CITY OF POMPANO BEACH,
FLORIDA

PROFESSIONAL CONSULTING AGREEMENT

with

CAROLLO ENGINEERS, INC.

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CONTINUING CONTRACT FOR CIVIL ENGINEERING SERVICES FOR VARIOUS CITY PROJECTS E-20-20

CONTRACT FOR
PROFESSIONAL CONSULTING SERVICES

This Contract is made on _____, by and between the CITY OF POMPANO BEACH, a municipal corporation of the State of Florida, hereinafter referred to as "CITY," and Carollo Engineers, Inc., a Delaware corporation authorized to do business in the State of Florida hereinafter referred to as the "Consultant".

WHEREAS, the Consultant is able and prepared to provide such services as City requires under the terms and conditions set forth herein; and

WHEREAS, the City Commission has approved the recommendation that Consultant be employed by the City and authorized the negotiation of contractual terms.

NOW, THEREFORE, in consideration of the mutual promises herein, the City and the Consultant agree as follows:

ARTICLE 1 – SERVICES/CONSULTANT AND CITY REPRESENTATIVES

The Consultant's responsibility under this Contract is to provide professional consulting services as more specifically set forth in RLI No. E-20-20 attached hereto as Exhibit A and incorporated herein in its entirety.

The Consultant's representative shall be Elizabeth Fujikawa.

The CITY's representative shall be City Engineer or designee,

ARTICLE 2 – TERM

The CONSULTANT shall adhere to the schedule given in each work authorization after receiving the "Notice to Proceed."

Reports and other items shall be delivered or completed in accordance with the detailed schedule set forth in individual Work Authorizations as negotiated.

The Term of this Contract shall be for an initial period of five (5) years from the date of execution by both the City and the Consultant.

ARTICLE 3 – PAYMENTS TO CONSULTANT

A. City agrees to pay Consultant in consideration for its services described herein. It is the intention of the parties hereby to ensure that unless otherwise directed by the City in writing, Consultant will continue to provide services as specified in Exhibit A for the term of this Contract.

B. Price Formula. City agrees to pay Consultant as negotiated on a Work Authorization basis. Each work authorization shall specifically identify the scope of the work to be performed and the fees for said services. As set forth in RLI No. E-20-20, professional services under this contract will be restricted to those required for any project for which construction costs will not exceed four million dollars ($4,000,000.00), and for any study activity fees shall not exceed five hundred thousand dollars ($500,000.00).

C. Fee Determination. Each individual Work Authorization may be negotiated for fees to be earned by Time and Materials with a Not to Exceed Amount, Lump Sum, or a combination of both methods for subtasks contained therein. The total amount to be paid by the City under a Work Authorization shall not exceed specified amounts for all services and materials including "out of pocket" expenses as specified in Paragraph E below and also including any approved subcontracts unless otherwise agreed in writing by both parties. The Consultant shall notify the City's Representative in writing when 90% of the "not to exceed amount" for the total Work Authorization has been reached. The Consultant will bill the City on a monthly basis, or as otherwise provided. Time and Materials billing will be made at the amounts set forth in Exhibit B for services rendered toward the completion of the Scope of Work. Where incremental billings for partially completed items are permitted, the total billings shall not exceed the estimated percentage of completion as of the billing date. It is acknowledged and agreed to by the Consultant that the dollar limitation set forth in this section is a limitation upon and describes the maximum extent of City's obligation to pay Consultant, but does not include a limitation upon Consultant's duty to perform all services set forth in Exhibit A for the total compensation in the amount or less than the guaranteed maximum stated above.

D. Invoices received by the City from the Consultant pursuant to this Contract will be reviewed and approved in writing by the City's Representative, indicating that services have been rendered in conformity with the Contract, and then will be sent to the City's Finance Department for payment. All invoices shall contain a detailed breakdown of the services provided for which payment is being requested. In addition to detailed invoices, upon request of the City's representative, Consultant shall provide City with detailed periodic Status Reports on the project. All invoice payments by City shall be made after the Work has been verified and completed. Unless disputed by City as provided herein, upon City's receipt of a Proper Invoice as defined in §218.72, Florida Statutes, as amended, City shall forward Consultant payment for work performed within forty five (45) days for all goods and services provided.

City may temporarily remove for review any disputed amount, by line item, from an invoice and shall timely provide Consultant written notification of any such disputed charge. Consultant shall provide clarification and a satisfactory explanation to City, along with revised copies of all such documents if inaccuracies or errors are discovered, within ten (10) days of receipt of City's notice of the disputed amount

In the event City has a claim against Consultant for Work performed hereunder which has not been timely remedied in accordance with the provisions of this Article 3, City may withhold payment for the contested amount, in whole or in part, to protect itself from loss on account of defective Work, claims filed or reasonable evidence indicating probable filing of claims by other parties against Consultant, and/or Consultant's failure to make proper payments to subcontractors

or vendors for material or labor. When the reason(s) for withholding payment are removed or resolved in a manner satisfactory to City, payment shall be made.

E. "Out-of-pocket" expenses shall be reimbursed up to an amount not to exceed amounts included in each Work Authorization. All requests for payment of "out-of-pocket" expenses eligible for reimbursement under the terms of this Contract shall include copies of paid receipts, invoices, or other documentation acceptable to the City's Representative and to the Finance Department. Such documentation shall be sufficient to establish that the expense was actually incurred and necessary in the performance of the Scope of Work described in a Work Authorization and this Contract. All out-of- pocket, reimbursables and expenses shall be billed at actual amount paid by Consultant, with no markup.

F. Final Invoice. In order for both parties herein to close their books and records, the Consultant will clearly state "Final Invoice" on the Consultant's final/last billing to the City. This final invoice shall also certify that all services provided by Consultant have been properly performed and all charges and costs have been invoiced to the City. Because this account will thereupon be closed, any and other further charges not properly included on this final invoice are waived by the Consultant.

ARTICLE 4 – TRUTH-IN-NEGOTIATION CERTIFICATE

Signature of this Contract by the Consultant shall also act as the execution of a truth in negotiation certificate, certifying that the wage rates, overhead charges, and other costs used to determine the compensation provided for this Contract are accurate, complete and current as of the date of the Contract and no higher than those charged the Consultant's most favored customer for the same or substantially similar service. Should the City determine that said rates and costs were significantly increased due to incomplete, non-current or inaccurate representation, then said rates shall be adjusted accordingly.

ARTICLE 5 – TERMINATION

City shall have the right to terminate this Contract, in whole or in part, for convenience, cause, default or negligence on Consultant's part, upon ten (10) business days advance written notice to Consultant. Such Notice of Termination may include City's proposed Transition Plan and timeline for terminating the Work, requests for certain Work product documents and materials, and other provisions regarding winding down concerns and activities.

If there is any material breach or default in Consultant's performance of any covenant or obligation hereunder which has not been remedied within ten (10) business days after City's written Notice of Termination, City, in its sole discretion, may terminate this Contract immediately and Consultant shall not be entitled to receive further payment for services rendered from the effective date of the Notice of Termination.

In the event of termination, City shall compensate Consultant for all authorized Work satisfactorily performed through the termination date under the payment terms set forth in Article 3 above and all Work product documents and materials shall be delivered to City within ten (10)

business days from the Notice of Termination. If any Work hereunder is in progress but not completed as of the date of the termination, then upon City's written approval, this Contract may be extended until said Work is completed and accepted by City.

This Contract may be cancelled by the Consultant, upon thirty (30) days prior written notice to the City's Representative, in the event of substantial failure by the City to perform in accordance with the terms of this Contract through no fault of the Consultant.

ARTICLE 6 – PERSONNEL

The Consultant is, and shall be, in the performance of all work services and activities under this Contract, an independent Contractor, and not an employee, agent or servant of the City. All persons engaged in any of the work or services performed pursuant to this Contract shall at all times, and in all places, be subject to the Consultant's sole direction, supervision, and control and shall not in any manner be deemed to be employees of the City. The Consultant shall exercise control over the means and manner in which it and its employees perform the work. This contract does not create a partnership or joint venture between the parties.

The Consultant represents that it has, or will secure at its own expense, all necessary personnel required to perform the services under this Contract. Such personnel shall not be employees of or have any contractual relationship with the City, nor shall such personnel be subject to any withholding for tax, Social Security or other purposes by the City, nor be entitled to any benefits of the City including, but not limited to, sick leave, pension benefits, vacation, medical benefits, life insurance, workers or unemployment compensation benefits, or the like from the City.

All of the services required hereunder shall be performed by the Consultant or under its supervision, and all personnel engaged in performing the services shall be fully qualified and, if required, authorized or permitted under state and local law to perform such services.

Any changes or substitutions in the Consultant's key personnel, as may be listed in Article 1, must be made known to the City's Representative at the time substitution becomes effective.

The Consultant warrants that all services shall be performed by skilled and competent personnel to the degree exercised by consultants performing the same or similar services in the same location at the time the services are provided.

ARTICLE 7 – SUBCONTRACTING

Consultant may subcontract any services or work to be provided to City with the prior written approval of the City's Representative. The City reserves the right to accept the use of a subcontractor or to reject the selection of a particular subcontractor and to inspect all facilities of any subcontractors in order to make determination as to the capability of the subcontractor to perform properly under this Contract. The City's acceptance of a subcontractor shall not be unreasonably withheld. The Consultant is encouraged to seek small business enterprises and to

utilize businesses that are physically located in the City of Pompano Beach with a current Business Tax Receipt for participation in its subcontracting opportunities.

ARTICLE 8 – FEDERAL AND STATE TAX

The City is exempt from payment of Florida State Sales and Use Taxes. The City will provide the Consultant with the current state issued exemption certificate. The Consultant shall not be exempted from paying sales tax to its suppliers for materials used to fulfill contractual obligations with the City, nor is the Consultant authorized to use the City's Tax Exemption Number in securing such materials.

The Consultant shall be responsible for payment of its own and its share of its employees' payroll, payroll taxes and benefits with respect to this Contract

ARTICLE 9 – AVAILABILITY OF FUNDS

The City's performance and obligation to pay under this contract is contingent upon appropriation for various projects, tasks and other professional services by the City Commission.

ARTICLE 10 - INSURANCE REQUIREMENTS

The Consultant shall not commence work under this Contract until it has obtained all insurance required under this paragraph and such insurance has been approved by the Risk Manager of the City, nor shall the Consultant allow any Subcontractor to commence work on its sub-contract until the aforementioned approval is obtained.

CERTIFICATE OF INSURANCE, reflecting evidence of the required insurance, shall be filed with the Risk Manager prior to the commencement of the work. The Certificate shall contain a provision that coverage afforded under these policies will not be cancelled, will not expire and will not be materially modified until at least thirty (30) days prior written notice has been given to the City. Policies shall be issued by companies authorized to conduct business under the laws of the State of Florida and shall have adequate Policyholders and Financial ratings in the latest ratings of A. M. Best and be part of the **Florida Insurance Guarantee Association Act**.

Insurance shall be in force until all work required to be performed under the terms of the Contract is satisfactorily completed as evidenced by the formal acceptance by the City. In the event the Insurance Certificate provided indicates that the insurance shall terminate and lapse during the period of this Contract, the Consultant shall furnish, at least ten (10) days prior to the expiration of the date of such insurance, a renewed Certificate of Insurance as proof that equal and like coverage for the balance of the period of the Contract and extension thereunder is in effect. The Consultant shall not continue to work pursuant to this Contract unless all required insurance remains in full force and effect.

Limits of Liability for required insurance are shown in Exhibit C.

The City of Pompano Beach must be named as an additional insured for the Automobile and Commercial General Liability Coverage.

For Professional Liability, if coverage is provided on a claims made basis, then coverage must be continued for the duration of this Contract and for not less than one (1) year thereafter, or in lieu of continuation, provide an "extended reporting clause" for one (1) year.

Consultant shall notify the City Risk Manager in writing within thirty (30) days of any claims filed or made against the Professional Liability Insurance Policy.

For Workers' Compensation Insurance, coverage shall be maintained during the life of this Contract to comply with statutory limits for all employees, and in the case of any work sublet, the Consultant shall require any Subcontractors similarly to provide Workers' Compensation Insurance for all the latter's employees unless such employees are covered by the protection afforded by the Consultant. The Consultant and his Subcontractors shall maintain during the life of this Contract Employer Liability Insurance.

ARTICLE 11 – INDEMNIFICATION

A. Consultant shall at all times indemnify, hold harmless the City, its officials, employees, volunteers and other authorized agents from and against any and all claims, demands, suit, damages, attorneys' fees, fines, losses, penalties, defense costs or liabilities suffered by the City to the extent caused by any negligent act, omission, breach, recklessness or misconduct of Consultant and/or any of its agents, officers, or employees hereunder, including any inaccuracy in or breach of any of the representations, warranties or covenants made by the Consultant, its agents, officers and/or employees, in the performance of services of this contract. To the extent considered necessary by City, any sums due Consultant hereunder may be retained by City until all of City's claims for indemnification hereunder have been settled or otherwise resolved, and any amount withheld shall not be subject to payment or interest by City.

B. Consultant acknowledges and agrees that City would not enter into this Contract without this indemnification of City by Consultant. The parties agree that one percent (1%) of the total compensation paid to Consultant hereunder shall constitute specific consideration to Consultant for the indemnification provided under this Article and these provisions shall survive expiration or early termination of this Contract.

C. Nothing in this Agreement shall constitute a waiver by the City of its sovereign immunity limits as set forth in section 768.28, Florida Statutes. Nothing herein shall be construed as consent from either party to be sued by third parties.

ARTICLE 12 – SUCCESSORS AND ASSIGNS

The City and the Consultant each binds itself and its partners, successors, executors, administrators and assigns to the other party of this Contract and to the partners, successors, executors, administrators and assigns of such other party, in respect to all covenants of this Contract. Except as above, neither the City nor the Consultant shall assign, sublet, encumber,

convey or transfer its interest in this Contract without prior written consent of the other. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of the City, which may be a party hereto, nor shall it be construed as giving any rights or benefits hereunder to anyone other than the City and the Consultant.

ARTICLE 13 – REMEDIES

The laws of the State of Florida shall govern this Contract. Any and all legal action between the parties arising out of the Contract will be held in Broward County. No remedy herein conferred upon any party is intended to be exclusive of any other remedy, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder or now or hereafter existing at law or in equity or by statute or otherwise. No single or partial exercise by any party of any right, power or remedy hereunder shall preclude any other or further exercise thereof.

ARTICLE 14 – CONFLICT OF INTEREST

The Consultant represents that it has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with the performance of services required hereunder, as provided for in the Code of Ethics for Public Officers and Employees (Chapter 112, Part III, Florida Statutes). The Consultant further represents that no person having any interest shall be employed for said performance.

The Consultant shall promptly notify the City's representative, in writing, by certified mail, of a potential conflict(s) of interest for any prospective business association, interest or other circumstance, which may influence or appear to influence the Consultant's judgment or quality of services being provided hereunder. Such written notification shall identify the prospective business association, interest or circumstance, the nature of work that the Consultant may undertake and request an opinion of the City as to whether the association, interest or circumstance would, in the opinion of the City, constitute a conflict of interest if entered into by the Consultant. The City agrees to notify the Consultant of its opinion by certified mail within thirty (30) days of receipt of notice by the Consultant. If, in the opinion of the City, the prospective business association, interest, or circumstance would not constitute a conflict of interest by the Consultant, the City shall so state in the notice and the Consultant shall at its option, enter into said association, interest or circumstance and it shall be deemed not a conflict of interest with respect to services provided to the City by the Consultant under the terms of this Contract.

ARTICLE 15 – EXCUSABLE DELAYS

The Consultant shall not be considered in default by reason of any failure in performance if such failure arises out of causes reasonably beyond the control of the Consultant or its subcontractors and without their fault or negligence. Such causes include, but are not limited to, acts of God; natural or public health emergencies; freight embargoes; and abnormally severe and unusual weather conditions.

Upon the Consultant's request, the City shall consider the facts and extent of any failure to perform the work and, if the Consultant's failure to perform was without it, or its subcontractors fault or negligence, the Contract Schedule and/or any other affected provision of this Contract shall be revised accordingly; subject to the City's rights to change, terminate, or stop any or all of the work at any time.

ARTICLE 16 – DEBT

The Consultant shall not pledge the City's credit or attempt to make it a guarantor of payment or surety for any contract, debt, obligation, judgment, lien or any form of indebtedness. The Consultant further warrants and represents that it has no obligation or indebtedness that would impair its ability to fulfill the terms of this Contract.

ARTICLE 17 – DISCLOSURE AND OWNERSHIP OF DOCUMENTS

The Consultant shall deliver to the City's representatives for approval and acceptance, and before being eligible for final payment of any amounts due, all documents and materials prepared by and for the City under this Contract.

All written and oral information not in the public domain or not previously known, and all information and data obtained, developed, or supplied by the City or at its expense will be kept confidential by the Consultant and will not be disclosed to any other party, directly or indirectly, without the City's prior written consent unless required by a lawful order. All drawings, maps, sketches, programs, data base, reports and other data developed, or purchased, under this Contract for or at the City's expense shall be and remain the City's property and may be reproduced and reused at the discretion of the City.

A. The City of Pompano Beach is a public agency subject to Chapter 119, Florida Statutes. The Consultant shall comply with Florida's Public Records Law, as amended. Specifically, the Consultant shall:

1. Keep and maintain public records required by the City in order to perform the service.

2. Upon request from the City's custodian of public records, provide the City with a copy of requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes or as otherwise provided by law.

3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Consultant does not transfer the records to the City.

4. Upon completion of the contract, transfer, at no cost to the City, all public records in possession of the Consultant, or keep and maintain public records required by the City to perform the service. If the Consultant transfers all public records to the City upon completion of the contract, the Consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Consultant keeps and maintains public records upon completion of the contract, the Consultant shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records in a format that is compatible with the information technology systems of the City.

B. Failure of the Consultant to provide the above described public records to the City within a reasonable time may subject Consultant to penalties under 119.10, Florida Statutes, as amended.

PUBLIC RECORDS CUSTODIAN

IF THE CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
100 W. Atlantic Blvd., Suite 253
Pompano Beach, Florida 33060
(954) 786-4611
RecordsCustodian@copbfl.com

All covenants, agreements, representations and warranties made herein, or otherwise made in writing by any party pursuant hereto, including but not limited to any representations made herein relating to disclosure or ownership of documents, shall survive the execution and delivery of this Contract and the consummation of the transactions contemplated thereby.

ARTICLE 18 – CONTINGENT FEES

The Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Consultant to solicit or secure this Contract and that it has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the Consultant, any fee, commission, percentage, gift, or any other consideration contingent upon or resulting from the award or making of this Contract. Violation of this Article shall constitute a forfeiture of this Contract by Consultant.

ARTICLE 19 – ACCESS AND AUDITS

The Consultant shall maintain adequate records to justify all charges, expenses, and cost incurred in estimating and performing the work for at least three (3) years after completion of this Contract. The City shall have access to such books, records and documents as required in this section for the purpose of inspection or audit during normal business hours, at the Consultant's place of business.

ARTICLE 20 – NONDISCRIMINATION

The Consultant warrants and represents that all of its employees are treated equally during employment without regard to race, color, religion, disability, sex, age, national origin, ancestry, marital status and sexual orientation.

ARTICLE 21 – INTERPRETATION

The language of this Contract has been agreed to by both parties to express their mutual intent and no rule of strict construction shall be applied to either party hereto. The headings are for reference purposes only and shall not affect in any way the meaning or interpretation of this Contract. All personal pronouns used in this Contract shall include the other gender, and the singular, the plural, and vice versa, unless the context otherwise requires.

ARTICLE 22 – AUTHORITY TO PRACTICE

The Consultant hereby represents and warrants that it has and will continue to maintain all licenses and approvals required conducting its business, and that it will at all times conduct its business activities in a reputable manner. Proof of such licenses and approvals shall be submitted to the City's representative upon request.

ARTICLE 23 – SEVERABILITY

If any term or provision of this Contract, or the application thereof to any person or circumstances shall, to any extent be held invalid or unenforceable, to remainder of this Contract, or the application of such terms or provision, to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected, and every other term and provision of this Contract shall be deemed valid and enforceable to the extent permitted by law.

ARTICLE 24 – ENTIRETY OF CONTRACTUAL AGREEMENT

The City and the Consultant agree that this Contract, together with the Exhibits hereto, sets forth the entire agreement between the parties, and that there are no promises or understandings other than those stated herein. It is further agreed that no modification, amendment or alteration in the terms or conditions contained herein shall be effective unless contained in a written document executed with the same formality and off equal dignity herewith. None of the provisions, terms and conditions contained in this Contract may be added to, modified, superseded or otherwise altered, except by written instrument executed by the parties hereto in accordance

with Article 25 – Modification of Work. In the event of any conflict or inconsistency between this Contract and the provisions in the incorporated Exhibits, the terms of this Contract shall supersede and prevail over the terms in the Exhibits.

ARTICLE 25 – MODIFICATION OF SCOPE OF WORK

The City reserves the right to make changes in the Scope of Work, including alterations, reductions therein or additions thereto. Upon receipt by the Consultant of the City's notification of a contemplated change, the Consultant shall, in writing: (1) provide a detailed estimate for the increase or decrease in cost due to the contemplated change; (2) notify the City of any estimated change in the completion date; and (3) advise the City if the contemplated change shall affect the Consultant's ability to meet the completion dates or schedules of this Contract.

If the City so instructs in writing, the Consultant shall suspend work on that portion of the Scope of Work affected by a contemplated change, pending the City's decision to proceed with the change.

If the City elects to make the change, the City shall initiate a Work Authorization Amendment and the Consultant shall not commence work on any such change until such written amendment is signed by the Consultant and the City Manager, and if such amendment is in excess of $75,000, it must also first be approved by the City Commission and signed by the appropriate City Official authorized by the City Commission

The City shall not be liable for payment of any additional or modified work, which is not authorized in the manner provided for by this Article.

ARTICLE 26 – NOTICE

All notices required in this Contract shall be sent by certified mail, return receipt requested, to the following:

FOR CITY:

City Manager
City of Pompano Beach
Post Office Drawer 1300
Pompano Beach, Florida 33061

FOR CONSULTANT:

Carollo Engineers, Inc.,
2056 Vista Parkway, Suite 400
West Palm Beach, Florida 33411

ARTICLE 27 – OWNERSHIP OF DOCUMENTS

All finished or unfinished documents, data, reports, studies, surveys, drawings, maps, models and photographs prepared or provided by the Consultant in connection with this Contract shall become property of the City, whether the project for which they are made is completed or not, and shall be delivered by Consultant to City within ten (10) days of notice of termination. If applicable, City may withhold any payments then due to Consultant until Consultant complies with the provisions of this section.

ARTICLE 28 – PROMOTING PROJECT OBJECTIVES

Consultant, its employees, subcontractors, and agents shall refrain from acting adverse to the City's interest in promoting the goals and objectives of the projects. Consultant shall take all reasonable measures necessary to effectuate these assurances. In the event Consultant determines it is unable to meet or promote the goals and objectives of the projects, it shall immediately notify the City and the City, may then in its discretion, terminate this Contract.

ARTICLE 29 – PUBLIC ENTITY CRIMES ACT

As of the full execution of this Contract, Consultant certifies that in accordance with §287.133, Florida Statutes, it is not on the Convicted Vendors List maintained by the State of Florida, Department of General Services. If Consultant is subsequently listed on the Convicted Vendors List during the term of this Contract, Consultant agrees it shall immediately provide City written notice of such designation in accordance with Article 26 above.

ARTICLE 30 – GOVERNING LAW

This Contract must be interpreted and construed in accordance with and governed by the laws of the State of Florida. The exclusive venue for any lawsuit arising from, related to, or in connection with this Agreement will be in the state courts of the Seventeenth Judicial Circuit in and for Broward County, Florida. If any claim arising from, related to, or in connection with this Agreement must be litigated in federal court, the exclusive venue for any such lawsuit will be in the United States District Court or United States Bankruptcy Court for the Southern District of Florida. BY ENTERING INTO THIS AGREEMENT, THE PARTIES HEREBY EXPRESSLY WAIVE ANY RIGHTS EITHER PARTY MAY HAVE TO A TRIAL BY JURY OF ANY CIVIL LITIGATION RELATED TO THIS AGREEMENT.

