insured – Primary and Non-Contributory

If you agree in a written contract, written agreement or permit that the insurance provided to any person or organization included as an Additional Insured under **SECTION II – W O IS AN INSURED**, is primary and non-contributory, the following applies:

If other valid and collectible insurance is available to the Additional Insured for a loss covered under Coverages **A** or **B** of this Coverage Part, our obligations are limited as follows:

a Primary Insurance

This insurance is primary to other insurance that is available to the Additional Insured which covers the

Additional Insured as a Named Insured. We will not seek contribution from any other insurance available to the Additional Insured except:

For the sole negligence of the Additional Insured;

When the Additional Insured is an Additional Insured under another primary liability policy; or

when **b** below applies.

If this insurance is primary, our obligations are not affected unless any of the other insurance is also primary. Then, we will share with all that other insurance by the method described in **c** below.

 Page of

b E cess Insurance

This insurance is excess over any of the other insurance, whether primary, excess, contingent or on any other basis:

a That is Fire, Extended Coverage, Builder s Risk, Installation Risk or similar coverage for your work ;

b That is Fire insurance for premises rented to the Additional Insured or temporarily occupied by the Additional Insured with permission of the owner;

c That is insurance purchased by the Additional Insured to cover the Additional Insured's liability as a tenant for property damage to premises rented to the Additional Insured or temporarily occupied by the Additional with permission of the owner; or

d If the loss arises out of the maintenance or use of aircraft, autos or watercraft to the extent not subject to Exclusion **g** of **SECTION I – CO ERA E A – BODILY INURY AND PROPERTY DAMA E LIABILITY**.

When this insurance is excess, we will have no duty under Coverages **A** or **B** to defend the insured against any suit if any other insurer has a duty to defend the insured against that suit . If no other insurer defends, we will undertake to do so, but we will be entitled to the insured s rights against all those other insurers.

When this insurance is excess over other Insurance, we will pay only our share of the amount of the loss, if any, that exceeds the sum of:

a The total amount that all such other insurance would pay for the loss in the absence of this insurance; and

b The total of all deductible and self insured amounts under all that other insurance.

We will share the remaining loss, if any, with any other insurance that is not described in this Excess Insurance provision and was not bought specifically to apply in excess of the Limits of Insurance shown in the Declarations of this Coverage Part.

c Met od Of S aring

If all of the other insurance permits contribution by equal shares, we will follow this method also. Under this approach each insurer contributes equal amounts until it has paid its applicable limit of insurance or none of the loss remains, whichever comes first. If any of the other insurance does not permit contribution by equal shares, we will contribute by limits. Under this method, each insurer s share is based on the ratio of its applicable limit of insurance to the total applicable limits of insurance of all insurers

Blanket Wai er of Subrogation

The following is added to **SECTION I – COMMERCIAL ENERAL LIABILITY CONDITIONS** Paragraph **Transfer Of Rig ts Of Reco ery Against Ot ers To Us**:

We waive any right of recovery we may have against any person or organization with whom you have a written contract that requires such waiver because of payments we make for damage under this coverage form. The damage must arise out of your activities under a written contract with that person or organization. This waiver applies only to the extent that subrogation is waived under a written contract executed prior to the "occurrence" or offense giving rise to such payments.

Bodily In ury Redefined

SECTION – DEFINITIONS, Definition "bodily injury" is replaced by the following:

"Bodily injury" means bodily injury, sickness or disease sustained by a person including death resulting from any of these at any time. "Bodily injury" includes mental anguish or other mental injury resulting from "bodily injury".

Broad Form Property Damage – Borrowed E uipment Customers oods Use of Ele ators

a **SECTION I – CO ERA ES CO ERA E A – BODILIY IN URY AND PROPERTY DAMA E LIABILITY** Paragraph **E clusions** subparagraph is amended as follows:

Paragraph does not apply to property damage to borrowed equipment while at a jobsite and not being used to perform operations.

Paragraphs and do not apply to property damage to customers goods while on your premises nor do they apply to the use of elevators at premises you own, rent, lease or occupy.

b The following is added to **SECTION – DEFINTIONS**

Customers goods means property of your customer on your premises for the purpose of being:

a worked on; or

b used in your manufacturing process.

c The insurance afforded under this provision is excess over any other valid and collectible property insurance (including deductible) available to the insured whether primary, excess, contingent

nowledge of Occurrence

The following is added to **SECTION I – COMMERCIAL ENERAL LIABILITY CONDITIONS** Paragraph **Duties in t e E ent of Occurrence Offense Claim or Suit**

e Notice of an occurrence , offense, claim or suit will be considered knowledge of the insured if reported to an individual named insured, partner, executive officer or an employee designated by you to give us such a notice.

Liberali ation Clause

The following is added to **SECTION I – COMMERCIAL ENERAL LIABILITY CONDITIONS**

Liberali ation Clause

If we adopt any revision that would broaden the coverage under this Coverage Form without additional premium, within 45 days prior to or during the policy period, the broadened coverage will immediately apply to this Coverage Part.