ARTICLE 31 - BINDING EFFECT

The benefits and obligations imposed pursuant to this Contract shall be binding and enforceable by and against the parties hereto.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed the day and year hereinabove written.

Attest:

CITY OF POMPANO BEACH

_____
ASCELETA HAMMOND, CITY CLERK

By:_____
REX HARDIN, MAYOR

By:_____
GREGORY P. HARRISON, CITY MANAGER

(SEAL)

APPROVED AS TO FORM:

_____
MARK E. BERMAN, CITY ATTORNEY

"**CONSULTANT**"

Carollo Engineers, Inc.

Witnesses:

Michelle Ryan
Signature

Michelle Ryan
Name Typed, Printed or Stamped

By: Elizabeth Fujikawa
Elizabeth Fujikawa, Vice President

Stacey Biggs
Signature

Stacey Biggs
Name Type, Printed or Stamped

STATE OF FLORIDA
COUNTY OF Hillsborough

The foregoing instrument was acknowledged before me, by means of □ physical presence or ✓ online notarization, this 14th day of January, 20 21, by Elizabeth Fujikawa, as Vice President of Carollo Engineers, Inc., a Delaware foreign profit corporation, authorized to do business in Florida, on behalf of the corporation. He is personally known to me ~~or who has produced ---------- (type of identification) as identification.~~

NOTARY'S SEAL:

JENNIFER DASILVA OLIVEIRA
Notary Public - State of Florida
Commission # GG 979851
My Comm. Expires Apr 19, 2024

NOTARY PUBLIC, STATE OF FLORIDA

Jennifer DaSilva Oliveira
(Name of Acknowledger Typed, Printed or Stamped)

GG 979851
Commission Number

Florida's Warmest Welcome

CITY OF POMPANO BEACH
REQUEST FOR LETTERS OF INTEREST
E-20-20

CONTINUING CONTRACT FOR CIVIL ENGINEERING SERVICES FOR VARIOUS CITY PROJECTS

RLI OPENING: July 30, 2020 2:00 P.M.
VIRTUAL ZOOM MEETING

June 30, 2020

CITY OF POMPANO BEACH, FLORIDA

REQUEST FOR LETTERS OF INTEREST
E-20-20

CONTINUING CONTRACT FOR CIVIL ENGINEERING SERVICES FOR VARIOUS CITY PROJECTS

Pursuant to Florida Statutes Chapter 287.055 "Consultants' Competitive Negotiation Act" the City of Pompano Beach and the Pompano Beach Community Redevelopment Association (CRA) invite professional firms to submit qualifications and experience for consideration to provide construction engineering inspection (CEI) services to the City and the CRA on a continuing as-needed basis.

The City will receive sealed proposals until **2:00 p.m. (local), July 30, 2020.** Proposals must be submitted electronically through the eBid System on or before the due date/time stated above. Any proposal received after the due date and time specified, will not be considered. Any uncertainty regarding the time a proposal is received will be resolved against the Proposer.

Proposer must be registered on the City's eBid System in order to view the solicitation documents and respond to this solicitation. The complete solicitation document can be downloaded for free from the eBid System as a pdf at: https://pompanobeachfl.ionwave.net. The City is not responsible for the accuracy or completeness of any documentation the Proposer receives from any source other than from the eBid System. Proposer is solely responsible for downloading all required documents. A list of proposers will be read aloud in a public forum.

Introduction

The City of Pompano Beach is seeking qualified civil engineering firms to work on various projects for City and the CRA. The projects range in magnitude from small-scale to large or specialized designs.

The types of projects to be undertaken may include, but are not limited to:

- The City's approved Capital Improvement Plan (CIP) maybe found here: Adopted Capital Improvement Plan FY 2020-2024
- Roadway, Streetscape or Parking Lot projects.
- Water or Reuse Main projects.
- Gravity Sewer Main projects.
- Force Main projects.
- Lift station/pump station rehabilitation projects.
- Parks and Recreational Facilities.
- Seawall and dock construction and repair.
- Storm Water/Drainage Improvement projects
- Consultation for Emergency Water/Wastewater/Stormwater Repairs.
- Inspection Services for Emergency Water/Wastewater/Stormwater Repairs.
- Canal and lake dredging.

- Grant reimbursement, FAA and FDOT support and compliance.
- SRF support and Davis Bacon Wage Reporting requirements
- Support Services for Remediation
- Demolition Projects

A. Scope of Services

The City intends to issue multiple contracts to civil engineering firms to provide continuing professional services to the City and the CRA for various projects as-needed. Professional services under this contract will be restricted to those required for any project for which construction costs will not exceed $4 million, and for any study activity for which fees will not exceed $500,000.00.

The scope of services may include, but is not limited to, the following:

- Prepare preliminary design reports and/or design alternative recommendations. This may include various types of utility modeling, surveying, and field data analysis.
- Prepare all required bidding/construction documents for projects. This may include the preparation of surveys, design plans and construction documents, technical specifications, and cost estimates. Attendance at required pre-design, design, bidding and bid award meeting may also be required.
- Attend pre-bid conference, prepare possible bid addenda for contract document revisions. Assist in making bid award recommendations for contracting/construction services.
- Prepare all required permit applications and submittal packages as required for permit issuance of all agency permits (i.e. Federal, State, County and City).
- Provide construction engineering/management/administration services for projects. Services during construction may include shop drawing/contractor submittal reviews and approvals, inspection and approval of project improvements, certification of projects for various permitting entities, possible field revisions, and review and approval of contractor pay applications.
- Provide project close-out services. This may include preliminary and final acceptance of projects, preparation and approval of punch list items and project certification as required to all permitting agencies.

Firms must have previous municipal experience and must be licensed to practice **Civil Engineering services** in the State of Florida, Florida State Statute 481, by the Board of Professional Regulation.

B. Task/Deliverables

Tasks and deliverables will be determined per project. Each project shall require a signed Work Authorization (WA) form from the awarded firm to be provided to the City or the CRA. Forms shall be completed in its entirety and include the agreed upon scope, tasks, schedule, cost, and deliverables for the project Consultant will be required to provide all applicable insurance requirements.

C. Term of Contract

The Term of this Contract shall be for an initial period of five (5) years from the date of execution by both the City and the Consultant.

D. Project Web Requirements:

1. This project will utilize e-Builder Enterprise™, a web-based project management tool. This web-based application is a collaboration tool, which will allow all project team members continuous access through the Internet to important project data as well as up to the minute decision and approval status information.

   e-Builder Enterprise™ is a comprehensive Project and Program Management system that the City will use to manage all project documents, communications and costs between the Lead Consultant, Sub-Consultants, Design Consultants, Contractor and Owner. e-Builder Enterprise™ includes extensive reporting capabilities to facilitate detailed project reporting in a web-based environment that is accessible to all parties and easy to use. Training will be provided for all consultants selected to provide services for the City of Pompano Beach.

2. Lead and Sub-Consultants shall conduct project controls outlined by the Owner, Project Manager, and/or Construction Manager, utilizing e-Builder Enterprise™. **The designated web-based application license(s) shall be provided by the City to the Prime Consultant and Sub-Consultants.** No additional software will be required.

   Lead Consultant and Sub-Consultants shall have the responsibility for logging in to the project web site on a daily basis, and as necessary to be kept fully apprised of project developments and required action items. , These may include but are not limited to: Contracts, Contract Exhibits, Contract Amendments, Drawing Issuances, Addenda, Bulletins, Permits, Insurance & Bonds, Safety Program Procedures, Safety Notices, Accident Reports, Personnel Injury Reports, Schedules, Site Logistics, Progress Reports, Correspondence, Daily Logs, Non-Conformance Notices, Quality Control Notices, Punch Lists, Meeting Minutes, Requests for Information, Submittal Packages, Substitution Requests, Monthly Payment Request Applications, Supplemental Instructions, Owner Change Directives, Potential Change Orders, Change Order Requests, Change Orders and the like. All supporting data including but not limited to shop drawings, product data sheets, manufacturer data sheets and instructions, method statements, safety SDS sheets, Substitution Requests and the like will be submitted in digital format via e-Builder Enterprise™.

E. Local Business Program

On March 13, 2018, the City Commission approved Ordinance 2018-46, establishing a Local Business Program, a policy to increase the participation of City of Pompano Beach businesses in the City's procurement process.

For purposes of this solicitation, “Local Business” will be defined as follows:

1. **TIER 1 LOCAL VENDOR.** POMPANO BEACH BUSINESS EMPLOYING POMPANO BEACH RESIDENTS. A business entity which has maintained a permanent place of business within the city limits and maintains a staffing level, within this local office, of at least ten percent who are residents of the City of Pompano Beach or includes

subcontracting commitments to Local Vendors Subcontractors for at least ten percent of the contract value. The permanent place of business may not be a post office box. The business must be located in a non-residential zone, and must actually distribute goods or services from that location. The business must be staffed with full-time employees within the limits of the city. In addition, the business must have a current business tax receipt from the City of Pompano Beach for a minimum of one year prior to the date of issuance of a bid or proposal solicitation.

2. **TIER 2 LOCAL VENDOR.** BROWARD COUNTY BUSINESS EMPLOYING POMPANO BEACH RESIDENTS OR UTILIZING LOCAL VENDOR SUBCONTRACTORS. A business entity which has maintained a permanent place of business within Broward County and maintains a staffing level, within this local office, of at least 15% who are residents of the City of Pompano Beach or includes subcontracting commitments to Local Vendors Subcontractors for at least 20% of the contract value. The permanent place of business may not be a post office box. The business must be located in a non- residential zone, and must actually distribute goods or services from that location. The business must be staffed with full-time employees within the limits of the city. In addition, the business must have a current business tax receipt from the respective Broward County municipality for a minimum of one year prior to the date of issuance of a bid or proposal solicitation.

3. **LOCAL VENDOR SUBCONTRACTOR.** POMPANO BEACH BUSINESS. A business entity which has maintained a permanent place of business within the city limits of the City of Pompano Beach. The permanent place of business may not be a post office box. The business must be located in a non-residential zone, and must actually distribute goods or services from that location. The business must be staffed with full-time employees within the limits of the city. In addition, the business must have a current business tax receipt from the City of Pompano Beach for a minimum of one year prior to the date of issuance of a bid or proposal solicitation.

You can view the list of City businesses that have a current Business Tax Receipt on the City's website, and locate local firms that are available to perform the work required by the bid specifications. The business information, sorted by business use classification, is posted on the webpage for the Business Tax Receipt Division: www.pompanobeachfl.gov by selecting the Pompano Beach Business Directory in the Shop Pompano! section.

The City of Pompano Beach is **strongly committed** to insuring the participation of City of Pompano Beach Businesses as contractors and subcontractors for the procurement of goods and services, including labor, materials and equipment. Proposers are required to participate in the City of Pompano Beach's Local Business Program by including, as part of their package, the Local Business Participation Form (Exhibit A,) listing the local businesses that will be used on the contract, and the Letter of Intent Form (Exhibit B) from each local business that will participate in the contract.

Please note that, while no goals have been established for this solicitation, the City encourages Local Business participation in *all* of its procurements.

If a Prime Contractor/Vendor is not able to achieve the level of goal attainment of the contract, the Prime Vendor will be requested to demonstrate and document that good faith efforts were made to achieve the goal by providing the Local Business Unavailability Form (Exhibit C), listing firms that were contacted but not available, and the Good Faith Effort Report (Exhibit D), describing the efforts made to include local business participation in the contract. This documentation shall be provided to the City Commission for acceptance.

The awarded proposer will be required to submit "Local Business Subcontractor Utilization Reports" during projects and after projects have been completed. The reports will be submitted to the assigned City project manager of the project. The Local Business Subcontractor Utilization Report template and instructions have been included in the bid document.

Failure to meet Local Vendor Goal commitments will result in "unsatisfactory" compliance rating. Unsatisfactory ratings may impact award of future projects if a sanction is imposed by the City Commission.

The city shall award a Local Vendor preference based upon vendors, contractors, or subcontractors who are local with a preferences follows:

1. For evaluation purposes, the Tier 1 and Tier 2 businesses shall be a criterion for award in this Solicitation. No business may qualify for more than one tier level.

2. For evaluation purposes, local vendors shall receive the following preferences:

   a. Tier 1 business as defined by this subsection shall be granted a preference in the amount of five percent of total score.

   b. Tier 2 business as defined by this subsection shall be granted a preference in the amount of two and one-half percent of total score.

3. It is the responsibility of the awarded vendor/contractor to comply with all Tier 1 and Tier 2 guidelines. The awarded vendor/contractor must ensure that all requirements are met before execution of a contract.

F. Required Proposal Submittal

Sealed proposals shall be submitted electronically through the eBid System on or before the due date/time stated above. Proposer shall upload response as one (1) file to the eBid System. The file size for uploads is limited to 250 MB. If the file size exceeds 10 MB the response must be split and uploaded as two (2) separate files.

Information to be included in the proposal: In order to maintain comparability and expedite the review process, it is required that proposals be organized in the manner specified below, with the sections clearly labeled:

Title page:
Show the project name and number, the name of the Proposer's firm, address, telephone number, name of contact person and the date.

Table of Contents:
Include a clear identification of the material by section and by page.

Letter of Transmittal:
Briefly state the Proposer's understanding of the project and express a positive commitment to provide the services described herein. State the name(s) of the person(s) who will be authorized to make representations for the Proposer, their title(s), office and E-mail addresses and telephone numbers. Please limit this section to two pages.

Technical Approach:
Firms or teams shall submit their technical approach to the tasks described in the scope, including details of how each phase of the project would be completed, and how their firm proposes to maintain time schedules and cost controls.

Schedule:
Proposer shall provide a timeline that highlights proposed tasks that will meet all applicable deadlines.

References:
References for past projects in the tri-county area (Broward, Palm Beach, and Miami-Dade.) Describe the scope of each project in physical terms and by cost, describe the respondent's responsibilities, and provide the contact information (name, email, telephone number) of an individual in a position of responsibility who can attest to respondent's activities in relation to the project.

List any prior projects performed for the City of Pompano Beach.

Project Team Form:
Submit a completed "Project Team" form. The purpose of this form is to identify the key members of your team, including any specialty subconsultants.

Organizational Chart:
Specifically identify the management plan (if needed) and provide an organizational chart for the team. The proposer must describe at a minimum, the basic approach to these projects, to include reporting hierarchy of staff and sub-consultants, clarify the individual(s) responsible for the co-ordination of separate components of the scope of services.

Statement of Skills and Experience of Project Team:
Describe the experience of the entire project team as it relates to the types of projects described in the Scope section of this solicitation. Include the experience of the prime consultants as well as other members of the project team; i.e., additional personnel, sub-consultants, branch office, team members, and other resources anticipated to be utilized for this project. Name specific projects (successfully completed within the past five years) where the team members have performed similar projects previously.

Resumes of Key Personnel
Include resumes for key personnel for prime and subconsultants.

Office Locations:
Identify the location of the office from which services will be rendered, and the number of professional and administrative staff at the prime office location. Also identify the location

of office(s) of the prime and/or sub consultants that may be utilized to support any or all of the professional services listed above and the number of professional and administrative staff at the prime office location.

If firms are situated outside the local area, (Broward, Palm Beach, and Miami-Dade counties) include a brief statement as to whether or not the firm will arrange for a local office during the term of the contract, if necessary.

Local Businesses:
Completed Local Business program forms, Exhibits A-D.
NOTE: Form B must be signed by a representative of the subcontractor, NOT of the Prime.

Litigation:
Disclose any litigation within the past five (5) years arising out your firm's performance, including status/outcome.

City Forms:
The Proposer Information Page Form and any other required forms must be completed and submitted electronically through the City's eBid System. The City reserves the right to request additional information to ensure the proposer is financially solvent and has sufficient financial resources to perform the contract and shall provide proof thereof of its financial solvency. The City may as at its sole discretion ask for additional proof of financial solvency, including additional documents post proposal opening, and prior to evaluation that demonstrates the Proposer's ability to perform the resulting contract and provide the required materials and/or services.

Reviewed and Audited Financial Statements:

Proposers shall be financially solvent and appropriately capitalized to be able to service the City for the duration of the contract. Proposers shall provide a complete financial statement of the firm's most recent audited financial statements, indicating organization's financial condition. Must be uploaded to the Response Attachments tab in the eBid System as a separate file titled "Financial Statements" and marked "CONFIDENTIAL."

Financial statements provided shall not be older than twelve 12) months prior to the date of filing this solicitation response. The financial statements are to be reviewed and submitted with any accompanying notes and supplemental information. The City of Pompano Beach reserve the right to reject financial statements in which the financial condition shown is of a date twelve (12) months or more prior to the date of submittals.

The City is a public agency subject to Chapter 119, Florida's Public Records Law and is required to provide the public with access to public records, however, financial statements that are required as submittals to prequalify for a solicitation will be exempt from public disclosure.

The City reserves the right to request additional information to ensure the proposer is financially solvent and has sufficient financial resources to perform the contract and shall provide proof thereof of its financial solvency. The City may as at its sole discretion ask for additional proof of financial solvency, including additional documents post proposal opening, and prior to evaluation that demonstrates the Proposer's ability to perform the resulting contract and provide the required materials and/or services.

A combination of two (2) or more of the following may substitute for audited financial statements:

1) Bank letters/statements for the past 3 months
2) Balance sheet, profit and loss statement, cash flow report
3) IRS returns for the last 2 years
4) Letter from CPA showing profits and loss statements (certified)

G. Insurance

CONTRACTOR shall not commence services under the terms of this Agreement until certification or proof of insurance detailing terms and provisions has been received and approved in writing by the CITY's Risk Manager. If you are responding to a bid and have questions regarding the insurance requirements hereunder, please contact the CITY's Purchasing Department at (954) 786-4098. If the contract has already been awarded, please direct any queries and proof of the requisite insurance coverage to CITY staff responsible for oversight of the subject project/contract.

CONTRACTOR is responsible to deliver to the CITY for timely review and written approval/disapproval Certificates of Insurance which evidence that all insurance required hereunder is in full force and effect and which name on a primary basis, the CITY as an additional insured on all such coverage.

Throughout the term of this Agreement, CITY, by and through its Risk Manager, reserve the right to review, modify, reject or accept any insurance policies required by this Agreement, including limits, coverages or endorsements. CITY reserves the right, but not the obligation, to review and reject any insurer providing coverage because of poor financial condition or failure to operate legally.

Failure to maintain the required insurance shall be considered an event of default. The requirements herein, as well as CITY's review or acceptance of insurance maintained by CONTRACTOR, are not intended to and shall not in any way limit or qualify the liabilities and obligations assumed by CONTRACTOR under this Agreement.

Throughout the term of this Agreement, CONTRACTOR and all subcontractors or other agents hereunder, shall, at their sole expense, maintain in full force and effect, the following insurance coverages and limits described herein, including endorsements.

1. Worker's Compensation Insurance covering all employees and providing benefits as required by Florida Statute, Chapter 440. CONTRACTOR further agrees to be responsible for employment, control and conduct of its employees and for any injury sustained by such employees in the course of their employment.

2. Liability Insurance.

(a) Naming the City of Pompano Beach as an additional insured as CITY's interests may appear, on General Liability Insurance only, relative to claims which arise from CONTRACTOR's negligent acts or omissions in connection with Contractor's performance under this Agreement.

(b) Such Liability insurance shall include the following checked types of insurance and indicated minimum policy limits.

Type of Insurance		Limits of Liability		
GENERAL LIABILITY:		Minimum $1,000,000 Per Occurrence and $2,000,000 Per Aggregate		
* Policy to be written on a claims incurred basis				
XX	comprehensive form	bodily injury and property damage		
XX	**premises - operations**	**bodily injury and property damage**		
__	**explosion & collapse hazard**			
__	underground hazard			
XX	products/completed operations hazard	bodily injury and property damage combined		
XX	contractual insurance	bodily injury and property damage combined		
XX	broad form property damage	bodily injury and property damage combined		
XX	independent contractors	personal injury		
XX	personal injury			
__	sexual abuse/molestation	Minimum $1,000,000 Per Occurrence and Aggregate		
__	liquor legal liability	Minimum $1,000,000 Per Occurrence and Aggregate		
AUTOMOBILE LIABILITY:		Minimum $1,000,000 Per Occurrence and Aggregate. Bodily injury (each person) bodily injury (each accident), Property damage, bodily injury and property damage combined.		
XX	comprehensive form			
XX	owned			
XX	hired			
XX	non-owned			
REAL & PERSONAL PROPERTY				
__	comprehensive form	Agent must show proof they have this coverage.		
EXCESS LIABILITY			Per Occurrence	Aggregate
__	other than umbrella	bodily injury and property damage combined	$1,000,000	$1,000,000
PROFESSIONAL LIABILITY			Per Occurrence	Aggregate
XX	* Policy to be written on a claims made basis		$1,000,000	$1,000,000

(c) If Professional Liability insurance is required, Contractor agrees the indemnification and hold harmless provisions set forth in the Agreement shall survive the

termination or expiration of the Agreement for a period of four (4) years unless terminated sooner by the applicable statute of limitations.

CYBER LIABILITY	Per Occurrence	Aggregate
__ * Policy to be written on a claims made basis	$1,000,000	$1,000,000

__ Network Security / Privacy Liability
__ Breach Response / Notification Sublimit (minimum limit of 50% of policy aggregate)
__ Technology Products E&O - $1,000,000 (only applicable for vendors supplying technology related services and or products)
__ Coverage shall be maintained in effect during the period of the Agreement and for not less than four (4) years after termination/ completion of the Agreement.

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3. Employer's Liability. If required by law, CONTRACTOR and all subcontractors shall, for the benefit of their employees, provide, carry, maintain and pay for Employer's Liability Insurance in the minimum amount of One Hundred Thousand Dollars ($100,000.00) per employee, Five Hundred Thousand Dollars ($500,000) per aggregate.

4. Policies: Whenever, under the provisions of this Agreement, insurance is required of the CONTRACTOR, the CONTRACTOR shall promptly provide the following:

(a) Certificates of Insurance evidencing the required coverage;

(b) Names and addresses of companies providing coverage;

(c) Effective and expiration dates of policies; and

(d) A provision in all policies affording CITY thirty (30) days written notice by a carrier of any cancellation or material change in any policy.

5. Insurance Cancellation or Modification. Should any of the required insurance policies be canceled before the expiration date, or modified or substantially modified, the issuing company shall provide thirty (30) days written notice to the CITY.

6. Waiver of Subrogation. CONTRACTOR hereby waives any and all right of subrogation against the CITY, its officers, employees and agents for each required policy. When required by the insurer, or should a policy condition not permit an insured to enter into a pre-loss agreement to waive subrogation without an endorsement, then CONTRACTOR shall notify the insurer and request the policy be endorsed with a Waiver of Transfer of Rights of Recovery Against Others, or its equivalent. This Waiver of Subrogation requirement shall not apply to any policy which includes a condition to the policy not specifically prohibiting such an endorsement, or voids coverage should CONTRACTOR enter into such an agreement on a pre-loss basis.

H. Selection/Evaluation Process

A Selection/Evaluation Committee will be appointed to select the most qualified firm(s). The Selection/Evaluation Committee will present their findings to the City Commission.

Proposals will be evaluated using the following criteria.

Line	Criteria	Point Range
1	Prior experience of the firm with projects of similar size and complexity: a. Number of similar projects b. Complexity of similar projects c. References from past projects performed by the firm d. Previous projects performed for the City (provide description) e. Litigation within the past 5 years arising out of firm's performance (list, describe outcome)	0-15
2	Qualifications of personnel including sub consultants: a. Organizational chart for project b. Number of technical staff c. Qualifications of technical staff: (1) Number of licensed staff (2) Education of staff (3) Experience of staff on similar projects	0-15
3	Proximity of the nearest office to the project location: a. Location b. Number of staff at the nearest office	0-15
4	Current and Projected Workload Rating is to reflect the workload (both current and projected) of the firm, staff assigned, and the percentage availability of the staff member assigned. Respondents which fail to note both existing and projected workload conditions and percentage of availability of staff assigned shall receive zero (0) points	0-15
5	Demonstrated Prior Ability to Complete Project on Time Respondents will be evaluated on information provided regarding the firm's experience in the successful completion and steadfast conformance to similar project schedules. Provide an example of successful approaches utilized to achieve a timely project completion. Respondents who demonstrate the ability to complete projects on time shall receive more points.	0-15
6	Demonstrated Prior Ability to Complete Project on Budget	0-15

	Proposers will be evaluated on their ability to adhere to initial design budgets. Examples provided should show a comparison between initial negotiated task costs and final completion costs. Respondents should explain in detail any budgetary overruns due to scope modifications. Respondents which fail to provide schedule and budget information as requested will receive zero (0) points.	
7	Is the firm a certified minority business enterprise as defined by the Florida Small and Minority Business Assistance Act of 1985? (Certification of any sub-contractors should also be included with the response.)	0-10

Additional 0-5% for Tier1/Tier2 Local Business will be calculated on combined scoring totals of each company.

NOTE:
Financial statements that are required as submittals to prequalify for a solicitation will be exempt from public disclosure; however, financial statements submitted to prequalify for a solicitation, and are not required by the City, may be subject to public disclosure.

Value of Work Previously Awarded to Firm (Tie-breaker) - In the event of a tie, the firm with the lowest value of work as a prime contractor on City of Pompano Beach projects within the last five years will receive the higher ranking, the firm with the next lowest value of work shall receive the next highest ranking, and so on. The analysis of past work will be based on the City's Purchase Order and payment records.

The Committee has the option to use the above criteria for the initial ranking to short-list Proposers and to use an ordinal ranking system to score short-listed Proposers following presentations (if deemed necessary) with a score of “1” assigned to the short-listed Proposer deemed most qualified by the Committee.

Each firm should submit documentation that evidences the firm’s capability to provide the services required for the Committee’s review for short listing purposes. After an initial review of the Proposals, the City may invite Proposers for an interview to discuss the proposal and meet firm representatives, particularly key personnel who would be assigned to the project. Should interviews be deemed necessary, it is understood that the City shall incur no costs as a result of this interview, nor bear any obligation in further consideration of the submittal.

When more than three responses are received, the committee shall furnish the City Commission (for their approval) a listing, in ranked order, of no fewer than three firms deemed to be the most highly qualified to perform the service. If three or less firms respond to the Solicitation, the list will contain the ranking of all responses.

The City Commission has the authority to (including, but not limited to); approve the recommendation; reject the recommendation and direct staff to re-advertise the solicitation; or, review the responses themselves and/or request oral presentations and determine a ranking order that may be the same or different from what was originally presented to the City Commission.

Value of Work Previously Awarded to Firm (Tie-breaker) - In the event of a tie, the firm with the lowest value of work as a prime contractor on City of Pompano Beach projects within the last five years will receive the higher ranking, the firm with the next lowest value of work shall receive the next highest ranking, and so on. The analysis of past work will be based on the City's Purchase Order and payment records.

I. Hold Harmless and Indemnification

Proposer covenants and agrees that it will indemnify and hold harmless the City and all of its officers, agents, and employees from any claim, loss, damage, cost, charge or expense arising out of any act, action, neglect or omission by the Proposer, whether direct or indirect, or whether to any person or property to which the City or said parties may be subject, except that neither the Proposer nor any of its subcontractors will be liable under this section for damages arising out of injury or damage to persons or property directly caused by or resulting from the sole negligence of the City or any of its officers, agents or employees.

J. Right to Audit

Contractor's records which shall include but not be limited to accounting records, written policies and procedures, computer records, disks and software, videos, photographs, subcontract files (including proposals of successful and unsuccessful bidders), originals estimates, estimating worksheets, correspondence, change order files (including documentation covering negotiated settlements), and any other supporting evidence necessary to substantiate charges related to this contract (all the foregoing hereinafter referred to as "records") shall be open to inspection and subject to audit and/or reproduction, during normal working hours, by Owner's agent or its authorized representative to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by the contractor or any of his payees pursuant to the execution of the contract. Such records subject to examination shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with this contract.

For the purpose of such audits, inspections, examinations and evaluations, the Owner's agent or authorized representative shall have access to said records from the effective date of this contract, for the duration of the Work, and until 5 years after the date of final payment by Owner to Consultant pursuant to this contract.

Owner's agent or its authorized representative shall have access to the Contractor's facilities, shall have access to all necessary records, and shall be provided adequate and appropriate work space, in order to conduct audits in compliance with this article. Owner's agent or its authorized representative shall give auditees reasonable advance notice of intended audits.

Contractor shall require all subcontractors, insurance agents, and material suppliers (payees) to comply with the provisions of this article by insertion of the requirements hereof in any written contract agreement. Failure to obtain such written contracts which include such provisions shall be reason to exclude some or all of the related payees' costs from amounts payable to the Contractor pursuant to this contract.

K. Retention of Records and Right to Access

The City of Pompano Beach is a public agency subject to Chapter 119, Florida Statutes. The Contractor shall comply with Florida's Public Records Law, as amended. Specifically, the Contractor shall:

1. Keep and maintain public records required by the City in order to perform the service;

2. Upon request from the City's custodian of public records, provide the City with a copy of requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes or as otherwise provided by law;

3. Ensure that public records that are exempt or that are confidential and exempt from public record requirements are not disclosed except as authorized by law;

4. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Contractor does not transfer the records to the City; and

5. Upon completion of the contract, transfer, at no cost to the City, all public records in possession of the Contractor, or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records in a format that is compatible with the information technology systems of the City.

L. Communications

No negotiations, decisions, or actions shall be initiated or executed by the firm as a result of any discussions with any City employee. Only those communications, which are in writing from the City, may be considered as a duly authorized expression on behalf of the City. In addition, only communications from firms that are signed and in writing will be recognized by the City as duly authorized expressions on behalf of firms.

M. No Discrimination

There shall be no discrimination as to race, sex, color, age, religion, or national origin in the operations conducted under any contract with the City.

N. Independent Contractor

The selected firm will conduct business as an independent contractor under the terms of this contract. Personnel services provided by the firm shall be by employees of the firm and subject to supervision by the firm, and not as officers, employees, or agents of the City. Personnel policies, tax responsibilities, social security and health insurance,

employee benefits, purchasing policies and other similar administrative procedures applicable to services rendered under this agreement shall be those of the firm.

O. Staff Assignment

The City of Pompano Beach reserves the right to approve or reject, for any reasons, Proposer's staff assigned to this project at any time. Background checks may be required.

P. Contract Terms

The contract resulting from this Solicitation shall include, but not be limited to the following terms:

The contract shall include as a minimum, the entirety of this Solicitation document, together with the successful Proposer's proposal. Contract shall be prepared by the City of Pompano Beach City Attorney.

If the City of Pompano Beach defends any claim, demand, cause of action, or lawsuit arising out of any act, action, negligent acts or negligent omissions, or willful misconduct of the contractor, its employees, agents or servants during the performance of the contract, whether directly or indirectly, contractor agrees to reimburse the City of Pompano Beach for all expenses, attorney's fees, and court costs incurred in defending such claim, cause of action or lawsuit.

Q. Waiver

It is agreed that no waiver or modification of the contract resulting from this Solicitation, or of any covenant, condition or limitation contained in it shall be valid unless it is in writing and duly executed by the party to be charged with it, and that no evidence of any waiver or modification shall be offered or received in evidence in any proceeding, arbitration, or litigation between the parties arising out of or affecting this contract, or the right or obligations of any party under it, unless such waiver or modification is in writing, duly executed as above. The parties agree that the provisions of this paragraph may not be waived except by a duly executed writing.

R. Survivorship Rights

This contract resulting from this Solicitation shall be binding on and inure to the benefit of the respective parties and their executors, administrators, heirs, personal representative, successors and assigns.

S. Termination

The contract resulting from this Solicitation may be terminated by the City of Pompano Beach without cause upon providing contractor with at least sixty (60) days prior written notice.

Should either party fail to perform any of its obligations under the contract resulting from this Solicitation for a period of thirty (30) days after receipt of written notice of such failure, the non-defaulting part will have the right to terminate the contract immediately upon delivery of written notice to the defaulting part of its election to do so. The foregoing rights of termination are in addition to any other rights and remedies that such party may have.

T. Manner of Performance

Proposer agrees to perform its duties and obligations under the contract resulting from this Solicitation in a professional manner and in accordance with all applicable local, federal and state laws, rules and regulations.

Proposer agrees that the services provided under the contract resulting from this Solicitation shall be provided by employees that are educated, trained and experienced, certified and licensed in all areas encompassed within their designated duties. Proposer agrees to furnish the City of Pompano Beach with all documentation, certification, authorization, license, permit, or registration currently required by applicable laws or rules and regulations. Proposer further certifies that it and its employees are now in and will maintain good standing with such governmental agencies and that it and its employees will keep all license, permits, registration, authorization or certification required by applicable laws or regulations in full force and effect during the term of this contract. Failure of Proposer to comply with this paragraph shall constitute a material breach of contract.

U. Acceptance Period

Proposals submitted in response to this Solicitation must be valid for a period no less than ninety (90) days from the closing date of this solicitation.

V. Conditions and Provisions

The completed proposal (together with all required attachments) must be submitted electronically to City on or before the time and date stated herein. All Proposers, by electronic submission of a proposal, shall agree to comply with all of the conditions, requirements and instructions of this solicitation as stated or implied herein. All proposals and supporting materials submitted will become the property of the City.

Proposer’s response shall not contain any alteration to the document posted other than entering data in spaces provided or including attachments as necessary. By submission of a response, Proposer affirms that a complete set of bid documents was obtained from the eBid System or from the Purchasing Division only and no alteration of any kind has been made to the solicitation. Exceptions or deviations to this proposal may not be added after the submittal date.

All Proposers are required to provide all information requested in this solicitation. Failure to do so may result in disqualification of the proposal.

The City reserves the right to postpone or cancel this solicitation, or reject all proposals, if in its sole discretion it deems it to be in the best interest of the City to do so.

The City reserves the right to waive any technical or formal errors or omissions and to reject all proposals, or to award contract for the items herein, in part or whole, if it is determined to be in the best interests of the City to do so.

The City shall not be liable for any costs incurred by the Proposer in the preparation of proposals or for any work performed in connection therein.

W. Standard Provisions

1. Governing Law

Any agreement resulting from this Solicitation shall be governed by the laws of the State of Florida, and the venue for any legal action relating to such agreement will be in Broward County, Florida.

2. Licenses

In order to perform public work, the successful Proposer shall:
Be licensed to do business in Florida, if an entity, and hold or obtain such Contractor' and Business Licenses if required by State Statutes or local ordinances.

3. Conflict Of Interest

For purposes of determining any possible conflict of interest, each Proposer must disclose if any Elected Official, Appointed Official, or City Employee is also an owner, corporate officer, or an employee of the firm. If any Elected Official, Appointed Official, or City Employee is an owner, corporate officer, or an employee, the Proposer must file a statement with the Broward County Supervisor of Elections pursuant to §112.313, Florida Statutes.

4. Drug Free Workplace

The selected firm(s) will be required to verify they will operate a "Drug Free Workplace" as set forth in Florida Statute, 287.087.

5. Public Entity Crimes

A person or affiliate who has been placed on the convicted vendor list following a conviction for 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 of real property to public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Florida Statute, Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

6. Patent Fees, Royalties, And Licenses

If the selected Proposer requires or desires to use any design, trademark, device, material or process covered by letters of patent or copyright, the selected Proposer and his surety shall indemnify and hold harmless the City from any and all claims for infringement by reason of the use of any such patented design, device, trademark, copyright, material or process in connection with the work agreed to be performed and shall indemnify the City from any cost, expense, royalty or damage

which the City may be obligated to pay by reason of any infringement at any time during or after completion of the work.

7. Permits

The selected Proposer shall be responsible for obtaining all permits, licenses, certifications, etc., required by federal, state, county, and municipal laws, regulations, codes, and ordinances for the performance of the work required in these specifications and to conform to the requirements of said legislation.

8. Familiarity With Laws

It is assumed the selected firm(s) will be familiar with all federal, state and local laws, ordinances, rules and regulations that may affect its services pursuant to this Solicitation. Ignorance on the part of the firm will in no way relieve the firm from responsibility.

9. Withdrawal Of Proposals

A firm may withdraw its proposal without prejudice no later than the advertised deadline for submission of proposals by written communication to the General Services Department, 1190 N.E. 3rd Avenue, Building C, Pompano Beach, Florida 33060.

10. Composition Of Project Team

Firms are required to commit that the principals and personnel named in the proposal will perform the services throughout the contractual term unless otherwise provided for by way of a negotiated contract or written amendment to same executed by both parties. No diversion or substitution of principals or personnel will be allowed unless a written request that sets forth the qualifications and experience of the proposed replacement(s) is submitted to and approved by the City in writing.

11. Invoicing/Payment

All invoices should be sent to City of Pompano Beach, Accounts Payable, P.O. Drawer 1300, Pompano Beach, Florida, 33061. In accordance with Florida Statutes, Chapter 218, payment will be made within 45 days after receipt of a proper invoice.

12. Public Records

a. The City of Pompano Beach is a public agency subject to Chapter 119, Florida Statutes. The Contractor shall comply with Florida's Public Records Law, as amended. Specifically, the Contractor shall:

   i. Keep and maintain public records required by the City in order to perform the service;

ii. Upon request from the City's custodian of public records, provide the City with a copy of requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes or as otherwise provided by law;

iii. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Contractor does not transfer the records to the City; and

iv. Upon completion of the contract, transfer, at no cost to the City, all public records in possession of the Contractor, or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records in a format that is compatible with the information technology systems of the City.

b. Failure of the Contractor to provide the above described public records to the City within a reasonable time may subject Contractor to penalties under 119.10, Florida Statutes, as amended.

PUBLIC RECORDS CUSTODIAN

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

CITY CLERK
100 W. Atlantic Blvd., Suite 253
Pompano Beach, Florida 33060
(954) 786-4611
RecordsCustodian@copbfl.com

X. Questions and Communication

All questions regarding the Solicitation are to be submitted using the Questions feature in the eBid System. Questions must be received at least seven (7) calendar days before the scheduled solicitation opening. Oral and other interpretations or clarifications will be without legal effect. Addenda will be posted to the solicitation in the eBid System, and it

is the Proposer's responsibility to obtain all addenda before submitting a response to the solicitation.

Y. Addenda

The issuance of a written addendum or posting of an answer in response to a question submitted using the Questions feature in the eBid System are the only official methods whereby interpretation, clarification, or additional information can be given. If any addenda are issued to this solicitation the addendum will be issued via the eBid System. It shall be the responsibility of each Proposer, prior to submitting their response, to contact the City Purchasing Office at (954) 786-4098 to determine if addenda were issued and to make such addenda a part of their proposal. Addenda will be posted to the solicitation in the eBid System.

Z. Contractor Performance Report

The City will utilize the Contractor Performance Report to monitor and record the successful proposer’s performance for the work specified by the contract. The Contractor Performance Report has been included as an exhibit to this solicitation.

COMPLETE THE PROPOSER INFORMATION FORM ON THE ATTACHMENTS TAB IN THE EBID SYSTEM. PROPOSERS ARE TO COMPLETE THE FORM IN ITS ENTIRITY AND INCLUDE THE COMPLETED FORM IN YOUR PROPOSAL THAT MUST BE UPLOADED TO THE RESPONSE ATTACHMENTS TAB IN THE EBID SYSTEM.

PROPOSER INFORMATION PAGE

_____, _____
(number) (Title)

To: The City of Pompano Beach, Florida

The below named company hereby agrees to furnish the proposed services under the terms stated subject to all instructions, terms, conditions, specifications, addenda, legal advertisement, and conditions contained in the solicitation. I have read the solicitation and all attachments, including the specifications, and fully understand what is required. By submitting this proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this proposal.

Proposal submitted by:

Name (printed) _____ Title _____

Company (Legal Registered) _____

Federal Tax Identification Number _____

Address _____

City/State/Zip _____

Telephone No. _____ Fax No. _____

Email Address _____

COMPLETE THE PROJECT TEAM FORM ON THE ATTACHMENTS TAB IN THE EBID SYSTEM. PROPOSERS ARE TO COMPLETE FORM IN ITS ENTIRITY AND INCLUDE THE FORM IN YOUR PROPOSAL THAT MUST BE UPLOADED TO THE RESPONSE ATTACHMENTS TAB IN THE EBID SYSTEM.

PROJECT TEAM

SOLICITATION NUMBER _____

Federal I.D.#_____

PRIME

Role	Name of Individual Assigned to Project	Number of Years Experience	Education, Degrees
Principal-In-Charge			
Project Manager			
Asst. Project Manager			
Other Key Member			
Other Key Member			

SUB-CONSULTANT

Role	Company Name and Address of Office Handling This Project	Name of Individual Assigned to the Project
Surveying		
Landscaping		
Engineering		
Other Key Member		
Other Key Member		
Other Key Member		

(use attachments if necessary)

COMPLETE THE PROPOSER INFORMATION FORM ON THE ATTACHMENTS TAB IN THE EBID SYSTEM. PROPOSERS ARE TO COMPLETE THE FORM IN ITS ENTIRITY AND INCLUDE THE COMPLETED FORM IN YOUR PROPOSAL THAT MUST BE UPLOADED TO THE RESPONSE ATTACHMENTS TAB IN THE EBID SYSTEM.

VENDOR CERTIFICATION REGARDING SCRUTINIZED COMPANIES LISTS

Respondent Vendor Name: _____

Vendor FEIN: _____

Section 287.135, Florida Statutes, prohibits agencies from contracting with companies, for goods or services over $1,000,000, that are on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List. Further, Section 215.4725, Florida Statutes, prohibits agencies from contracting (at any dollar amount) with companies on the Scrutinized Companies that Boycott Israel List, or with companies that are engaged in a boycott of Israel. As the person authorized to sign electronically on behalf of Respondent, I hereby certify by selecting the box below that the company responding to this solicitation is not listed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List. I also certify that the company responding to this solicitation is not participating in a boycott of Israel, and is not engaged in business operations in Syria or Cuba. I understand that pursuant to sections 287.135 and 215.4725, Florida Statutes, the submission of a false certification may subject company to civil penalties, attorney's fees, and/or costs.

I Certify

Exhibit – Contractor Performance Report

City of Pompano Beach, Purchasing Division
1190 N.E. 3rd Avenue, Building C
Pompano Beach, Florida, 33060

CITY OF POMPANO BEACH
CONTRACTOR PERFORMANCE REPORT

1. Report Period: from _____ to _____

2. Contract Period: from _____ to _____

3. Bid# & or P.O.#: _____

4. Contractor Name: _____

5. City Department: _____

6. Project Manager: _____

7. Scope of Work (Service Deliverables): _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Exhibit – Contractor Performance Report

CATEGORY	RATING	COMMENTS
1. Quality Assurance/Quality Control - Product/Services of high quality - Proper oversight - Communication	Poor =1 Satisfactory =2 Excellent =3	
2. Record Keeping -Accurate record keeping -Proper invoicing -Testing results complete	Poor =1 Satisfactory =2 Excellent =3	
3. Close-Out Activities - Restoration/Cleanup - Deliverables met - Punch list items addressed	Poor =1 Satisfactory =2 Excellent =3	
4. Customer Service - City Personnel and Residents - Response time - Communication	Poor =1 Satisfactory =2 Excellent =3	
5. Cost Control - Monitoring subcontractors - Change-orders - Meeting budget	Poor =1 Satisfactory =2 Excellent =3	
6. Construction Schedule - Adherence to schedule - Time-extensions - Efficient use of resources	Poor =1 Satisfactory =2 Excellent =3	
SCORE	_____	**ADD ABOVE RATINGS/DIVIDE TOTAL BY NUMBER OF CATEGORIES BEING RATED**

RATINGS

Poor Performance (1.0 – 1.59)*: Marginally responsive, effective and/or efficient; delays require significant adjustments to programs; key employees marginally capable; customers somewhat satisfied.*

Satisfactory Performance (1.6 – 2.59)*: Generally responsive, effective and/or efficient; delays are excusable and/or results in minor program adjustments; employees are capable and satisfactorily providing service without intervention; customers indicate satisfaction.*

Excellent Performance (2.6 – 3.0): *Immediately responsive; highly efficient and/or effective; no delays; key employees are experts and require minimal direction; customers expectations are exceeded.*

Would you select/recommend this contractor again? _____ Yes _____ No

Please attach any supporting documents to this report to substantiate the ratings that have been provided.

_____	_____	_____
Ratings completed by (print name)	Ratings completed by signature	Date
_____	_____	_____
Department Head (print name)	Department Head Signature	Date
_____	_____	_____
Vendor Representative (print name)	Contractor Representative Signature	Date

Comments, corrective actions etc., use additional page if necessary:

_____

_____

_____

_____

_____

_____

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_____

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_____

City of Pompano Beach Florida

Local Business Subcontractor Utilization Report

Project Name (1)		Contract Number and Work Order Number (if applicable) (2)	
Report Number (3)	Reporting Period (4) to	Local Business Contract Goal (5)	Estimated Contract Completion Date (6)
Contractor Name (7)		Contractor Telephone Number (8) ( ) -	Contractor Email Address (9)
Contractor Street Address (10)	Project Manager Name (11)	Project Manager Telephone Number (12) ( ) -	Project Manager Email Address (13)

Local Business Payment Report

Federal Identification Number (14)	**Local Subcontractor Business Name** (15)	**Description of Work** (16)	**Project Amount** (17)	**Amount Paid this Reporting Period** (18)	**Invoice Number** (19)	**Total Paid to Date** (20)
				Total Paid to Date for All Local Business Subcontractors (21) **$**		0.00

I certify that the above information is true to the best of my knowledge.

Contractor Name – Authorized Personnel (print) (22)	Contractor Name – Authorized Personnel (sign) (23)	Title (24)	Date (25)

Local Business Subcontractor Utilization Report Instructions

Box (1) **Project Name –** Enter the entire name of the project.

Box (2) **Contract Number (work order) –** Enter the contract number and the work order number, if applicable (i.e., 4600001234, and if work order contract include work order number – 4600000568 WO 01).

Box (3) **Report Number -** Enter the Local Business Subcontractor Utilization Report number. Reports must be in a numerical series (i.e., 1, 2, 3).

Box (4) **Reporting Period -** Enter the beginning and end dates this report covers (i.e., 10/01/2016 – 11/01/2016).

Box (5) **Local Contract Goal -** Enter the Local Contract Goal percentage on entire contract.

Box (6) **Contract Completion Date -** Enter the expiration date of the contract, (not work the order).

Box (7) **Contractor Name -** Enter the complete legal business name of the Prime Contractor.

Box (8) **Contractor Telephone Number -** Enter the telephone number of the Prime Contractor.

Box (9) **Contractor Email Address -** Enter the email address of the Prime Contractor.

Box (10) **Contractor Street Address –** Enter the mailing address of the Prime Contractor.

Box (11) **Project Manager Name -** Enter the name of the Project Manager for the Prime Contractor on the project.

Box (12) **Project Manager Telephone Number –** Enter the direct telephone number of the Prime Contractor’s Project Manager.

Box (13) **Project Manager Email Address –** Enter the email address of the Prime Contractor’s Project Manager.

Box (14) **Federal Identification Number –** Enter the federal identification number of the Local Subcontractor(s).

Box (15) **Local Subcontractor Business Name** – Enter the complete legal business name of the Local Subcontractor(s).

Box (16) **Description of Work –** Enter the type of work being performed by the Local Subcontractor(s) (i.e., electrical services).

Box (17) **Project Amount –** Enter the dollar amount allocated to the Local Subcontractor(s) for the entire project (i.e., amount in the subcontract agreement).

Box (18) **Amount Paid this Reporting Period** – Enter the total amount paid to the Local Subcontractor(s) during the reporting period.

Box (19) **Invoice Number** – Enter the Local Subcontractor's invoice number related to the payment reported this period.

Box (20) **Total Paid to Date** – Enter the total amount paid to the Local Subcontractor(s) to date.

Box (21) **Total Paid to Date for All Local Subcontractor(s)** – Enter the total dollar amount paid to date to all Local Subcontractors listed on the report.

Box (22) **Contractor Name Authorized Personnel (print)** – Print the name of the employee that is authorized to execute the Local Subcontractor Utilization Report.

Box (23) **Contractor Name Authorized Personnel (sign)** – Signature of authorized employee to execute the Local Subcontractor Utilization Report.

Box (24) **Title –** Enter the title of authorized employee completing the Local Subcontractor Utilization Report.

Box (25) **Date –** Enter the date of submission of the Local Subcontractor Utilization Report to the City.