Medical Payments – E tended Reporting Period

a **SECTION I – CO ERA ES CO ERA E C – MEDICAL PAYMENTS** Paragraph **Insuring Agreement** subparagraph **a b** is replaced by the following:

b The expenses are incurred and reported to us within three years of the date of the accident; and

b This coverage does not apply if **CO ERA E C – MEDICAL PAYMENTS** is excluded either by the provisions of the Coverage Part or by endorsement.

Newly Ac uired Or Formed Organi ations

SECTION II – W O IS AN INSURED Paragraph **a** is replaced by the following:

a Coverage under this provision is afforded until the end of the policy period.

Non-Owned Watercraft

SECTION I – CO ERA ES CO ERA E A BODILY IN URY AND PROPERTY DAMA E LIABILITY Paragraph **E clusions** subparagraph **g** is replaced by the following:

g **Aircraft Auto Or Watercraft**

A watercraft you do not own that is:

a Less than 51 feet long; and

b Not being used to carry persons or property for a charge;

This provision applies to any person who, with your consent, either uses or is responsible for the use of a watercraft.

Supplementary Payments Increased Limits

SECTION I – SUPPLEMENTARY PAYMENTS CO ERA ES A AND B Paragraphs **b** and **d** are replaced by the following:

b Up to $2,500 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which the Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.

d All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit", including actual loss of earnings up to $1000 a day because of time off from work.

Unintentional Failure to Disclose a ards

The following is added to **SECTION I – COMMERCIAL ENERAL LIABILITY CONDITIONS** Paragraph **Representations**

We will not disclaim coverage under this Coverage Part if you fail to disclose all hazards existing as of the inception date of the policy provided such failure is not intentional.

Unintentional Failure to Notify

The following is added to **SECTION I – COMMERCIAL ENERAL LIABILITY CONDITIONS** Paragraph **Duties in t e E ent of Occurrence Offense Claim or Suit**

our rights afforded under this policy shall not be prejudiced if you fail to give us notice of an occurrence , offense, claim or suit , solely due to your reasonable and documented belief that the bodily injury or property damage is not covered under this policy.

ALL OT ER TER S, CONDITIONS, AND E CLUSIONS RE AIN UNC AN ED.

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T IS ENDORSE ENT C AN ES T E POLIC . PLEASE READ IT CAREFULL .

BLAN ET ADDITIONAL INSURED PRIMARY AND NON-CONTRIBUTORY

This endorsement modifies insurance provided under the following:

BUSINESS AUTO CO ERA E FOR

A The following is added to **SECTION II LIABILITY CO ERA E** Paragraph **A W o Is An Insured**

Additional Insured if Re uired by Contract

If you agree in a written contract, written agreement or written permit that a person or organization be added as an additional insured under this Coverage Part, such person or organization is an insured ; but only to the extent that such person or organization qualifies as an insured under paragraph **A c** of this Section.

If you agree in a written contract, written agreement or written permit that a person or organization be added as an additional insured under this Coverage Part, the most we will pay on behalf of such additional insured is the lesser of:

The Limits of Insurance for liability coverage specified in the written contract, written agreement or written permit; or

The Limits of Insurance for Liability Coverage shown in the Declarations applicable to this Coverage Part.

Such amount shall be part of and not in addition to the Limits of Insurance shown in the Declarations applicable to this Coverage Part. Regardless of the number of covered autos , insureds , premiums paid, claims made or vehicles involved in the accident , the most we will pay for the total of all damages and covered pollution cost or expense combined resulting from any one accident is the Limit of Insurance for Liability Coverage shown in the Declarations.

B The following is added to **SECTION I BUSINESS AUTO CONDITIONS** Paragraph **B eneral Conditions** subparagraph **Ot er Insurance**

Primary and Non-Contributory

If you agree in a written contract, written agreement or written permit that the insurance provided to a person or organization who qualifies as an additional insured under **SECTION II LIABILITY CO ERA E** Paragraph **A W o Is An Insured** subparagraph **Additional Insured if Re uired by Contract** is primary and non-contributory, the following applies:

The liability coverage provided by this Coverage Part is primary to any other insurance available to the additional insured as a Named Insured. We will not seek contribution from any other insurance available to the additional insured except:

For the sole negligence of the additional insured ; or

For negligence arising out of the ownership, maintenance or use of any auto not owned by the additional insured or by you, unless that auto is a trailer connected to an auto owned by the additional insured or by you; or

When the additional insured is also an additional insured under another liability policy.

C This endorsement will apply only if the accident occurs:

During the policy period;

Subsequent to the execution of the written contract or written agreement or the issuance of the written permit; and

Prior to the expiration of the period of time that the written contract, written agreement or written permit requires such insurance to be provided to the additional insured .

D Coverage provided to an additional insured will not be broader than coverage provided to any other insured under this Coverage Part.

ALL OT ER TER S, CONDITIONS, AND E CLUSIONS RE AIN UNC AN ED.

Page of

Carollo Engineers, Inc.
9897 Lake Worth Road, Suite 302
Lake Worth, FL 3467
P. 561.868.6400

carollo

Engineers...Working Wonders With Water®

EXHIBIT "B"

Category: Civil Engineering; Mechanical / Electrical / Plumbing 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.