REQUESTED INFORMATION BELOW IS ON LOCAL BUSINESS PROGRAM FORM ON THE BID ATTACHMENTS TAB. BIDDERS ARE TO COMPLETE FORM IN ITS ENTIRITY AND INCLUDE COMPLETED FORM IN YOUR PROPOSAL THAT MUST BE UPLOADED TO THE RESPONSE ATTACHMENTS TAB IN THE EBID SYSTEM.

CITY OF POMPANO BEACH, FLORIDA
LOCAL BUSINESS PARTICIPATION FORM

Solicitation # & Title: _____ Prime Contractor's Name: _____

Name of Firm, Address	Contact Person, Telephone Number	Type of Work to be Performed/Materials to be Purchased	Contract Amount

LOCAL BUSINESS EXHIBIT "A

LOCAL BUSINESS EXHIBIT "B"
LOCAL BUSINESS
LETTER OF INTENT TO PERFORM AS A LOCAL SUBCONTRACTOR

Solicitation Number_____

TO: _____
(Name of Prime or General Bidder)

The undersigned City of Pompano Beach business intends to perform subcontracting work in connection with the above contract as (check below)

_____ an individual _____ a corporation

_____ a partnership _____ a joint venture

The undersigned is prepared to perform the following work in connection with the above Contract, as hereafter described in detail:

_____

_____

_____

_____

at the following price: _____

_____ _____
(Date) (Print Name of Local Business Contractor)

_____
(Street Address)

_____
(City, State Zip Code)

BY: _____
(Signature)

IMPORTANT NOTE: Signatures on this form MUST be by an authorized employee of Subcontractor and must be uploaded to the Response Attachment Tab

LOCAL BUSINESS EXHIBIT "B"

LOCAL BUSINESS EXHIBIT "C"
LOCAL BUSINESS UNAVAILABILITY FORM

Solicitation #_____

I,_____
(Name and Title)

of_____, certify that on the _____day of

_____, _____, I invited the following LOCAL BUSINESS(s) to bid work
(Month) (Year)

items to be performed in the City of Pompano Beach:

Business Name, Address	Work Items Sought	Form of Bid Sought (i.e., Unit Price, Materials/Labor, Labor Only, etc.)

Said Local Businesses:

___ Did not bid in response to the invitation

___ Submitted a bid which was not the low responsible bid

___ Other:_____

Name and Title: _____

Date: _____

Note: Attach additional documents as available.

LOCAL BUSINESS EXHIBIT "C"

LOCAL BUSINESS EXHIBIT “D”
GOOD FAITH EFFORT REPORT LOCAL BUSINESS PARTICIPATION

Solicitation #_____

1. What portions of the contract have you identified as Local Business opportunities?

_____

_____

_____

_____

2. Did you provide adequate information to identified Local Businesses? Please comment on how you provided this information.

_____

_____

_____

3. Did you send written notices to Local Businesses?

____ Yes ____ No

If yes, please include copy of the notice and the list of individuals who were forwarded copies of the notices.

4. Did you advertise in local publications?

____ Yes ____ No

If yes, please attach copies of the ads, including name and dates of publication.

5. What type of efforts did you make to assist Local Businesses in contracting with you ?

_____

_____

7. List the Local Businesses you will utilize and subcontract amount.

_____ $_____

_____ $_____

_____ $_____

8. Other comments: _____

_____

_____

_____

_____

LOCAL BUSINESS EXHIBIT “D”

Prepared for the
CITY OF POMPANO BEACH

Continuing Contract for

CIVIL ENGINEERING SERVICES FOR VARIOUS CITY PROJECTS

E-20-20

Request for Letters of Interest | JULY 2020

carollo
Engineers...Working Wonders With Water®

Project Name

Continuing Contract for Civil Engineering Services for Various City Projects

Project Number

E 20-20

Name of the Proposer's Firm

Carollo Engineers, Inc.

Address

2728 North University Drive, Building 2700
Coral Springs, Florida 33065

Phone Number

954.837.0030

Name of Contact Person

Liz Fujikawa, PE, LEED AP, BCEE
Principal-in-Charge

Date

July 30, 2020

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carollo
Engineers...Working Wonders With Water®

2728 North University Drive, Building 2700, Coral Springs, Florida 33065
P. 954.837.0030 F. 954.837.0035

July 30, 2020

City of Pompano Beach
Purchasing Office
1190 N.E. 3rd Avenue, Building C (Front)
Pompano Beach, FL 33060

Subject: Request for Letters of Interest E-20-20 Continuing Contract for Civil Engineering Services for Various City Projects

Dear Selection Committee Members:

Carollo Engineers appreciates the opportunity to submit our Statement of Qualifications (SOQ) for the City of Pompano Beach's **Continuing Contract for Civil Engineering Services for Various City Projects.** We are fully committed to performing the proposed services.

Carollo first began working for the City in 2012. Since then, we have completed a wide array of projects, starting with an Electrical Master Plan for the treatment plants and several other projects to date, such as an evaluation of lime softening versus nanofiltration; Owner's Representative services for the installation of VFDs; a Water Master Plan that included hydraulic modeling of the distribution system; and more recently, the construction phase of your Transfer Pump Station improvements which is nearly finished.

We hope you agree that these projects brought innovative ideas and the right solutions – mindful of your budget constraints and respectful of your preferences. As we reflect on the projects, we truly believe that we have worked in partnership, and best of all, we have enjoyed working with City staff.

We understand the need to cost effectively address the aging of the various components of the City's horizontal infrastructure that must reliably provide potable, sewer, stormwater and reclaimed water service. We are doing just that for many local communities, including Margate, Broward County, Sunrise, Delray Beach, and Boynton Beach, and look forward to providing those services to the City.
Finally, we hope that as you review this Statement of Qualifications, you agree that Carollo has proven our ability to *creatively identify and cost effectively implement the best solutions with exceptional client service.* We look forward to working with your staff on your Civil Engineering service needs. As requested, I am authorized to make representations on behalf of Carollo. You can reach me at: 954.837.0030 or efujikawa@carollo.com.

Very Truly Yours,

CAROLLO ENGINEERS, INC.

Elizabeth Fujikawa, PE, LEED AP, BCEE
Vice President/Principal-in-Charge

We acknowledge receiving Addendum #1.

• SECTION 1: TECHNICAL APPROACH

Technical Approach

Our proposed approach builds on the knowledge we have gathered delivering City projects for the past nine years – we believe we have an established reputation for cost-saving innovation and excellent client service.

The majority of our south Florida projects are conducted through continuing engineering services assignments. We've learned that understanding specific goals and needs is critical to the success of each task order.

As examples, some assignments are just simply to design a replacement of what has failed or is about to fail, where that component is the right size, material, and configuration. Other projects are viewed as opportunities, where improvements are desired to gain energy savings, improve operational performance, provide for easier maintenance, provide capacity upgrades, etc. In all of our projects, meeting budget is a given, and the schedule requirements may range from a normal pace to a fast track assessment and implementation.

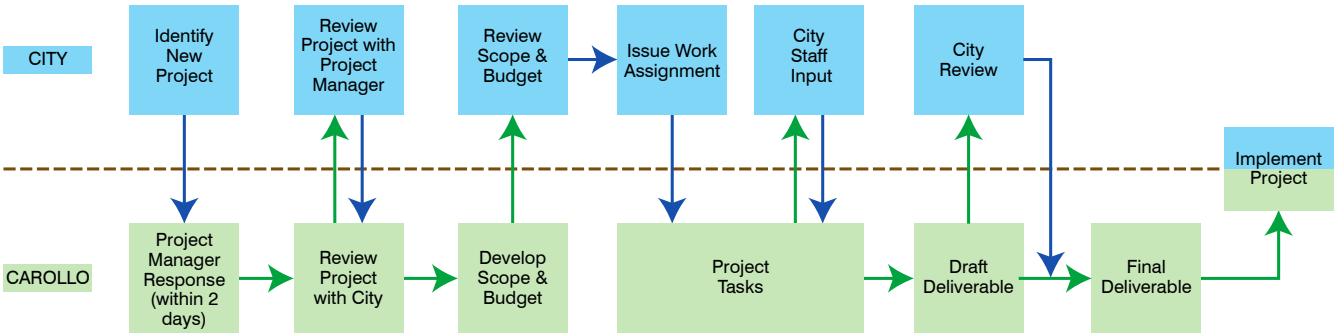
Carollo will use the following approach to develop a scope of work and then deliver each task order:

Engage in an open conversation with the City, where we will listen and discuss the City's needs. Despite the fact that we have an extensive knowledge of the City's infrastructure from past projects, it is critical for our team to openly listen to City staff.

Understand the project goals, budget, and timeline based on our meetings, research, and communication with the City. We will look to understand how the project fits into the City's overall plan, so we can achieve the project goals with the big picture in mind.

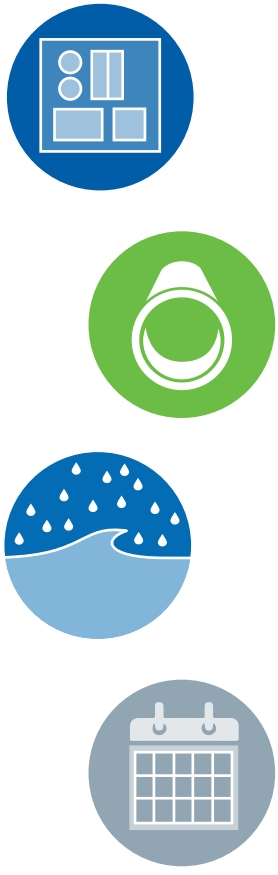
Collaborate with the City to develop a scope of work which clearly states the project goals, tasks, budget, and schedule. As part of this process, we will work with the City to identify key City and Carollo staff for the project.

Complete the project. Carollo commits to assigning the right staff to the project, and maintaining clear and open communication throughout. While we "complete" individual tasks or projects, as your consultant, our work is never complete. We continually aim to work as one team, be forward thinking, and always hold the City's best interest. A key element of Carollo's ability to execute both routine and specialized projects is our ability to assemble a team of local staff supported by national expertise, as needed to meet the needs of your project.



Carollo understands the need for integrating your team with ours. We have multiple opportunities for that interaction throughout our project approach.

We are aware that the task orders will cover a wide variety of the City's needs. The following sections identify some preliminary ideas for our technical approaches to various areas of work from planning, asset condition assessments, optimization studies, and detailed design. And finally, we address how we manage time schedules and control costs on our projects.



OUR SECTION CONTENTS:

- Approach to Master Planning: Assistance with Managing Utility Capital Planning (UMOP).
- Approach to Reuse Distribution System Assessment Projects.
- Approach to Wastewater Collection Assessment Projects.
- Approach to Potable Water Distribution Assessment Projects.
- Approach to Pipeline Design Projects.
- Approach to Stormwater Management Projects.
- Maintaining Time Schedules and Cost Controls.

APPROACH TO MASTER PLANNING: ASSISTANCE WITH MANAGING UTILITY CAPITAL PLANNING

As an alternative to typical Master Plans becoming outdated the day after delivery, we developed an electronic Master Plan that serves as a "smart data dashboard" to visualize an array of data, enabling dynamic rate planning, decision making for capital improvements, and asset management. Interactive dashboards created in data visualization software provide "storyboards"that can be used for Commission presentations and Capital Improvement Plans.

These dashboards allow unprecedented levels of connectivity between data sources and utility management tools, such as GIS, CMMS, asset management databases, financial models, hydraulic models, and risk management factors – providing management with "dials and controls" to project impact of projects on rates and charges, allowing users to adjust timing and scope of capital projects to achieve financial goals (reserve balances, cash flows, debt coverage ratios, and other key financial metrics). Example features include:

- A geographic map of every major capital project, including capital costs and drivers (e.g. growth, R&R, regulatory, etc.).
- A Scenario Manager to adjust to changing factors, such as population growth, treatment for regulatory requirements, and R&R needs.
- A Financial Module to allow analyses of "what-ifs," including "slider controls" allowing users to adjust project timing and view rate impact.

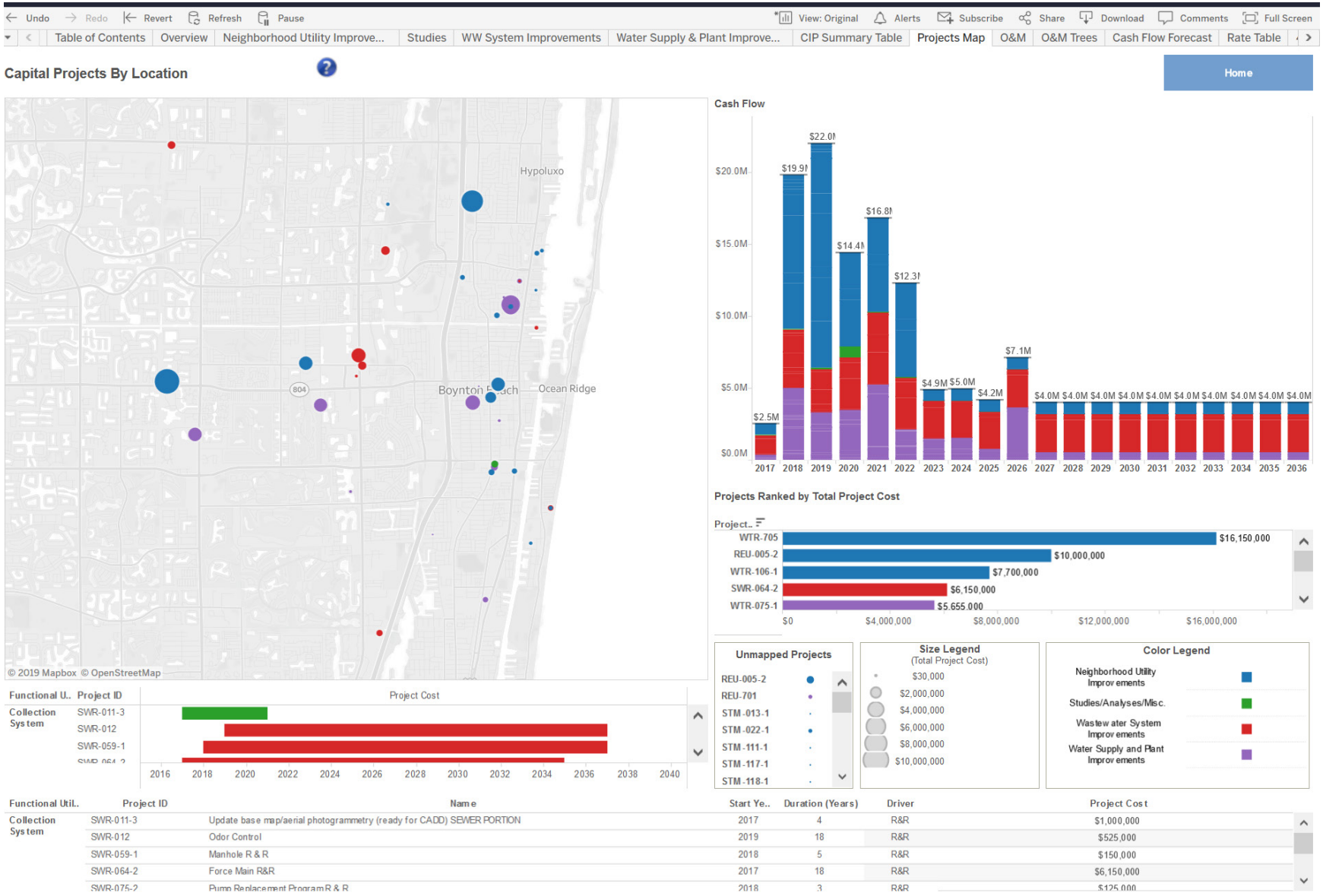
An example snapshot from the Dashboard is shown on the following page.

APPROACH TO REUSE DISTRIBUTION SYSTEM ASSESSMENT PROJECTS

Reuse distribution systems present a variety of challenges, particularly when systems become stressed from peak demands occurring at the same time. In Florida, reuse system piping is typically in relatively good condition versus collection system piping. Most of our assignments are usually centered around system expansion needs or solving operational issues, such as low pressure areas. Typical tools that we anticipate using in your task orders are discussed on the following pages.

USE OF MODELS TO ASSESS DESIRED IMPROVEMENTS

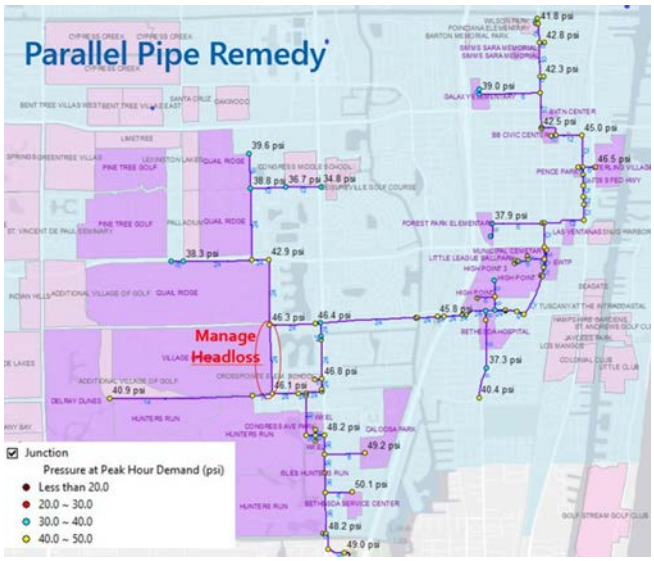
Reuse distribution system networks can be challenging in operation because peak demands usually occur over the same, relatively short time period. To address this, we use models to determine where areas of low pressure are occurring and how it can best be solved. In a recent case, we were able to eliminate a client's perceived need for a reclaim storage tank and booster pump station through the installation of a short run of parallel pipe to alleviate an area of high headloss, combined with a slight increase of pressure at the wastewater treatment plant's reclaim pump station.



Our dashboard approach to Master Planning allows on-line scenario and "what if" evaluations on financials, such as project start dates.

Key features of our approach to reuse assessments include:

- Check Actual Field Conditions
  - » Pressure loggers at key locations help establish existing system head conditions. SCADA data, both historical and corresponding to the dates of the pressure test will be requested. Pressure loggers have also helped identify areas of abnormally high pressure loss, due to stuck air release valves, or sometimes, missing air release valves.
- Calibrate and Run Simulations
  - » A calibration day is selected from SCADA flow data and field test pressure data. Parameters are manipulated until the flow and pressure results of the model match.
  - » Establish a present and a future scenario. Run present model scenarios to evaluate the existing system under a range of diurnal demands. Run future scenarios with anticipated additional flows, under different flow conditions.
- Analyze, Analyze, Analyze
  - » Use the model to find and evaluate alternatives and ultimately, to find creative ways to solve issues and save capital costs
- Consider Demand Management
  - » Demand management is also a solution to be considered as an alternative to installing additional pipe. Of course, buy-in of the users is key, but sometimes a simple shift of two hours makes a significant impact on system pressures.



For the City of Boynton Beach, our creativity allowed the elimination of a planned booster pump station and storage tank for their reclaim system expansion.

APPROACH TO WASTEWATER COLLECTION ASSESSMENT PROJECTS

We understand that the City is essentially built out with the exception of some areas of redevelopment, but this does not necessarily mean conditions in the collection system are static. Development is being proposed for the Casino Live property. There is also the ongoing attention required to replace pipe as it reaches the end of its useful life.

Wastewater collection systems typically present a variety of challenges in operations and maintenance. Collection system needs are typically segmented into lift stations, force mains/air release valves, and gravity sewers/manholes. Some assignments focus on the design of the replacement of existing mains, based on condition or need, where that component is the right size, material, and configuration. Other projects are viewed as opportunities, where improvements can be made to alleviate restrictions in the system. Modeling is often used to evaluate alternatives on the best approach for system improvements.

USE OF MODELS TO ASSESS DESIRED IMPROVEMENTS

Wastewater networks, in particular force main networks, can be challenging to operate, especially given the varying flows and pressures that occur in the system. To best address this, we routinely use calibrated models that perform extended period simulations (EPS) to assess pipe sizes, bottlenecks, and lift station pump sizing and operations. The modeling results are often beneficial because they evaluate the actual benefits and impacts of identified projects prior to implementation.

Key steps to our modeling include:

- Check actual field conditions
  - » Pressure loggers at key locations help establish existing system head conditions. SCADA data, both historical and corresponding to the dates of the pressure test will be requested. In cases where SCADA data is not available, limited flow monitoring is included in the field test.
- Include pump station data and flows
  - » Utilize lift station physical and operational data to input into the model. Establish pump curves into the model for all applicable pumps.
  - » Utilize flow allocation results to apply flow to each basin, usually at its most downstream lift station. Apply diurnal flow patterns.
- Calibrate and run simulations
  - » A calibration day is selected from SCADA flow data and field test pressure data. Parameters are manipulated until the flow and pressure results of the model match. For extended period simulation models to be used to simulate daily pumping operations, calibration will be refined at hourly intervals.
  - » Establish a present and a future scenario. Run present model scenariosto evaluate the existing system under a range of diurnal flows. Run future scenarios with anticipated additional flows, under different flow conditions.

INNOVATION:
Carollo is an industry leader with its focus for longevity and low maintenance designs. Material selection is critical to making sure the new lift station "outlasts" the previous station. This can often be done with minimal cost impact upfront and reducing long-term maintenance efforts. Selection of non-corrosive materials, such as stainless or HDPE piping improved coating systems, or newer products, such as polymer-based concrete or HDPE wet-wells/manholes, can extend the life of the system and reduce future maintenance costs.

LIFT STATION REHABILITATION AND OPTIMIZATION PROJECTS

As the City's system continues to age, lift station rehabilitation projects will continue to be needed. Similar to a pipeline, the common challenge in lift station rehabilitation or replacement is maintaining system operation while minimizing local impact. During any rehabilitation project, we suggest assessing each lift station's design points compared to the historical SCADA data and the hydraulic model. Assessment should include current safety, layout/access, and security criteria. Future additional improvements in the lift station system could bring energy efficiency savings.

We believe there is significant opportunity to implement a "neural network" to allow sequencing of the stations via the SCADA system. This can improve pump performance, reduce energy costs in the system, and potentially reduce the peak flows delivered to Broward's wastewater treatment plant.

LIFT STATION DESIGNS

Hydraulic Institute (HI) Standards, Ten-State Standards, and Florida Department of Environmental Protection (FDEP) guidelines are commonly followed. However, some situations present challenges in meeting industry standards. As an example, available space for larger pump station wetwells is often limited, restricting the number of pumps that can be installed. In other instances, non-typical inlet and outlet configurations present challenges. To fully address these limitations, we apply computational fluid dynamic analyses to model alternative wetwell configurations, and the results give us feedback on our proposed designs. These often can result in cost savings, in particular where field or site conditions limit space. The ability to work within an existing structure, such as a wetwell, may result in substantial cost savings during construction.

EXAMPLE CASE STUDY APPROACH: MASTER LIFT STATION MODELING STUDY

Our approach to assessing a master lift station upgrade project provides for the strategic management of near- and long-term needs for the overall collection system, with the goal that solving one problem doesn't result in the cause of another. We start by understanding the project drivers and then work through a comprehensive solution to that need.

In this case study, our approach ultimately led to recommendations that allowed informed decision making. This approach included the following tasks:

Task 1 - Bypass Function Definition, Feasibility Criteria, and Alternative Constraints: Many utilities experience challenges in the operation of Master Lift Stations (MLSs) due to increasing peak flows (because of inflow and infiltration) or daily loads (because of increasing growth). We define project criteria and constraints, which may include growth, planned rehabilitation programs, construction constraints, and budget/cash flow needs. We routinely evaluate similar situations where a bypass of a MLS is contemplated, the figure below shows some common questions that need to be answered.

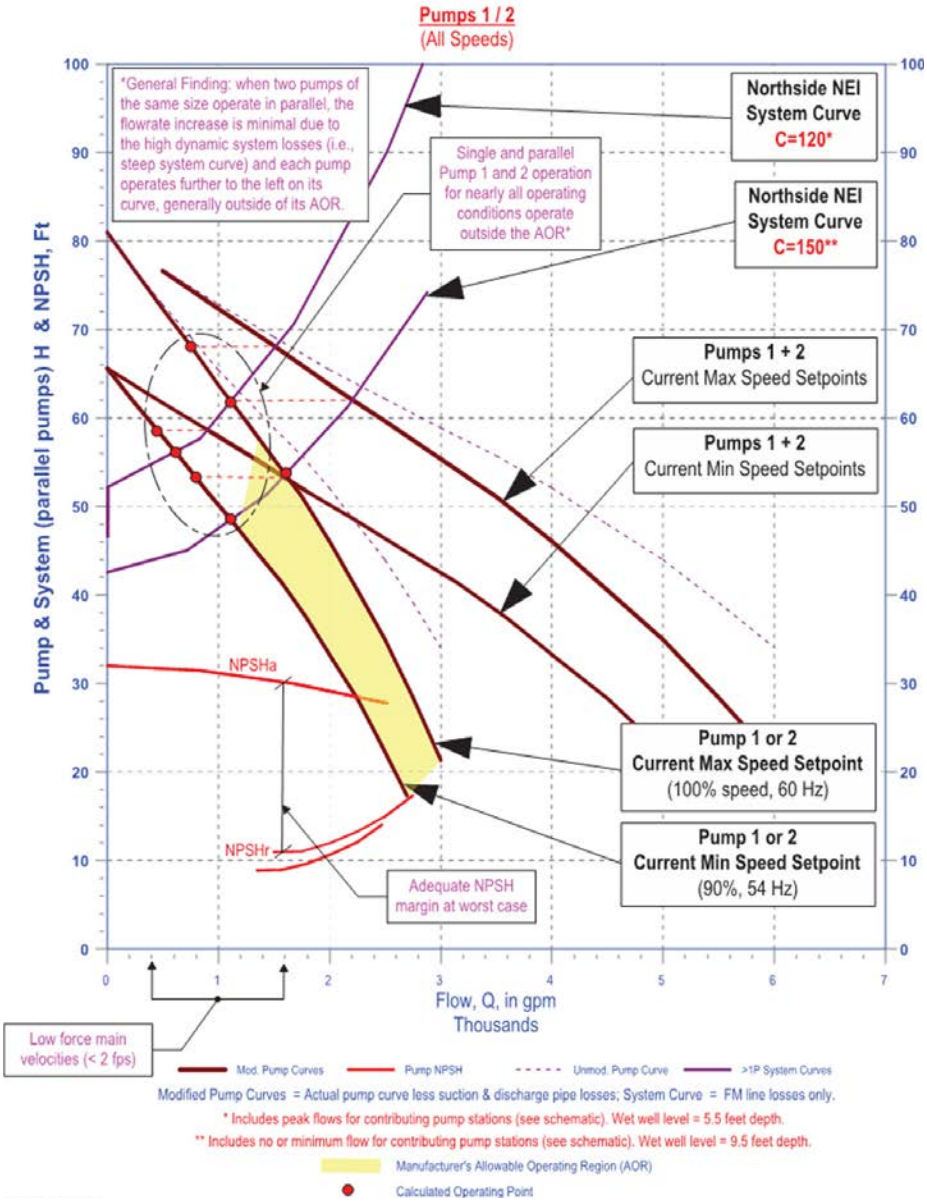
QUESTIONS FOR BYPASS STUDIES:

- Upstream Diversion—can low cost diversions manage upstream flows?
- Real time controls—can monitoring and operational mods control flows upstream stations?
- What happens if the MLS can't keep up during an emergency? Is that improved with a bypass?

Task 2 - Document Operational History: We evaluated MLS operations and operations of all other upstream stations. Data collection included SCADA data, overflow response logs, records of excessive pump cycling or continuous pumping, consistent use of redundant equipment meant for peak or emergency conditions, and need to reset pumps controls seasonally. A field pressure testing plan gathered pressure records in the force main upstream and downstream of the MLS. Carollo deployed our own flow meters.

Task 3 - Modeling of the Corridor and Baseline Hydraulics: We modeled to simulate baseline hydraulics for average daily flow and peak flow conditions. The model included all lift stations that could be affected by the changing head conditions resulting from the bypass—these were the upstream stations that are manifolded and lead to the MLS.

It is also important that the simulations supported continued flow into the WWTP. The model provided a detailed understanding of MLS operations and conditions where a bypass may be beneficial. The model used pressure data gathered downstream of the MLS. In the course of modeling, we found issues that were causing problems in the collection system. The figure below depicts a model discovery where poor pump selection was the cause of many issues, such as short cycling and grit settlement from low velocities.



Carollo's analytical approach identified conditions causing operational challenges.

Task 4 - Bypass Feasibility Evaluation: A model scenario simulated and evaluated the system after the MLS Bypass, under average and peak flow conditions, to determine potential improvements in operations, whether current issues were remedied and future goals were met, and identified issues that may be generated. We also assessed ease of implementation, required permits/right-of-way, and implementation schedule.

Task 5 - Identification of Required System Upgrades: Upgrades included construction of the bypass plus the remedy of hydraulic deficiencies (i.e., upstream lift stations affected by the change of head imparted by the bypass).

Task 6 - Cost Estimates: Cost estimates for the MLS Bypass project and associated upgrades were developed, plus a prioritized implementation schedule. In addition, operations and maintenance costs to allow estimates of related life-cycle costs.

APPROACH TO POTABLE WATER DISTRIBUTION ASSESSMENT PROJECTS

HYDRAULIC MODELING

While the City has a mature service area, a potential new development (Casino Live property) will further increase water demand. Like many utilities, the City utilizes a hydraulic model as a planning and assessment tool. As water demand continues to change with new development, the City must continue to plan for changes, including hydraulics and water quality. Our team has partnered with you to evaluate the impacts of system growth and future water allocations, this work resulted in your latest Water Master Plan.

Water quality modeling can alleviate water quality issues in the distribution system.

As part of the Master Plan and recent completion of the City's hydraulic model update, our team was able to:

- Deliver an up-to-date hydraulic model for the City's distribution system.
- Update and correct the network infrastructure per GIS and communications with staff.
- Simulate the actual performance of the high service pump stations – by adding pumps and actual data-derived pumping controls.
- Update total demands with inclusion of large users.
- Evaluate network hydraulic performance.
- Predict system performance upon projected future growth.
- Evaluate storage and pumping.
- Perform a desktop pipe replacement assessment based solely on age and material.
- Verify fire flow at locations of non-compliance per provided reports.
- Evaluate water age.

Most importantly, we were able to gain considerable knowledge about your distribution system and its operations, which allows us to confidently offer the City additional relevant services 'without a learning curve' in the upcoming years. Such services could include:

- Continuous model update for a 'living' planning tool.
- Cost-effective testing and understanding of any potential scenario, from a basic pump change, to a major emergency event.
- Development of strategies to solve hydraulic performance weaknesses.
- Reliability and redundancy of infrastructure in the event of a water main break, and what-if operational scenarios in the event of pipe breaks or down time.
- A complete risk-based pipe replacement program derived from the previously completed desktop assessment and a new condition assessment.
- Evaluate fire flow compliance at each and all City's fire hydrants for ISO and non-ISO regulated locations.
- Pinpoint solutions for areas with high water age or diminished water quality, which may include:
  - » Assessment of the likelihood of success of different unidirectional flushing (UDF) strategies and plan UDF programs accordingly.
  - » Optional capital projects to improve connectivity.
  - » Recommendations for regular automated flushing and rotation schemes.
- A full calibration using consumption data from billing records.
- Regulatory reporting.
- Evaluation and optimization of developer utility design proposals and associated costs for the City.
- Permitting assistance.

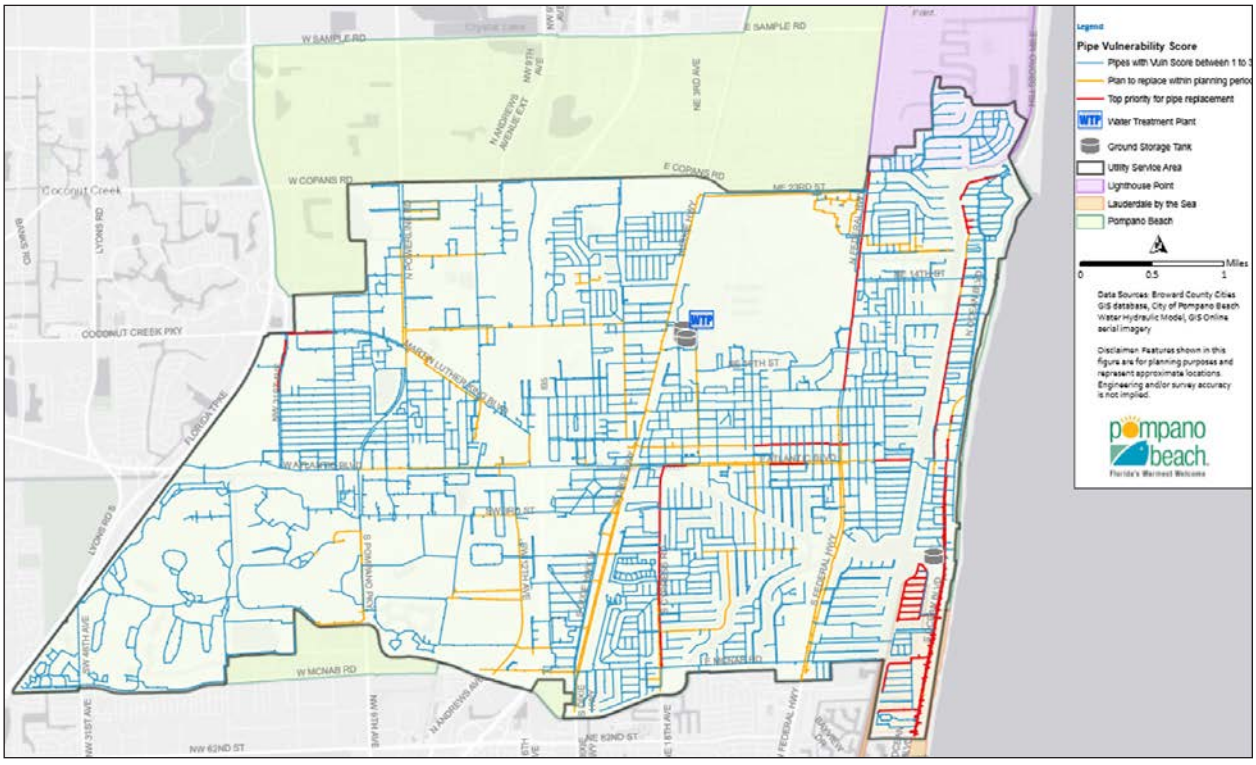
APPROACH TO PIPELINE DESIGN PROJECTS

We are very knowledgeable of most of the City's horizontal infrastructure and are aware of your proactive approach toward system improvements.

EXISTING CONDITIONS: POTABLE WATER SYSTEM

The City's potable water distribution system is comprised of approximately 275 miles of pipe varying in size from 2 to 36 inches in diameter, with the most common pipe size being 6-inch diameter. A few hundred feet of 42-inch and 12-inch pipes connect the ground storage tanks with the high service pump stations. Records previous to the City's 2020 Water Master Plan prepared by Carollo indicated that 22 percent of the pipes were PVC, and about 75 percent had unknown pipe material. A small percentage of the pipes in the system appeared to be asbestos cement, commonly known as Transite (after the brand that started manufacturing the pipes in North America in the 1920s).

As part of the City's 2020 Water Master Plan, Carollo focused on records review, including as-built construction drawings, GIS data, research and scrutiny of available records by staff, and first construction date by parcel (from tax rolls) to assign material and age to most system pipes, with the aim of assessing the system for pipe replacement need. Results of this desktop approach indicated that 66 percent of pipes are PVC, 20 percent are DIP, and about 13 percent are CIP. Less than 1 percent is comprised of HDPE and Transite.



Carollo understands the vulnerability of various components of your water distribution system.

Records of installation year of pipes were also sparse or unavailable for any areas where pipes were installed prior to the 1990's decade. Carollo resorted to perform a series of analyses in GIS to determine pipe age based on the year a parcel or address point was first built within a community, according to the most current Broward County tax roll database. Carollo was able to establish an estimated age of all distribution pipes in the system using this methodology. Remaining useful life was approximated based on age and material. Carollo found that about 37 percent of the CIP pipes are expected to have a useful remaining life of 10 years or less, while 50 percent of CIP and 28 percent of the DIP pipes would have a remaining useful life of up to 20 years. This information was used to assess the likelihood of failure of pipes.

Carollo recommended verification of both material and age and condition assessment of pipes identified as having the least remaining useful life, followed by pipe replacement. The map in the Figure shows the corridors that have been identified as a top priority for pipe replacement based solely on material and age.

EXISTING CONDITIONS: RECLAIM SYSTEM

The existing reuse water distribution system consists of high pressure pipelines for the City Municipal Golf Course and low pressure pipelines for the other portions of the reuse distribution system. The City's reuse distribution system is comprised of approximately 32 miles of pipe ranging from 2 inch to 30inch in diameter. The active users are comprised of a variety of land uses including residential, commercial, institutional, City medians, parks, etc. The City plans to expand the reuse water distribution system to other areas.

There are 1,238 reuse connections as of 2019, of which 995 are residential and 243 are multi-family and commercial. A substantial increase (about 50 percent) occurred over the last five years, and active network expansion is ongoing. To date, the City's largest reuse customers are the City's Municipal Golf Course, Pompano Community Park, landscaping along Federal Highway and Copans Road, City medians, and residential areas east of Dixie Highway.

The City has two reuse water on-site storage tanks with a total storage capacity of 5.5 MG. The City's current average daily demand is approximately 2.7 mgd. Although the City has significant reserve treatment capacity, the overall reuse demands are highly peaked at night when the vast majority of customers are irrigating.

The City plans to install additional piping within the network to account for anticipated new customers and increased demands. By 2025, the City will add 3.5 miles of pipe. Four extra miles will be added between 2025 and 2030. Further expansion efforts are planned beyond 2040, through buildout.

EXISTING CONDITIONS: WASTEWATER COLLECTION SYSTEM

The City's wastewater collection system provides for the conveyance to Broward County's North Central Regional wastewater treatment plant. The collection system has approximately 62 miles of force main that range in size from 2 to 42 inches in diameter. The collection system has approximately 80 City-owned lift stations.

We understand that the City has a rehabilitation program that provides for the relining of a portion of the pipe (about 20 miles) and manholes (about 100) each year. This program is extremely important to reduce infiltration and inflow from leaky lines.

DESIGN OF PIPELINE PROJECTS

The design of horizontal infrastructure projects requires explicit knowledge of existing utilities. Data collection is often key in making the best decisions, in particular where route alternatives or construction methods may result in significant cost savings. Trenchless technologies continue to be more competitive, in particular where restoration costs may be high.

To address the challenges in routing of pipelines, we focus on field data collection early in the project. This includes being "hands-on" with staff, surveyors, and others to fully understand the challenges that may existing along a route corridor. Early determination of these challenges helps to determine the exact route, materials, and methods to be applied to each part of the route. It also helps avoid expensive change orders during construction. Carollo will dig in to obtain the best information to get your project started sure that unknowns are minimized.

As an alternative to conventional plans and specificationss, we have used a GIS-based approach to design where closely paired with a contractor. This approach is used to show lesser detail on drawings, saving time and engineering costs, yet giving enough detail to allow contractors to bid the work.

As part of our design approach, Carollo typically conducts an assessment for pressure pipe to determine the actual condition of the pipe. The type of assessment conducted is specific to the application (water, wastewater forcemain, reclaim, gravity, etc.), the pipe material, and accessibility to the pipe. Metallic and concrete material pipes are often candidates for detailed condition assessment such as ultrasonic investigation. An example matrix is shown in the table on the following page.

Inspection Technology Matrix for Pressure Pipes

* Costs do not include engineering fees, operation, and associated mobilization costs.

								Pressure Pipe Defects										
								Location		Leaks		Structural						
												Type						
No.	Level of Intrusion	Technology	Maturity of Technology	Cost Range* ($/LF)	Allowable Pipe Flow Condition	Applicable Pipe Material	Variable Detected	Specific	General	Identification	Volume	Wall Thickness	Mat. Loss	Wire Breaks	Internal or External Visual ID	Joint Defects	Objective Data	Dewatering Requirements
1	1	Flow Monitoring	H	1	all	all	Velocity; volume		✓	✓	✓							None
2	1	Guided Wave Uncorrelated Leak	H	10	surcharged	all	Leaks		✓	✓	✓							None
3	1	Acoustic Leak Detection	M	1	surcharged	all	Leaks		✓	✓	✓					✓		None
4	1	Stray Current Analysis	M	1	all	metal	Corrosion potential		✓									None
5	1	Infrared Thermal	M	5	all	all	Leaks	✓	✓		✓							None
6	1	Surface Ground Penetrating Radar	M	5	all	all	Location/voids	✓										None
7	1	Guided Wave Correlated Time Domain	M	10	surcharged	all	Average wall thickness		✓	✓		✓	✓					None
8	1	Acoustic Emissions	M	20	surcharged	PCCP	Breaking prestressing wires		✓					✓				None
9	1	Ultrasonic (exposed pipe)	M	NA	all	metal; plastic	Wall thickness	✓				✓	✓					None
10	1	Transient Pressure Wave (pCAT)	M	10	full	Metal; AC; concrete	Pipe defects, gas pockets, wall thickness (average in section)	✓	✓			✓	✓					None
11	1	3-axis Location - Full	M	NA	full; surcharged	all	GPS and depth of burial coordinates	✓										None
12	1	X-Ray Tomography	L	50	all	all	Wall thickness, corrosion pits	✓	✓			✓	✓	✓	✓	✓	✓	None
13	2	Coupon Extraction	H	NA	all	metal; concrete	Wall thickness	✓				✓	✓					None
14	2	Air Pressure	H	5	empty	all	Leaks		✓	✓	✓					✓		Empty
15	2	Hydrostatic	H	5	surcharged	all	Leaks		✓	✓	✓					✓		None
16	2	Sahara®	H	20	surcharged	all	Leaks, pipe defects, gas pockets	✓		✓	✓				✓			None
17	2	Smart Ball® / Nautilus	H	5-10	surcharged	all	Leaks, pipe defects, gas pockets	✓		✓	✓							None
18	2	pH Indicator	M	NA	low; empty	CML; concrete	pH of cementitious pipe material								✓			Empty
19	2	Internal Ground Penetrating Radar	M	10	empty	RCP	Wall thickness/defects/voids	✓								✓	✓	Empty
20	2	Pipe Diver (EM)	L	20-30	surcharged	metal	Wall thickness, defects	✓				✓	✓	✓				None
21	2	See Snake	L	50	surcharged	metal	Wall thickness	✓				✓	✓					None
22	3	Manned-entry	H	10	empty; low	all	Infiltration; defects; dimensions	✓		✓	✓	✓	✓				✓	Empty
23	3	CCTV	H	10	flooded; low	all	Infiltration; defects	✓	✓						✓		✓	Empty
24	3	Inclinomitor	H	5	low; empty	all	Slope	✓										Empty
25	3	Broadband Electromagnetic (BEM)	M	50	empty	metal	Wall thickness	✓				✓	✓					Empty
26	3	Pulsed Eddy Current	M	50	all	metal	Wall thickness	✓				✓						Empty
27	3	3-axis Location - Dry	M	5	partial; empty	all	X,Y,Z Coordinates	✓										Empty
28	3	Optical Scanner	M	10	empty; low	all	Infiltration; defects; dimensions	✓	✓						✓		✓	Empty
29	3	RFEC (Hydroscope)	M	50	empty	metal	Wall thickness	✓				✓	✓					Empty

Level of Intrusion

1	Non-intrusive; pipe remains in service
2	Semi-intrusive; limited access to interior pipe needed
3	Intrusive; high level of access to interior of pipe needed; pipe must be out of service

Maturity of Technology

H	High maturity of technology – commercially available
M	High maturity of technology – limited commercial availability; successful pilot testing has been performed
L	Low maturity of technology - advanced stages of research and limited pilot testing

The information provided in this table is a compilation of professional experience as well as interviews with the following companies: Pure Technologies, Hibbard Inshore, LLC., Remote Inspection Technologies, HydroMax, Pipeline Inspection and Condition Analysis Corporation (PICA), as well as literature review.

PERMITTING

One of the keys to our success in implementing challenging projects is our ability to initiate and maintain close coordination with the various regulatory agencies responsible for permitting these projects. We have a long history of working closely with federal and state of Florida regulatory agencies such as the FDEP, to successfully implement cutting edge utility projects. The following are a few examples of the technical support which have been provided by Carollo to regulatory agencies in their development of regulatory guidelines, as well as our strong working relationship with these regulatory agencies.

Our Task Order Manager Scott Richards' horizontal directional drill project under the Broward River in Jacksonville, Florida.

Carollo was part of the FDEP Technical Advisory Committee that developed Florida's current reuse regulations. Carollo staff held key roles in developing the EPA Guidelines for Water Reuse. Carollo supported the FWEA Utility Council for the proposed EPA numeric nutrient criteria and was a key participant in the Reuse Coordinating Committee related to clarification of the water management districts' role in reuse.

Recently, we have worked closely with FDEP to gain approval for a soil-aquifer treatment based potable reuse pilot study for the Toho Water Authority; in Orlando, we have conducted workshops with FDEP on the 50-mgd indirect potable reuse Tampa Augmentation Project (TAP) and are members of the ongoing Florida Potable Reuse Commission, which is formulating a framework for Florida's next generation of potable reuse regulations.

Our permitting approach is to meet with regulatory agencies early on to avoid surprises. Our team aims to have pre-permitting meetings with agencies early in the design process, especially where the permit approval could have a major impact on the route. Consideration of environmental impacts and maintenance of traffics are two of the most common items that must be addressed early on with the appropriate stakeholders. This approach has allowed us to have successfully permitted a number of "firsts", especially where new technologies, or "thinking out-of-the-box solutions" are applied to a project.

COST ESTIMATING AND PROCUREMENT

Market changes continue to occur and construction prices continue to change. We do cost estimates in-house and have a database that is regularly updated and tailored to local markets. We also continue to work closely with numerous clients and contractors around the state to have a pulse on market trends.

With the current market, we have found that the best approach to a quality constructed project it to gain interest from a number of qualified contractors to bid. We work with our clients and communicate with contractors so they are aware and interested in the project before bidding. We have also worked with contractors in alternative delivery, including design-build, CMAR, and other methods, such best-value RFPs, where time is of the essence.

SERVICES DURING CONSTRUCTION

Services during construction can be basically separated into two functions: **General services** and **resident inspection**.

General services are generally more administrative in nature and require planning, coordination, establishment of communications protocols, and proper record keeping. Resident inspection requires an understanding of construction methods, sequences, and the ability to projects future work so that the proper inspections can be anticipated. We have well established procedures for setting up general services work flow for construction projects. More importantly, our experience in overseeing construction projects is even more critical to the success of the project when inspections are to be conducted on a part-time basis.

We have gained this experience in Florida through traditional design-bid-build type of construction projects, as well as accelerated design-build projects, where we were part of the design-build team. This experience has allowed us to gain insight into construction methods and practices that can affect the quality of work. We know that conducting part-time inspections requires detailed knowledge of how the contractor will perform the work and insistence on an always accurate and up-to-date construction schedule so that inspections can be scheduled in advance, especially for things like inspecting rebar placement before a concrete pour or witnessing a manufacturer's performance test. If these types of construction activities are missed, it is extremely difficult, costly, and sometimes impossible to redo.

We know that to accomplish the necessary inspections and serve as an effective liaison between the City and the contractor, we must develop a professional working relationship with the contractor while always protecting the City's interests. This can create conflict at times. However, by knowing what is required by the design and when the work is scheduled to be completed, we can keep the contractor from "cutting corners" and even anticipate and expedite responses to the contractor's requests for information (RFI) or issue work change directives before they become an impact to the critical path.

During construction, our team remains hands-on from start to finish. This may include full-time construction management where desired, or part-time construction oversight. In either case, the engineer remains involved to address questions and to make sure the design progresses as intended. We adapt to our client's preferred construction management system, but also offer a web-based construction management system to provide easy access to shop drawings, transmittal of RFIs, and record keeping. In the end, open and routine communication between all parties is critical to a project's success.

APPROACH TO STORM WATER MANAGEMENT PROJECTS

It is widely recognized that developments impact negatively on drainage systems. Our storm water approach focuses on natural hydrological patterns and processes as much as possible, to develop and design comprehensive storm water management systems in a manner that reduces these potentially negative impacts and mimics nature and its flow directions.

Focus is placed on the following storm water management objectives:

- Minimize threat of flooding and water quality degradation.
- Protect receiving water bodies.
- Promote multi-functional use of storm water management systems.
- Develop sustainable storm water systems.

While these objectives may seem straight forward, comprehensive storm water design and construction projects require the skills of a team that has creative and insightful experience to maximize the use of your capital dollars. Our team is extremely qualified in analyzing storm water conveyance solutions using cutting-edge tools, gaining consensus with stakeholders, and designing stable and greener solutions.

Our creativity in problem-solving approaches to drainage design will be an integral component of our work. We strive to maintain compatibility and minimize interference with existing drainage patterns; control flooding of property, structures, and roadways for design flood events; and minimize potential environmental impacts on storm water runoff. Storm water collection systems must be designed to provide adequate surface drainage, while at the same time meet local stormwater management goals such as water quality, canal protection, habitat protection, and maximize percolation.

The complexity and uncertainty about the characteristics of storm water systems have a great impact on decisions about countermeasures and other techniques that you will apply now and in the future. Our approach will consider these uncertainties and changes in social, economic, and environmental factors to give you a comprehensive image of the future. Our method integrates system analysis, forecast methods, scenario analysis, and contributions of experts and stakeholders into a comprehensive framework. This approach to can be categorized into:

- Cutting-edge tools for data collection, such as Satellite Remote Sensing, including drone technology.
- Continuous simulation.
- Data gap analysis.

We know that a significant amount of data is required to plan, design, and implement storm water and flood management projects. We typically identify a number of areas in which satellite remote sensing and drone technology can be used to assess, monitor, and model the storm water conveyances in the project area. Our approach to data gathering and analysis achieves a balance between environmental protection and economic efficiency. The remote sensing method for impervious surface calculations, topographic survey, land-use planning, and extraction of drainage (sub-basin) boundaries is accurate and cost effective, and will save you money and time. There are satellite imageries on the market with spatial resolution as high as 30 cm and have data collection frequency of about 1.5 days.

Some of the Satellite Remote Sensing Applications We Will Bring to Your Project Include:

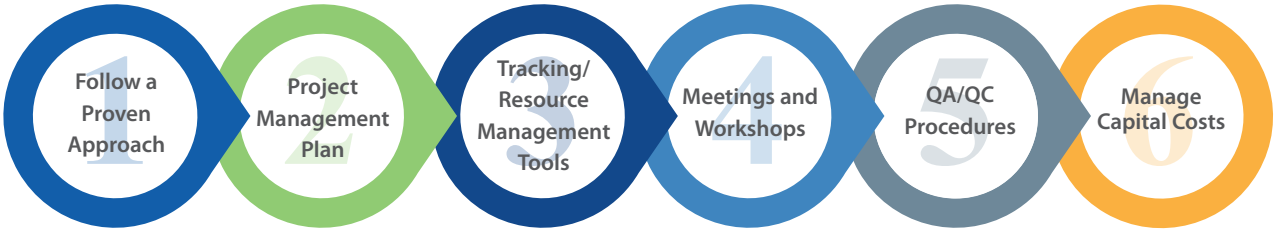
1. Land cover and impervious surfaces extraction.
2. Flood mapping.
3. Characterization of watershed pollutant sources.
4. Extraction of historic flood data for hydrologic/hydraulic model calibration and verification.
5. Post project monitoring.

We use continuous simulation techniques to augment design storm analyses. Continuous simulation, in general, is not a new idea; however, its application as the standard for sizing storm water control facilities is relatively recent and represents a more comprehensive and realistic approach to augment single storm analysis. Continuous simulations that utilize an entire series of rainfall events (a complete long-term precipitation record or similar synthetic distribution) for a particular project area are necessary to adequately model a project's effect on downstream conveyances.

Using (A), the raw satellite data alone shows much less detail than (B), the completed impervious cover map after image classification and statistical analysis. Areas shaded in deep red have the highest percentage of imperviousness, while areas shaded in gray have the lowest percentage of imperviousness.

HOW DO WE MAINTAIN TIME SCHEDULES AND CONTROL COSTS?

SIX ESSENTIAL STEPS FOR SCHEDULE AND COST CONTROL:

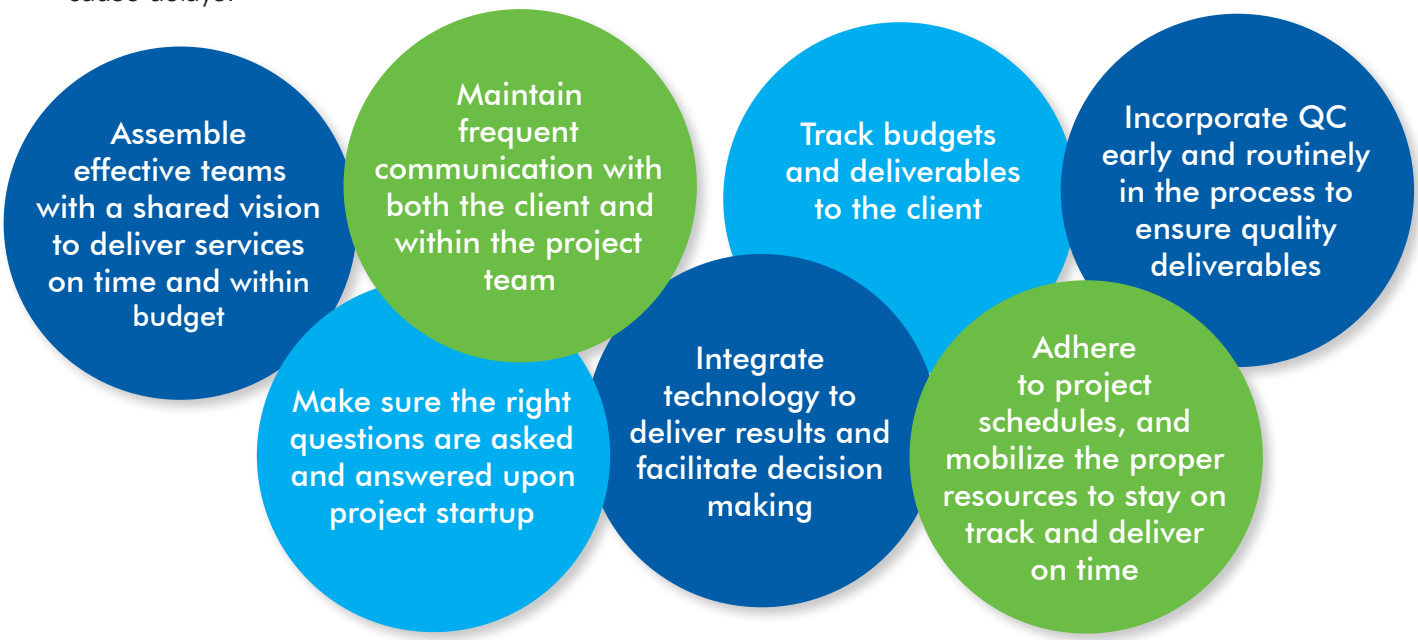


STEP 1: WE FOLLOW A PROVEN OVERALL APPROACH FOR SUCCESSFUL SCHEDULE AND COST CONTROL

Carollo has rigorous procedures for project management. These procedures are time tested and used on all our projects. That consistency contributes to the success of our ability to maintain schedules and budgets. Key elements of our management approach include:

- Emphasis on communication with the client and within the project team–keep everyone on the same page, do it once and do it right.
- Key senior staff involvement for quality control–take advantage of the experience of our staff.
- Frequent comparison of planned-versus-actual budget and schedule–know where a project is at all times, avoid surprise, and immediately address slippage.

Inherent to our project delivery approach is the fact that Carollo has the commitment of each of our Project Managers to follow our procedures on each and every project. Further, each project has an advisory team to monitor the work progress and provide technical overview to promptly resolve concerns before they become significant and cause delays.



Carollo's Project Managers are committed to the multitude of responsibilities that make are projects successful.

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.

To monitor project progress, the project labor-hour budget is fit to the project schedule to form an "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.

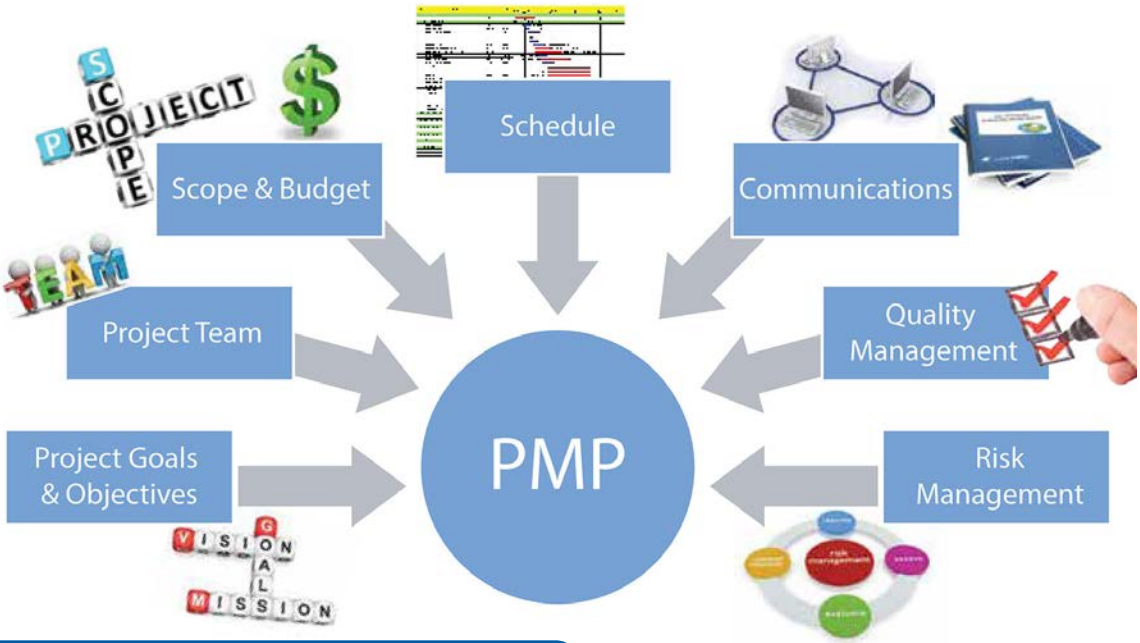
Each month, the percent complete is plotted on the S-curve to compare actual project progress to planned progress. If the actual progress falls behind the planned progress, corrective measures are identified and implemented.

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

STEP 2: EVERY PROJECT BEGINS WITH A PROJECT MANAGEMENT PLAN

Every project begins with preparing a Project Management Plan (PMP). The PMP is a powerful communication tool that helps our project manager coordinate our work effort, control the project, and meet the expectations of the stakeholders and your staff.

The PMP is created during the initial planning of the work, and serves as the basis for development of the final work product and all related documents. Once the final PMP has been accepted, the document becomes a dynamic planning tool for successful project delivery.



The PMP is a dynamic tool for successful project delivery.

STEP 3: MAKE USE OF TRACKING AND RESOURCE MANAGEMENT TOOLS

Carollo understands that "time is money" and schedules are important. Carollo will develop a project schedule as part of our efforts to track expected performance against actual project execution. These project schedules can range from simple Excel bar charts to MS Project scheduling depending on the complexity of the project.

At Carollo, efficient resource utilization is paramount to meeting schedules. Our experienced, expert staff is our greatest asset for schedule control. Our fundamental staffing approach is to assemble the best qualified team to match the project requirements. Labor hours and budget are then estimated by reviewing the project scope and schedule against the staffing levels and budgets of similar projects. This will determine the staffing level required to complete each task by the milestone date. A database of staffing needs and current assignments is maintained and updated frequently, both in our local Coral Springs office and company-wide. Specifically, staff assigned to this contract will reserve a percentage of their available time for work on City projects. This ensures that they will be available to respond to intermittent assignments as the need arises.

STEP 4: KEEP YOU IN THE LOOP – PREPLANNED MEETINGS AND WORKSHOPS

Our most direct way to communicate with you will be through meetings. At important decision points, we will conduct meetings to present critical information regarding the project to City user groups, engineering staff, and other affected parties, and reach a consensus. Our experience shows that building consensus with user groups is integral to any successful project. We are here to serve your needs.

For each project meeting or workshop, we will prepare an agenda ahead of the meeting. We will prepare meeting notes and decision logs for each meeting to document the discussion, including decisions made. Meeting on a more frequent and informal basis with project team members, as required to assist in the decision-making process.

Finally, we choose our Project Managers for their ability to communicate with your Project Managers. Those day-to-day discussions can be equally important to formal meetings to keeping our team informed and headed to the desired endpoint.

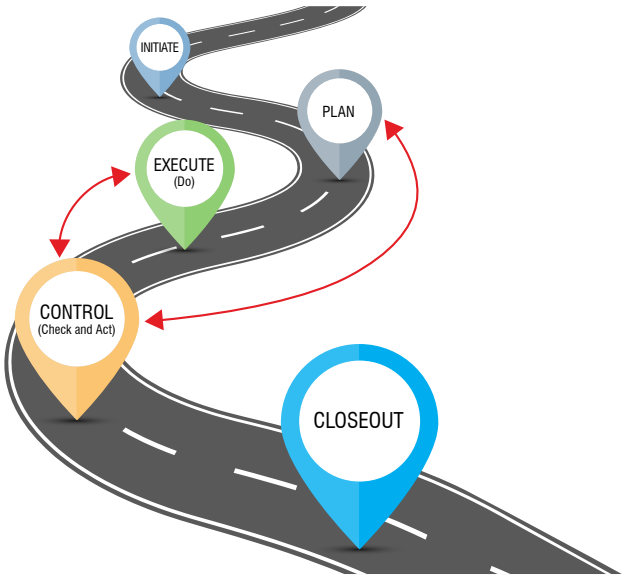
STEP 5: ADHERE TO OUR QA/QC PROCEDURES – AVOID WRONG TURNS AND REWORK

QUALITY MANAGEMENT APPROACH

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, 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 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.



TOTAL QUALITY MANAGEMENT FROM START TO FINISH...
Our approach will focus on quality throughout all phases to deliver a project that is correct, on time, on budget, achieves the scope, and meets or exceeds your expectations.

• *SECTION 2: SCHEDULE*

Schedule

We believe that an experienced team led by a Task Order Manager with excellent communication skills will keep your work on schedule.

OUR BEST PROOF ON MEETING SCHEDULES: OUR PAST WORK FOR THE CITY

As this is a Continuing Services Contract, we cannot prepare a schedule for unidentified tasks. However, our best proof of our ability to meet schedules is our past projects for the City, as they have all been delivered on time and on budget, as shown in the following table:

DEMONSTRATED ABILITY TO COMPLETE CITY PROJECTS WITHIN BUDGET AND ON TIME

PROJECT	ROLE	ENGINEERING BUDGET		KEY DELIVERABLE	DELIVERABLE ON TIME?
		INITIAL	FINAL		
Concentrate Pipeline Assessment	Prime	$13,500	$13,500	Technical Memorandum	Yes
Design of Membrane Concentrate Pipeline	Prime	$46,859	$46,859	Construction Documents	Yes
Electrical Master Plan - Phases I and II, and Design	Prime	$222,995	$227,995	Technical Memorandum	Yes
Lime versus Nanofiltration Water Treatment Plant Evaluation	Prime	$51,845	$51,845	Technical Memorandum and Construction Documents	Yes
Concentrate Blending Study	Prime	$24,983	$24,983	Technical Memorandum	Yes
Electrical Master Plan Miscellaneous Design/Construction Services	Prime	$198,000	$198,000	Construction Documents	Yes
Power Supply for the UFO Office	Prime	$26,600	$26,600	Construction Documents	Yes
Reuse Treatment Plant Permit Renewal	Prime	$59,264	$59,264	Permit Submittal	Yes
Transfer Pump Station - Additional Services	Prime	$33,500	$33,500	Construction Documents	Yes
Water Master Plan	Prime	$197,866	$197,866	Master Plan Report	Yes
Water Supply Facilities Work Plan 2018 Update	Prime	$66,046	$66,046	Permit Submittal	Yes
WTP Transfer Pump Station Improvements	Prime	$99,707	$99,707	Construction Documents	Yes
Hurricane Hardening of HSP 5-6 Building	Prime	$71,500	$71,500	Construction Documents	Yes

HOW DO WE MAINTAIN SCHEDULES?

Details on our approach to schedule control in our task orders are shown in Section 1 Technical Approach.

Also, communication between our team and yours is essential to keeping a project on track and avoiding wrong turns. From a project's onset, understanding your goals and objectives will give our team a focus on the endpoint. Then during the project, we emphasize communication between our task order manager and yours, so that changes can be accommodated immediately rather than following project milestones.

• *SECTION 3: REFERENCES*

References

When you contact our references, we are confident you will hear phrases describing our services that include the words *"Innovation," "Responsiveness," and "Integrity."*

Carollo prides itself on the continuing relationships that we have developed with our clients. As requested, we have provided example Tri-County references below.

We invite you to contact these individuals to verify our responsiveness and quality of service on similar projects.

PAST PROJECTS IN THE TRI-COUNTY AREA

REFERENCE INFORMATION	CLIENT/PROJECT NAME	SCOPE OF THE PROJECT/CAROLLO'S RESPONSIBILITIES	COST
Missie Barletto, Assistant Public Works Director 561-243-7000 ext. 4104 barlettom@mydelraybeach.com	City of Delray Beach, FL, Conceptual Design for Thomas Street Stormwater Pumping Station	The City of Delray Beach's existing Thomas Street Storm Water Pumping Station provides pumping to the drainage basin, including Thomas Street, Vista Del Mar Drive, and parts of Andrews Avenue and Lowery Street located between the ocean and the intracoastal waterway. The station consists of a single 75 HP pump with a wetwell and associated electrical systems, and was rated between 18,000 gpm and 20,000 gpm. The pump station has experienced multiple issues due to failures of the pump, power supply, and intracoastal discharge valve. These failures resulted in severe flooding of the local area. Carollo was retained to provide design services with a focus on both short- and long-term improvements, including modifications required to the pump station to address the 30-year sea level rise. The pump station layout had to accommodate the severe challenge of an extremely tight site that was located on a 20-foot easement between two properties. In addition, the project team had to determine how to fit 80,000 gpm of pumping capacity in a very small wetwell. According to previous master planning efforts, it was indicated that future design could be up to 80,000 gpm. Carollo's engineering services included data collection, preliminary design, and design for reliability and redundancy improvements, permitting, and bidding.	$123,000 (Design)

PAST PROJECTS IN THE TRI-COUNTY AREA (continued)

REFERENCE INFORMATION	CLIENT/PROJECT NAME	SCOPE OF THE PROJECT/CAROLLO'S RESPONSIBILITIES	COST
Joe Paterniti, Utilities Director 561-660-1520 paternitij@bbfl.us	City of Boynton Beach, FL, Owner's Representative Services for Design-Build of Reclaim System Expansion	The City of Boynton Beach plans to expand its reclaimed water service area with the addition of new large user customers. Future customers are to be added to the system in multiple phases and target customers include commercial properties, golf courses, and large developments. Carollo is assisting the City during the planning, design, and construction phases of the project. A reclaim system expansion plan was developed including recommendations for the system design. Carollo also assisted with future customer procurement, system modeling and optimization, routing, and phasing. As part of the planning phase, Carollo found a creative approach to eliminate the need for a booster pump station and storage tank, for approximately $4 million in capital savings. Carollo also identified potential customers, coordinated meetings, evaluated connection requirements, and assisted with the procurement of new reclaimed water users. Concurrently, Carollo collaborated and updated the reclaimed water hydraulic model, evaluated the existing system, assessed connection demands, performed desktop route analyses for phasing options, optimized the system for future buildout, and developed a phasing/connection plan for future customers. Carollo established recommendations for system improvements based on model outcomes and considered alternatives to be discussed with Boynton and the Design-Build Team. A capital improvements summary was also developed based on the results of the discussions. As Owner's Representative, Carollo will be available to provide support, coordination, and recommendations to the City and the Design-Build Team during the design and construction phases of the Reclaim System Expansion project.	$189,500
Steve Doyle, PE Construction Project Management Supervisor 954-831-0962 sdoyle@broward.org	Broward County Water and Wastewater Division, FL, Pumping Stations and Storage Tanks	The Broward County Water and Wastewater Utilities Division selected Carollo to design new high service pump stations and storage tanks to expand the capacity of three of its water supply districts. Carollo work included: District 1B1 - Improvements to the facility included design of a new 1.5-million gallon (MG) finished water storage tank, new high service pump station, new chemical system for disinfection, electrical power improvements, and new 12- and 16-inch magnetic flow meters. Site work included pavement and grading, drainage improvements, and yard piping modifications. District 2A - Improvements to the facility included design of a new 5-MG finished water storage tank to increase plant capacity. Two new 48-inch ultrasonic flow meters were installed to monitor and help control flow at the facility. Site work included pavement and grading, drainage improvements, and yard piping modifications. District 3A - Improvements to the facility included design of a new 2.5-MG finished water storage tank, new high service pump station, new chemical system for disinfection, electrical power improvements, and new 16- and 18-inch magnetic flow meters. Site work included pavement and grading, drainage improvements, and yard piping modifications. The facility pumps treated water from the City of Hollywood, FL, to customers within Broward County, including Fort Lauderdale-Hollywood International Airport.	$4 Million (Design) $27.3 Million (Construction)

EXAMPLE PROJECT NO. 1

City of Delray Beach

CONCEPTUAL DESIGN FOR THOMAS STREET STORM WATER PUMPING STATION

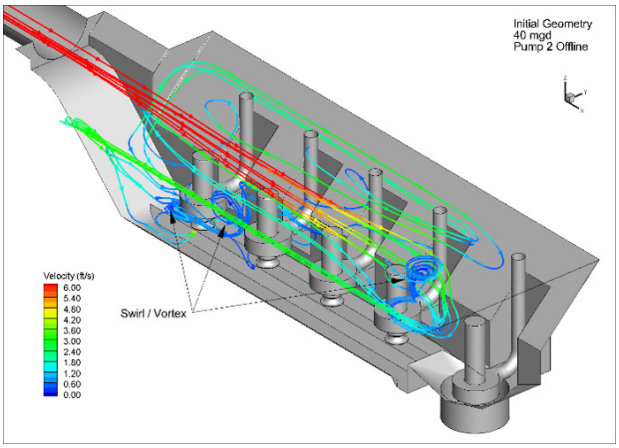
Reference:

Missie Barletto
Assistant Public Works Director
barlettom@mydelraybeach.com
561.243.7000 ext. 4104

Cost:

$123,000 (Design)

The City of Delray Beach's existing Thomas Street Stormwa Water Pumping Station provides pumping to the drainage basin, including Thomas Street, Vista Del Mar Drive, and parts of Andrews Avenue and Lowery Street located between the ocean and the intracoastal waterway. The station consists of a single 75 HP pump with a wetwell and associated electrical systems, and was rated between 18,000 gpm and 20,000 gpm. The pump station has experienced multiple issues due to failures of the pump, power supply, and intracoastal discharge valve. These failures resulted in severe flooding of the local area. Carollo was retained to provide design services with a focus on both short- and long-term improvements, including modifications required to the pump station to address the 30-year sea level rise. The pump station was severely challenged by the extremely tight site that was located on a 20-foot easement between two properties. According to previous master planning efforts, it was indicated that future design could be up to 80,000 gpm. Carollo's engineering services included data collection, preliminary design, and design for reliability and redundancy improvements, permitting, and bidding.



EXAMPLE PROJECT NO. 2

City of Boynton Beach

OWNER'S REPRESENTATIVE SERVICES FOR DESIGN-BUILD OF RECLAIM SYSTEM EXPANSION

Reference:

Joe Paterniti
Utilities Director
paternitij@bbfl.us
561.660.1520

Cost:

$189,500

The City of Boynton Beach plans to expand its reclaimed water service area with the addition of new large user customers. Future customers are to be added to the system in multiple phases and target customers include commercial properties, golf courses, and large developments.

Carollo is assisting the City during the planning, design, and construction phases of the project. A reclaim system expansion plan was developed including recommendations for the system design. Carollo also assisted with future customer procurement, system modeling and optimization, routing, and phasing.

As part of the planning phase, Carollo found a creative approach to eliminate the need for a booster pump station and storage tank, for approximately $4 million in capital savings. Carollo also identified potential customers, coordinated meetings, evaluated connection requirements, and assisted with the procurement of new reclaimed water users. Concurrently, Carollo collaborated and updated the reclaimed water hydraulic model, evaluated the existing system, assessed connection demands, performed desktop route analyses for phasing options, optimized the system for future buildout, and developed a phasing/connection plan for future customers. Carollo established recommendations for system improvements based on model outcomes and considered alternatives to be discussed with Boynton and the Design-Build Team. A capital improvements summary was also developed based on the results of the discussions.

As Owner's Representative, Carollo will be available to provide support, coordination, and recommendations to the City and the Design-Build Team during the design and construction phases of the Reclaim System Expansion project.

Carollo's creative approach solved low pressure issues, saved this pump station site for other uses and resulted in $4 million in capital savings.

EXAMPLE PROJECT NO. 3

Broward County Water and Wastewater Division

PUMPING STATIONS AND STORAGE TANKS

Reference:

Steve Doyle, P.E.
Construction Project Management Supervisor
sdoyle@broward.org
954.831.0962

Cost:

$4 Million (Design);

$27.3 Million (Construction)

The Broward County Water and Wastewater Utilities Division selected Carollo to design new high service pump stations and storage tanks to expand the capacity of three of its water supply districts. Work included:

District 1B1 - Improvements to the facility included design of a new 1.5-million gallon (MG) finished water storage tank, new high service pump station, new chemical system for disinfection, electrical power improvements, and new 12- and 16-inch magnetic flow meters. Site work included pavement and grading, drainage improvements, and yard piping modifications.

District 2A - Improvements to the facility included design of a new 5-MG finished water storage tank to increase plant capacity. Two new 48-inch ultrasonic flow meters were installed to monitor and help control flow at the facility. Site work included pavement and grading, drainage improvements, and yard piping modifications.

District 3A - Improvements to the facility included design of a new 2.5-MG finished water storage tank, new high service pump station, new chemical system for disinfection, electrical power improvements, and new 16- and 18-inch magnetic flow meters. Site work included pavement and grading, drainage improvements, and yard piping modifications. The facility pumps treated water from the City of Hollywood, FL, to customers within Broward County, including Fort Lauderdale-Hollywood International Airport.

PAST PROJECTS WITH THE CITY OF POMPANO BEACH

Carollo has successfully completed a number of projects for the City of Pompano Beach since completing your Electrical Master Plan in 2012. Our team is very familiar with your facilities and permitting requirements, and, most importantly, we have established working relationships with many of your staff. As requested, we have summarized our past projects in the table below.

CAROLLO'S PRIOR PROJECTS WITH THE CITY OF POMPANO BEACH

PROJECT	ROLE	ENGINEERING DISCIPLINES	DESIGN FEE
Concentrate Pipeline Assessment – Developed and compared alternatives for disposal of membrane concrete, including adding concrete into a reclaimed water plant.	Prime	C, E, PM	$13,500
Design of Membrane Concentrate Pipeline – Design and permitting of a concrete disposal pipeline.	Prime	C, E, PM, CM	$46,859
Electrical Master Plan - Phases I and II, and Design – Master planning and design for replacement/upgrade of electrical power distribution system for the water treatment plant.	Prime	E, H, S, CM	$227,995
Lime versus Nanofiltration Water Treatment Plant Evaluation – Evaluated bringing the lime softening plant into a 20-year life-cycle condition versus nanofiltration plant expansion.	Prime	A, C, E, H, PM, S	$51,845
Concentrate Blending Study – Evaluation of the blending of demineralized concrete with reclaimed water prior to distribution to the City's reuse customers.	Prime	PM	$24,983
Electrical Master Plan Misc. Design, and Construction Services – Design and construction for electrical system upgrades.	Prime	E, H, PM, S, CM	$198,000
Power Supply for the UFO Office – Design and construction services for power suppy and generator standby power from the WTP to the UFO Office.	Prime	C, E, CM	$26,600
Reuse Treatment Plant Permit Renewal – Renewal of FDEP operating permit for the Plant, which is permitted to treat 7.5 million mgd of reuse domestic wastewater.	Prime	PM	$59,264
Transfer Pump Station Additional Services – Design, permitting, and construction services for pump station modifications, pipe route, and cost estimation.	Prime	A, E, H, PM, S, CM	$33,500
Water Master Plan – Comprehensive master plan update to review costs, water demands, facilities, equipment, and distribution system.	Prime	E, H, PM, S	$197,866
Water Supply Facilities Work Plan 2018 Update – Assessed projected water demands and potential sources of water from 2016 to 2040, and developed a water protection standard for fire flow in the City's service area.	Prime	C, PM	$66,046
WTP Transfer Pump Station Improvements – Redundancy and reliability for the City's WTPs, specifically the transfer of treated water into the clearwell.	Prime	A, C, E, H, PM, S, CM	$99,707
Hurricane Hardening of HSP 5-6 Building – Design of hurricane hardening improvements to the WTP building, including structural evaluation and improvements recommendations.	Prime	A, E, H, PM, S, CM	$71,500
Master Lift Station 21 HVAC Improvements – Investigated and designed a solution of a new split DX unit with new/existing ductwork to meet electrical room and temperature needs.	Prime	CM, E, H, P, S	$30,975

Engineering Disciplines:
A=Architectural, C=Civil, CM=Construction Management, E=Electrical, H=HVAC, P=Plumbing, PM=Process Mechanical, S=Structural

Section 4:PROJECT TEAM FORM

Project Team Form

COMPLETE THE PROJECT TEAM FORM ON THE ATTACHMENTS TAB IN THE EBID SYSTEM. PROPOSERS ARE TO COMPLETE FORM IN ITS ENTIRITY AND INCLUDE THE FORM IN YOUR PROPOSAL THAT MUST BE UPLOADED TO THE RESPONSE ATTACHMENTS TAB FOR THE RFQ IN THE EBID SYSTEM.

PROJECT TEAM

RFQ NUMBER E-20-20

Federal I.D.# 86-0899222

PRIME

Role	Name of Individual Assigned to Project	Number of Years Experience	Education, Degrees
Principal-in-Charge	Liz Fujikawa, PE, LEED AP	33	MS Environmental Eng. BS Chemistry
Project Manager	Scott Richards, PE	18	BS Mechanical Eng.
Lead Facility Engineer	Ricardo Borromeo, PE	22	MS Environmental Eng. BS Chemical Eng.
Technical Advisor	Angelica Gregory, PE	17	PhD Civil Eng. MS Civil/Environ. Eng.
Technical Advisor	Mark Ludwigson, PE	17	MS Engineering BS Engineering Mechanics

SUB-CONSULTANT

Role	Company Name and Address of Office Handling This Project	Name of Individual Assigned to the Project
Surveying	Compass Point Surveyors, PL 3195 N. Powerline Rd. #122 Pompano Beach, FL, 33069	Benjamin Wiser
Landscaping		
Engineering	Gamboa Engineers, LLC 17433 SW 65th Ct. Southwest Ranches, FL 33331	Mario Gamboa
Other Key Member	DK Architects/Planners 61 NE 1st St., Suite 2 Pompano Beach, FL 33060	Andre Capi, Jan Wirt, Blaise McGinley
Other Key Member	Quest Engineering Services & Testing 2737 NW 19th St. Pompano Beach, FL 33069	R.N. Sailappan

• *SECTION 5: ORGANIZATIONAL CHART*

Organizational Chart

Our team is established: our project team has the depth of experience required to take on a wide array of tasks, bringing you innovative solutions that are on time and on budget.

Carollo and the City have a long history of project collaboration that began nine years ago when we did an Electrical Master Plan and served as Owner's Representative for the addition of VFDs at the Water Treatment Plant as part of your City-wide energy improvements project. We bring a team with in-depth knowledge of your water treatment and distribution, reclaim and wastewater systems, and related infrastructure, whose expertise has completed City projects punctually and within budget, while meeting your standards and expectations.

KEY PERSONNEL

We have the breadth of experience needed to meet the upcoming needs of your continuing services contracts. The team will be led by our Task Order Manager, Scott Richards. Scott brings a career focused on Florida-related infrastructure projects. Supporting Scott will be our Principal-in-Charge Liz Fujikawa. Liz brings the commitment of the entire Carollo organization and will make sure that the team delivers our task orders to your satisfaction.

MANAGEMENT PLAN

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 doing 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. 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 87 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.

pompano beach®
Florida's Warmest Welcome

CLIENT SERVICES MANAGER
Elizabeth Fujikawa, PE

ADVISORY TEAM
Mike Fleury, PE
Bob Cushing, PhD, PE

TASK ORDER MANAGER
Scott Richards, PE

ENGINEERING

LEAD CIVIL ENGINEER
Ricardo Borromeo, PE

CONDITION ASSESSMENTS
Kunal Nayee, PE

ENGINEERING
Sam Darkwah, PhD, PE
Mark Ludwigson, PE
Tony Sabatino, PE
Doug Pickell, PE
Manuel Garcia, PE
Chris Reinbold, PE

STAFF ENGINEERS
Mina Tawadros
Eduardo Torres

PLANNING AND MODELING

MASTER PLANNING
Laura Baumberger, PE

PIPELINE MODELING
Angelica Gregory, PhD, PE

STORMWATER MODELING
Sam Darkwah, PhD, PE
Yulyan Arias

STAFF ENGINEER
Juniper Marini

SUPPORT DISCIPLINES

GRANT FUNDING
Seema Chavan, PE*

REGULATORY COMPLIANCE AND ODOR CONTROL
Brian Graham, PE

STRUCTURAL ENGINEERING
Joel Smason, PE

ELECTRICAL ENGINEERING
Mario Gamboa, PE

I&C/SCADA
Norm Anderson, PE

COMPUTATIONAL FLUID DYNAMICS
Ed Wicklein, PE*

SURVEYING
Compass Point Surveyors

GEOTECHNICAL
Quest Engineering

* Denotes a non-Florida PE certification.

HOW DO WE MANAGE YOUR DELIVERY?

Carollo utilizes the same standards and practices of project management for every project we undertake, whether it is a small study or the most complex design project. These standards and practices include: quality, safety, schedule management, risk management, claim and control dispute, cost control and estimating, and web-based project management systems.

REPORTING HIERARCHY

Each of our Task Orders will be led by Scott Richards, essentially serving as the Project Manager for all our assignments. Scott's broad background allows him to knowledgably lead your array of civil engineering projects, including condition assessments, hydraulic modeling, pipeline designs, and storm water collection systems.

On our design Task Orders, Scott will be assisted by our Lead Civil Engineer, Ricardo Borromeo. Ricardo has successfully completed a multitude of civil engineering projects in South Florida, from storm water pumping stations to pipeline projects. He is also familiar with local permitting requirements.

For any planning projects, Scott will call on Laura Baumberger or Angelica Gregory to lead the work. Laura and Angelica have completed Master Plans and hydraulic modeling for the City and other local clients including Boynton Beach, Delray Beach, Davie, Broward County, and Palm Beach County.

Liz Fujikawa, our Client Services Manager, will bring the commitment of the entire Carollo organization to your work—ensuring that our resources are available and also, that you are completely satisfied with our work.

Our advisory team, Bob Cushing and Mike Fleury, provide an overarching review of the work progress as well as being on call for the team.

SECTION 6: STATEMENT OF SKILLS AND EXPERIENCE OF THE PROJECT TEAM

Statement of Skills and Experience of the Project Team

Our established partnership will continue to benefit the City to effectively deliver your projects, on time and on budget, and our innovative ideas will save your capital dollars.

We Know You and You Know Us:

The City of Pompano Beach and Carollo Engineers have had a long partnership that has lasted over nine years and has included many projects such as the City's Electrical Master Plan and Design, Hurricane Hardening at the Water Treatment Plant, Assessment of Lime Softening versus Nanofiltration, Water Master Plan, WTP Transfer Pump Station Improvements, as well as other projects listed in the Schedule section. Numerous team members, including Liz Fujikawa, Mark Ludwigson, Mario Gamboa, Angelica Gregory, and Laura Baumberger are all familiar to City staff and have contributed to your previous City projects.

This past experience offers knowledge of your facilities and infrastructure, understanding of your long-term goals and operational requirements, and the expertise necessary to deliver any of your projects. Furthermore, the partnership that has grown through the years brings an unmatched commitment to your success. Carollo will not substitute any assigned personnel without the City's prior approval.

We Specialize in Civil Engineering Related Services:

The Carollo team provides planning, design, and construction management services for municipalities serving populations ranging from less than 10,000 to several millions.

This demonstrated, relevant experience is key when it comes to matching the specific requirements in your RLI. We believe that our focus in civil engineering related services, such as water distribution, wastewater collection, reclaim water distribution, and storm water management will make the difference between good versus outstanding services.

WHAT DO OUR CLIENTS SAY?

"Carollo Engineers, Inc. have performed very professionally, been extremely responsive, and brought the most qualified and appropriate personnel to service us and our needs as a client."

— Tim Welch, PE

Utilities Director, City of Sunrise, FL

"Carollo Engineers completed evaluations of the Miami-Dade Water and Sewer Department's Hialeah and Preston WTPs followed by planning and design of a 165-mgd NF WTP located in Miami-Dade County's Northwest Wellfield. Their work on the project was exceptional."

— Rafael A. Terrero, PE

Former Assistant Director

Water Systems Operations

Miami - Dade County, FL

"Carollo offered a truly refreshing degree of innovation and client responsiveness. I am confident that if you choose Carollo for your project you will be extremely pleased with that decision"

— David Mattausch, PE

Division Director Northeast Utilities

Collier County, FL

KEY PERSONNEL:

The following Carollo key personnel will be responsible for your task orders. They provide the following experience and benefits to the City:

Liz Fujikawa,
PE, LEED AP, BCEE
Client Services Manager

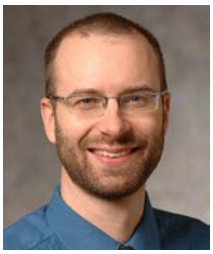
Liz has extensive civil engineering experience for south Florida clients, including: reclaim distribution and wastewater collection (City of Boynton Beach), storm water collection and pumping, lift station rehabilitation (City of Delray Beach), distribution system and collection system expansion and replacement, (City of Margate) potable water pump stations, and storage tanks (Broward County).
Llz has served as our Client Services Manager or Project Manager for all of Carollo's services to date for the City.

Scott Richards,
PE
Task Order Manager

Scott serves as Carollo's Infrastructure Group Manager for the state of Florida. Scott has spent his career working on Florida infrastructure projects, providing planning through implementation work for many municipalities. He understands that thorough communication with the City's engineering, and operations staff is key to timely project completion. Scott recently assisted with an emergency inspection of one of the City's pumps that had failed during construction startup.

Ricardo Borromeo,
PE
Lead Civil Engineer

Ricardo has pride in developing sound design solutions by working systematically and thoughtfully with the City. He brings lessons learned from the engineering, planning, and design services provided to in designing water and wastewater transmission, storm water collection systems, and pump stations. These lessons have created a system of best practices that save time in the field and incorporate proven innovative solutions.



Mark Ludwigson,
PE
Engineering

Mark has expertise in water and wastewater systems and is a trusted source for civil, mechanical, and process design. Throughout his career, he has worked on a variety of projects for the City as well as Broward County, Margate, Sunrise, Delray Beach, and North Miami Beach. These projects include several general engineering services contracts where Mark collaborated with clients to lead studies and designs, as well as standalone treatment plant and infrastructure projects.

Mark is currently completing the design and construction phase management for improvements to the City's transfer pump station at the water treatment plant.

Angelica Gregory,
PhD, PE
Pipeline Modeling

Angelica has created and updated hydraulic models, performed field testing and calibration, and assisted in with the development of capital improvement projects for utilities such as Boynton Beach and Palm Beach County.

Her experience incorporates hydraulic modeling for water, wastewater, storm water, and reclaimed water for the prioritization of pipeline rehabilitation and replacement, water quality improvements, and model conversion and expansion. Angelica has just completed the City's Water Master Plan.

We serve numerous client agencies in southeast Florida; many of whom we work for via a continuing services contract with over 90% renewal rate.

QUALIFICATIONS OF KEY PERSONNEL

NAME/FIRM/ ROLE/EXPERIENCE	EDUCATION	EXPERIENCE ON SIMILAR PROJECTS IN THE LAST 5 YEARS
Liz Fujikawa, PE LEED AP, BCEE Carollo Client Services Manager 33 Years of Experience	MSE Environmental Engineering, University of Michigan BS Chemistry, University of Illinois, Urbana-Champaign	▪ Client services manager for the City of Pompano Beach's Transfer Pump Station Improvements and Water Master Plan. ▪ Client services manager for the City of Boynton Beach Owner's Representative Services for the Design-Build of the Reclaimed Water Expansion System; Force Main Valve Assessment and Design; and Silverwood Force Main Projects. ▪ Client services manager for the City of Delray Beach Thomas Street Stormwater Pump Station Conceptual Design and Lift Station 50 Design. ▪ Client services manager for the Town of Davie Master Plan. ▪ Client services manager for the City of Margate Wastewater Collection System Expansion and East Wastewater Treatment Plant Improvements. ▪ Client services manager for Broward County's Pump Station and Storage Tank Project. ▪ Project manager for the South Central Regional Wastewater Treatment and Disposal Board Aeration Improvements and Capacity Upgrade.
Scott Richards, PE Carollo Task Order Manager 16 Years of Experience	BS Mechanical Engineering, University of Florida	▪ Project manager for the City of Boynton Beach Owner's Representative Services for the Design-Build of the Reclaimed Water Expansion System and the Silverwood Area Force Main Project. ▪ Project manager for the City of Delray Beach Thomas Street Stormwater Pump Station Conceptual Design and the Lift Station 50 Assessment and Design. ▪ Project manager for the City of Orlando Lake Ivanhoe Interceptor Rehabilitation. ▪ Project manager for the JEA, Jacksonville Broward River Crossing Reclaimed Directional Drill. ▪ Project manager for the City of Daytona Beach Lift Station No. 4 Replacement.
Ricardo Borromeo, PE Carollo Lead Civil Engineer 21 Years of Experience	MS Environmental Engineering, Rose-Hulman Institute of Technology BS Chemical Engineering, University of Notre Dame	▪ Project engineer for the City of Boynton Beach Force Main Isolation Valve Assessment and Design and the Silverwood Area Force Main Projects. ▪ Project engineer for the City of Delray Beach Thomas Street Stormwater Pump Station and the Lift Station 50 Replacement Projects. ▪ Lead engineer for the Miami-Dade County Water and Sewer Department R&R of 72-inch Sanitary Sewer Force Main Design-Build. ▪ Design engineer for the City of Marathon Mariott Lift Station.
Mark Ludwigson, PE Carollo Engineering 17 Years of Experience	MS Engineering, University of Wisconsin BS Engineering Mechanics, University of Wisconsin	▪ Project manager for Broward County's Potable Water Storage Tanks and Pump Station Projects. ▪ Project manager/engineer for Big Pine Key Wastewater Collection and Water Distribution System. ▪ Project engineer for the City of Margate West Wastewater Treatment Plant Coagulant Feed System. ▪ Project engineer for the City of Sunrise Springtree WTP Phase II Improvements and Rehabilitation.
Angelica Gregory, PE PhD Carollo Pipeline Modeling 16 Years of Experience	PhD Civil Engineering, University of Miami MS Civil and Environmental Engineering, Universidad de Los Andes, Bogota, Columbia BS Civil Engineering, Universidad de Los Andes, Bogota, Columbia	▪ Project Manager for the City of Pompano Beach Water Master Plan. ▪ Project engineer for the City of Boynton Beach Owner's Representative Services for the Progressive Design-Build of the Reclaimed System Expansion and Utilities Management Optimization Plan. ▪ Project engineer for the Town of Davie Utilities Comprehensive Master Plan and Rate Study Services. ▪ Technical advisor for the City of Daytona Beach Wastewater Master Plan.

PREVIOUS EXPERIENCE OF THE PROJECT TEAM

The personnel selected for this project team have worked on many similar projects together. Below is a table of their project experience of the last 5 years.

CLIENT	PROJECT NAME/SCOPE
WATER DISTRIBUTION PLANNING AND DESIGN	
Florida Keys Aqueduct Authority	Grassy Key Transmission Main Replacement – Corridor study, pipeline material selection evaluation, and stakeholder coordination for the design of a (250 psi) 30-inch potable water transmission main.
Manatee County	Oneco Terrace Waterline Replacement – Replacement of approx. 14,800LF of existing 2-, 4-, and 6-inch water main, including new water main routing and sequencing.
Manatee County	Pic Town Waterline Replacement – Two-phase design and rehabilitation of approx. 11,000LF of waterline, including existing 2-,4-, and 6-inch galvanized, ductile iron, PVC, and asbestos concrete waterline replacement.
Palm Beach County	Lyons Road Utility Improvements – Atlantic Avenue to Hyder PUD design, bidding, and construction for design improvements to storm water, sanitary sewer, potable, and reuse water for the Lyons Park Neighborhood.
Town of Davie	Wastewater Collection, Reclamation System and Distribution System Master Planning – Utilities comprehensive master plan, hydraulic modeling, and rate study to plan for future needs for the water, wastewater, reclaimed water conveyance, treatment, and storage systems.
RECLAIM SYSTEM PLANNING AND DESIGN	
City of Boynton Beach	Owner's Representative for Design-Build of Reclaimed Water Expansion – Hydraulic model updates, system evaluation, line sizing, route analyses for phasing options, optimization for future buildout, and phasing/connection plan for future customers.
City of Orlando	Lake Nona Reuse Main Design – Route analysis and preliminary design to replace the existing reuse main with a 12-inch ductile iron pipe to comply with water demands and City standards.
Broward County	Reclaimed Water System Modeling and Design Expansion – Construction and calibration of the County's Regional Collection System hydraulic model, development of a transient model for the system's pressure surge analysis, and condition assessment of 11 master pump stations, and CIP development.
City of Tampa	Design Services for Augmentation Project Implementation – Design of a UV treatment system, new transmission pipeline, collection system evaluation and design, and enhanced source control program to target parameters of interest based on water quality evaluation.
Town of Davie	Wastewater Collection, Reclamation System and Distribution System Master Planning – Utilities comprehensive master plan, hydraulic modeling, and rate study to plan for future needs for the water, wastewater, reclaimed water conveyance, treatment, and storage systems.
Pasco County	Land O' Lakes Odessa Valve Farms – Condition assessment of 24- and 30-inch gate valves at the County's reclaim system "valve farm" at the Land O' Lakes WWTF.
Palm Beach County	Lyons Road Utility Improvements from Atlantic Avenue to Hyder PUD – Design, bidding, and construction for design improvements to 20-inch reclaim line, storm water, sanitary sewer, potable, and reuse water for the Lyons Park Neighborhood.

WASTEWATER COLLECTION SYSTEM PLANNING AND DESIGN	
City of Boynton Beach	Master Lift Station Bypass and Optimization Modeling – Updated hydraulic model and recommended a phased plan of a short-term upgrade of MLS 317 and optimized routing of potential new force mains and identification of new pumping schemes at new and existing lift station to divert upstream flow away from MLS 317.
City of Boynton Beach	Silverwood Area Wastewater Collection System Modeling & Design – Developed and integrated an anticipated development into the existing hydraulic model. Provided data collection, model update and analysis, workshops, and capital improvement recommendations. Engineering services for data collection, field investigation, preliminary and final design, permitting assistance, bidding services, limited construction support services, and project management.
CLIENT	**PROJECT NAME/SCOPE**
Town of Davie	Wastewater Collection, Reclamation System and Distribution System Master Planning – Utilities comprehensive master plan, hydraulic modeling, and rate study to plan for future needs for the water, wastewater, reclaimed water conveyance, treatment, and storage systems.
City of Boynton Beach	Modeling for Utilties Master Plan – Hydraulic modeling using InfoSWMM for the City's wastewater collection system using existing GIS data of over 56 miles of pressurized force mains and 18 lift station, including six master lift stations.
Manatee County	Wastewater Collection System Modeling & Improvements Assessment – SewerGEMS hydraulic modeling and assessment of the southeast, north, and southwest service area WWCS with a combined total of over 300 miles of pressurized force mains, 95 miles of gravity pipe, and over 550 lift stations.
Toho Water Authority	Force Main Replacement for Lift Station #57 – Evaluation of rehabilitation alternatives of the existing pipe, including full replacement or use of cured-in-place pipe (CIPP) liner. Also, hydraulic analysis to properly size the new force main and maintained full wastewater flow without service interruption through project completion.
City of Margate	Wastewater System Collection Expansion – Proactive permitting plan, design, and construction of over 24,000LF of water main (up to 12 inches), over 13,000LF of force main (up to 20 inches), and 14 aerial crossing. Included horizon direction drilling of a 12-inch force main under a high traffic volume highway.
City of North Miami Beach	Sunshine Force Main Replacement – New 6-inch force main for over 2,500LF with regulatory coordination to integrate engineering and financial planning functions into one seamless management tool.
City of Boynton Beach	Assessment & Design of Force Main Isolation Valves for City-Wide Redundancy – Operational methodology, analysis of flow routes/patterns and hydraulic limits, DIP force main investigation, location recommendation for isolation valves, and condition assessment. Design, permitting, and construction management for the installation of six isolation valves.
Town of Longboat Key	Subaqueous Force Main Replacement Preliminary Design & Permitting – Feasibility and routing analysis and preliminary conceptual design based on factors of costs, permitting, environmental, and ROW/easement availability.
City of Sunrise	Pine Island Force Main Replacement – Pipeline replacement study, design, and construction. Pipe within a pipe installation to minimize construction costs, and optimization of pipeline sizing to minimize energy use and potential bottlenecks.
City of Pompano Beach	Master Lift Station 21 HVAC Improvements – Investigated and designed a solution of a new split DX unit with new/existing ductwork to meet electrical room and temperature needs.
City of Sunrise	Inverrary Bridge Force Main Relocation – Hydraulic modeling, design, permitting, bidding, and construction of the relocation of an existing 12-inch sewer force main with new relocated pipeline, including identification of an aerial canal crossing and future pipeline.

STORM WATER SYSTEM ASSESSMENT AND DESIGN	
City of Boynton Beach	Modeling and Design of Storm Water Collection Systems for Five Neighborhoods – Assessment and conceptual design of improvements to alleviate storm water flooding in five neighborhoods in the City. Conditions were challenging due to the high canal water and groundwater levels because of proximity to the ocean and the congestion of the neighborhood.
CLIENT	**PROJECT NAME/SCOPE**
City of Delray Beach	Thomas Street Storm Water Pump Station Design – Design included data collection, pump station evaluation, and design for reliability and redundancy improvements for the pump station to address both existing flooding and the 30-year sea level rise. The pump station has a very small site in between two houses—a small wetwell, noise control, and minimizing visual impacts were critical.
Broward County	Storm Water System Design for Three District Sites – Design of new ground storage tanks and high-services pump stations for three different Districts in the County required new storm water collection systems and permitting. Work included new detention ponds and stormwater collection systems on congested sites.
South Florida Water Management District	S-470 Storm Water Reservoir Pump Station – Design coordination, input, and review for the 1500-cfs unmanned pump station to convey storm water flows from the Caloosahatchee River to the C-43 above-ground reservoir and improvements and slope stabilization the Townsend Canal.
South Florida Water Management District	S-476 Storm Water Reservoir Pump Station – Pump station design with site improvements and grading, intake channel armoring design, and infrastructure for SCADA and communications systems.
South Florida Water Management District	S-479 Storm Water Reservoir Pump Station – Planning and detailed design using hydraulic modeling and one- and three-dimensional computational fluid dynamic analyses for sizing and designing each structure.
South Florida Water Management District	SL8 Storm Water Reservoir Intake Structure & Pump Station – Planning, conceptual design, and owner's advisor services for the 450-cfs unmanned pump station compromised of six-800 HP electrical submersible vertical turbine pumps with variable frequency drives.
EMERGENCY RESPONSE/CONDITION ASSESSMENTS FOR PIPELINES	
Town of Longboat Key	Bride Water Main – Emergency condition assessment and recommendation for repair of a deteriorated 16-inch water main over a bridge over a salt water body.
City of Boynton Beach	Force Main Valve Project – Work included determination of existing condition of a 36-inch DIP force main that was subjected to severe hydrogen sulfide exposure.
City of Boynton Beach	Brennan WTP Header Condition Assessment – Emergency assessment, condition determination, and repair recommendations for the City's main discharge header to the entire City water supply (36-inch DIP pipeline).
City of Boynton Beach	Condition Assessment for Utilities Master Plan – Condition assessment for the City's wastewater collection system of over 56 miles of pressurized force mains and 18 lift station, including six master lift stations.
City of Oviedo	Lift Station 20 – Inspection, condition determination, and repair recommendations for a 16-inch force main.
Hillsborough County	WRF Headworks Incoming Pipeline – Assessed fittings and pipe condition for the headworks influent 24 to 36-inch pipe when a failure occurred. Also recommended repair of other fittings were also nearing failure.
Hillsborough County	Water Avenue FM Condition Assessment – Assessed and recommended remediation alternatives for a 24-inch pipeline at accessible locations over a four-mile stretch of ductile iron pipe with known historical failures.

SUBCONSULTANTS

Carollo has selected an exceptional lineup of subconsultants to complement the technical expertise of our staff. We have provided brief firm profiles for each subconsultant, demonstrating the expertise each brings to the Team.

GAMBOA ENGINEERS, LLC | ELECTRICAL ENGINEERING: CERTIFIED MBE

Gamboa Engineers, LLC is a consulting firm specialized in planning, designing, and engineering support during construction of electrical power distribution, process controls, and instrumentation systems with focus in support of water treatment/distribution facilities and wastewater treatment facilities. The firm also has a broad range of experience in system integration and designing SCADA system for monitoring and control of geographically dispersed water and wastewater pumping facilities.

Gamboa Engineers provides a safe, economical, and functional design, satisfying the customers needs on time and on budget. The firm has strong analysis and design capabilities with a broad range of experience and in-depth knowledge of construction and maintenance.

Gamboa Engineers has been working with Carollo on City projects for the past nine years, including: Electrical Master Plan for the Water Treatment Plant; Transfer Pump Station Improvements; Master Lift Station HVAC Improvements; and Owner's Representative for Energy Improvements at the Water Treatment Plant.

DK ARCHITECTS | ARCHITECTURE, SITE PLAN, PERMITTING: CERTIFIED SBE AND LOCAL BUSINESS

DK Architects is an architecture design firm located in Pompano Beach. They have been in Florida for 40 years, and, because of this and their deep understanding of local needs, they are one of the most trusted firms in the area. DK Architects provides a wide range of services, including fast tracking, value engineering, construction management, prototype development, and project feasibility. Additionally, their architectural firm can also provide inspections, windstorm certifications, and site assessments.

DK takes great pride in its history of collaboration with the City of Pompano Beach, including Continuing Services Contracts with both the City and the Pompano Beach CRA, successfully completing projects, such as Briny Avenue Streetscape and Undergrounding, BaCA and Ali Cultural Center adaptive reuses and new construction.

COMPASS POINT SURVEYORS, PL | SURVEYING: CERTIFIED SBE AND LOCAL BUSINESS

Compass Point Surveyors is a modern survey firm that uses the latest technology to provide their clients with the best service in the most efficient manner possible. Established in 2006, Compass Point provides surveying services from the Florida Keys north to the City of Jupiter. Field crews regularly use GPS receivers, robotic total stations, and data collectors linked to their office staff with cell phone WiFi. They use the latest CAD software and surveying modules to produce accurate and encompassing plans, digital files, and CAD drawings.

Compass Point is experienced in preparing boundary, ALTA, title, topographic, construction, route, design, and quantity surveys in addition to preparing legal descriptions and elevation certificates. Their team has almost 80 years of field and office surveying experience certificates. Their team has almost 80 years of field and office surveying experience.

QUEST ENGINEERING SERVICES & TESTING | GEOTECHNICAL: CERTIFIED MBE AND LOCAL BUSINESS

Quest Engineering Services & Testing, Inc. (QuEST), located in Pompano Beach, was founded in 1998 by R.N. Sailappan, P.E. Prior to that, R.N. was the branch manager of a large nation-wide engineering firm in Fort Lauderdale. QuEST was established to provide the complex engineering services and capabilities of a large firm, but with the personalized service and attention to detail of a small firm.

QuEST provides geotechnical services, including investigation of subsurface conditions and materials, assessing risks posed by site conditions, design of earthworks and structural foundations, and monitoring of site conditions, and earthwork and foundation construction. They have successfully completed large commercial, educational, and residential projects as well as municipal projects throughout South Florida.

CURRENT AND PROJECTED WORKLOAD

WORKLOAD/AVAILABILITY OF OUR FIRM

The key team members identified for your project will be supported by 24 staff in our local offices backed by 1,100 staff nationwide. Our offices are all networked and work sharing is easily and routinely accomplished.

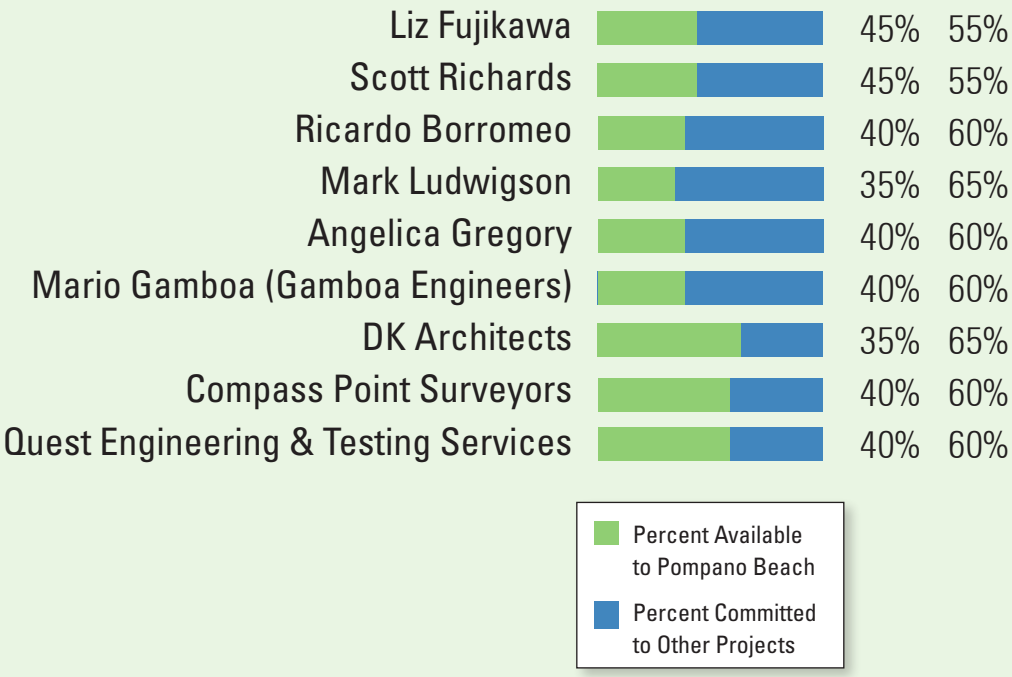
Our firm-wide workload that is committed to active and pending projects typically averages about 65 percent. As a result, we have more than ample capacity to respond to our client's needs regardless of the size and nature of the work.

We are confident that our key team members and firm have the capacity and resources to deliver your projects within your desired time frame.

WORKLOAD/AVAILABILITY OF OUR PERSONNEL

The graphic below summarizes our key staff member's availability to participate on your task orders. The level of availability indicated in this graph shows that staff have ample capacity for your work and that we can hit the ground running.

EXISTING AND PROJECTED WORKLOADS/PERCENTAGE OF AVAILABILITY



• *SECTION 7: RESUMES OF KEY PERSONNEL*

Resumes of Key Personnel

Each team member has demonstrated experience that comes from years of practice in their respective disciplines, and more importantly, each brings creativity and drive to find out-of-the-box solutions for your needs.

On the following pages, we have provided resumes for key personnel for both Carollo (the prime) and our subconsultants.

We have provided mini-bios for Carollo's key team members and brief descriptions of our subconsultants' firm profiles in the Organizational Chart section, as well.

Elizabeth Fujikawa, P.E., BCEE

Elizabeth Fujikawa, a vice president with Carollo Engineers, has more than 33 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).

Education

MSE Environmental Engineering, University of Michigan, 1986

BS Chemistry, University of Illinois, Urbana-Champaign, 1984

Licenses

Professional Engineer, Florida, Illinois, Wisconsin

Civil Engineer, Delaware

Certification

LEED Accredited Professional, Green Building Certification Institute, 2006

Professional Affiliations

American Water Works Association

International Ozone Association

Relevant Experience

→ Client service manager for the Pompano Beach, Florida, Concrete Blending Study. Evaluation of the blending of demineralized concrete with reclaimed water prior to distribution to City reuse customers. The study considered the resulting water quality of the blended streams with respect to its suitability for use as a source of irrigation water as well as compliance with groundwater quality requirements associated with the City's reuse system.

→ Client service manager for the City of Pompano Beach, Florida, Concentrate Disposal project. Alternatives for disposal of membrane concentrate were developed and compared, including introducing concentrate into a reclaimed water plant. A new concentrate disposal pipeline was designed and permitted. Construction was completed in November 2017.

→ Project manager for the Pompano Beach, Florida, Electrical System Master Plan for the water treatment plant. 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.

→ Project manager for an evaluation of long range treatment by Lime Softening versus Nanofiltration for the City of Pompano Beach, Florida. 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.

→ Client service manager for the East Wastewater Treatment Plant for the City of Margate, Florida. Project included the conversion of the aeration system to IFAS for an innovative increase in capacity; RAS/WAS pump station; and a secondary clarifier.

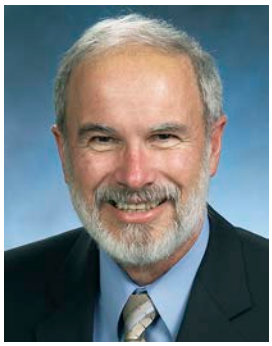
→ Project manager for the Progressive Design Build of the Aeration System Improvements for the South Central Regional Wastewater Treatment and Disposal Board, Florida. The project included increasing the capacity of the plant from 24 to 30 mgd; increasing energy efficiency by using single stage centrifugal blowers and increasing the plant sidewater depth.

→ Client service manager for the Broward County Potable Water Storage Tanks, Pumping Systems, and Chemical Systems. This project includes the assessment, design and construction phase management of new ground storage tanks, new high service pump stations, and new sodium hypochlorite and ammonia feed and storage systems for disinfection. These improvements will be implemented at four locations within the County.

→ Client service manager for the Utilities Management Optimization Project for the City of Boynton Beach, Florida. Project included reclaim, wastewater, stormwater, and water modeling. A 20-year capital improvements program (CIP) was developed along with a unique dashboard CIP program that also forecasted resulting rates.

→ Client service manager for the Master Plan for the City of Davie, Florida. Project included modeling of reclamation distribution, wastewater collection and water distribution systems.

→ Client service manager for the conceptual design of the Thomas Street Stormwater pump station for the City of Delray Beach, Florida. Project included hydraulic modeling and the sizing and layout of the 80,000 gpm replacement pump station.



Michael A. Fleury, P.E., BCEE

Mike Fleury, in his 47 years of experience, directed facility planning, preparation of studies and designs, value engineering and services during and after construction on a number of civil engineering projects, including new facilities, additions, condition assessments/rehabilitation of aqueducts and interceptors, renovations to existing wastewater treatment plants and water reclamation facilities, interceptor and transmission main systems, water storage and pumping facilities. He is considered a national expert in pipelines and related hydraulics having served on over 30 large value engineering studies across the United States.

Education

BSCE Civil Engineering, University of Vermont, 1972

Licenses

Civil Engineer, Nevada

Professional Engineer, Texas, Florida, Colorado, Arizona

Certification

Certified, Confined Space Entry and Inspection

Professional Affiliations

American Public Works Association Member

American Society of Civil Engineers Member

American Academy of Environmental Engineers, Board Certified Environmental Engineer

American Water Works Association Member

California Water Environment Association Wastewater Collections Committee

SAVE International

Water Environment Federation (Reuse Committee Member)

Western Coalition of Arid States

Relevant Experience

→ Project manager for the Indian River, Florida, North County Force Main Condition Assessment. This project consisted of a Phase 1 condition assessment of the 8-mile 24-inch North County Force Main, including ultrasonic thickness testing at air valve sites.

→ Technical advisor for the Lake Nona Reclaimed Water Main System Feasibility Study, Conceptual Design, and Design services for the City of Orlando, Florida. Carollo performed a route analysis, preliminary design, and 90-percent design services to replace the existing reclaimed water main in an established neighborhood. The report identified replacing the existing main with a 12-inch ductile iron pipe to comply with the City Engineering Standards and provide adequate reclaimed water demands. To minimize the disturbance along the environmentally sensitive route, the majority of the installation is to be performed using the horizontal directional drilling (HDD) trenchless technology.

→ Technical advisor for the Town of Longboat Key, Florida, Forcemain Design Criteria - Phase 1 20-inch Force main replacement project using HDD below Sarasota Bay. Carollo worked with the Town to provide direction for the delivery of the project by identifying and understanding measurable project goals.

→ Lead quality manager/technical advisor for the Clark County Water Reclamation District's Paradise Whitney Interceptor (PWI), Package No. 2 final design project in Las Vegas, Nevada. The PWI project will relieve existing capacity deficiencies and improve hydraulic operating conditions for sections of the existing interceptors as well as provide a new 13-mile cross town interceptor capable of conveying flows from the southwestern portion of the Las Vegas Valley Service Area to the District's wastewater treatment plant on East Flamingo road.

→ Project manager for the condition assessment and rehabilitation pre-design for 26 miles of 21 to 84-inch aqueduct pipeline for the Weber Basin Water Conservancy District, Utah. Risk of failure was evaluated in terms of criticality and vulnerability. Multiple technologies for internal and external pipe inspection were evaluated and utilized to determine pipe condition and risk of failure. Internal inspection technologies utilized included non-tethered leak detection, high-speed digital 3D video scanning, sonar, CCTV, in-pipe ground penetrating radar, and personnel-entry pipe inspection. External inspection included pH testing, alkalinity testing, chloride testing, sulfate testing, hammer sounding, electrical continuity testing, and ultrasonic thickness testing. Pressure and flow testing was also conducted to calibrate two existing Venturi flow meters and to validate and calibrate the hydraulic model. Carollo provided recommendations for pipeline rehabilitation and repair.

→ Project manager for the Condition Assessment and Emergency Rehabilitation Design and Construction Project for Victor Valley Wastewater Reclamation Authority, Victorville, California. Carollo investigated 30,000 linear feet of a 27-inch interceptor consisting of vitrified clay pipe (VCP) and steel pipe using CCT and sonar technology. The investigation revealed a failed lining within a steel pipe beneath a three-track railroad spur that was installed without a casing sleeve. Carollo prepared a fast-tracked cured-in-place pipe (CIPP) design based on E-80 loading, and the project was successfully constructed with an ultraviolet (UV) cured CIPP installation.

Robert S. Cushing, Ph.D., P.E., BCEE

Dr. Robert Cushing is senior vice president with Carollo Engineers. He has 30 years of experience in applied environmental science and engineering. Throughout his career, he has coupled fundamental concepts with sound engineering practices to provide creative, innovative, and enduring solutions to challenges faced by water and wastewater utilities. He has been responsible for numerous successful treatment facility planning and design projects, as well as studies and programs for improving distribution system water quality.

Dr. Cushing has practiced nationally, providing service to a broad cross-section of the industry, from some of the largest and most visible utilities (e.g., New York City and Washington, D.C.) to very small applications with important and unique issues (e.g. Ouray National Fish Hatchery, Utah). He has also been responsible for introducing and applying advanced technologies, most notably UV disinfection, biological treatment, ion exchange, and membrane filtration for potable water treatment.

Dr. Cushing is an internationally recognized expert in water quality and treatment having authored over 100 publications and presentations.

Education

PhD Civil Engineering, University of Texas, Austin, 1993

MS Civil Engineering, University of Texas, Austin, 1990

BS Petroleum Engineering, University of Texas, Austin, 1984

Licenses

Professional Engineer, Florida, Illinois, North Carolina, South Carolina, Virginia

Professional Affiliations

American Academy of Environmental Engineers, Board Certified Environmental Engineer

American Water Works Association, (AWWA) Florida Section AWWA

- Founding Chair Region 10

Founding Director International Ultraviolet Association

Water Environment Federation

Reviewer for: ASCE Journal of Environmental Engineering
Environmental Science and Technology
Journal of the American Waterworks Association
Water Research

Relevant Experience

→ Principal-in-charge for the City of Palm Coast, Florida, Nanofiltration Water Treatment Plant expansion from 2.5 to 9.6-mgd. Florida Water Services selected Carollo and Harn R/O Systems as the design build team to design, permit, and construct the expansion in a challenging schedule of only 13 months. Design build services included the re-design of existing nanofiltration equipment and chemical feed systems, the addition of four additional membrane trains, and two additional degasification towers. Re-design of the existing process saves the owner approximately $100,000 per year in Operations and Maintenance costs by taking advantage of new technology that was not available when the plant was originally constructed in 1992.

→ Technical advisor for the City of Sunrise, Florida, Sawgrass Water Treatment Plant Ion Exchange project. The treatment scheme conserves water and lowers cost relative to utilizing NF membrane treatment, which also increases the overall facility water recovery. The potable water is also improved as the blended water is higher in hardness and alkalinity, which will result in better water quality and minimize the corrosion potential in the distribution system.

→ Technical advisor for the City of Boynton Beach, Florida, MIEX System. This project involved a new organics removal MIEX system for Western Wellfield water with the use of excess treatment capacity for hardness removal at the EWTP. Western Wellfield water will be pumped to the East WTP, where the new 16-mgd MIEX system (expandable to 20-mgd) will utilize a proprietary anion exchange resin to remove organics. This MIEX treated water will then be treated in the softening basins, as well as partially bypassed around the softeners to ultimately increase the EWTP capacity.

→ Technical advisor for the City of Boynton Beach, Florida, Utilities Management Optimization Plan. This project consists of developing a model to calculate real time rates, CIP (budget, cash flow, expenditures), budget status, provide GIS access, and modeling of water, sewer, stormwater, and reuse. Model should also answer whether to expand, repair, or upgrade due to new regulations, and what the cost impact will be.

→ Principal-in-charge of the 1.4-mgd expansion to the Sarasota County, Florida, Central County Water Reclamation Facility Expansion. Project included a preliminary design study and final design, including identification of permitting requirements, design basis, site considerations, electrical distribution, instrumentation and controls, and implementation issues for the expansion.

M. Scott Richards, P.E.

Scott Richards has 16 years of experience specializing in pump stations and pipeline systems, including reclaimed water transmission/distribution and wastewater collection systems. Mr. Richards is a hands-on engineer who takes pride in listening to and understanding his client's needs, in order to produce quality product.

Education

BS Mechanical Engineering, University of Florida, Florida, 2002

Licenses

Professional Engineer, Florida

Professional Affiliations

American Water Works Association

Florida Water Environmental Association

Relevant Experience

→ Project manager for owner's representative services for the City of Boynton Beach, Florida, Progressive Design Build of the Reclaimed Water Expansion System. Project includes customer procurement; system modeling and optimization; routing; and phasing.

→ Project manager for the Town of Longboat Key, Florida, Main Bridge Water Main Condition Assessment. Project included condition assessment of water supply main suspended on the main bridge. The crossing consists of approximately 2000 linear feet of 16-inch DIP pipeline using ultra-sonic thickness measurement equipment. Recommendations included options for recoating of the pipeline to extend its life.

→ Project engineer for US-441 Stormwater System Evaluation and Design Improvements, Lake City, Florida. Following multiple flood events which led to significant flooding of US441, there was a specific need to investigate and improve the existing area stormwater system. The team evaluated the current stormwater collection system with hydraulic models, including system attenuation with multiple flood stages and pond capacities. The existing pump station was then evaluated for pumping capacity and downstream pipeline implications. The report recommended overall system hydraulic improvements, along with upgrade to the pumping capacity. Pump improvements where designed to retrofit and expand upon the existing station, along with backup power options. Responsibilities included evaluation and design improvements.

→ Project engineer for Stormwater Pump Station and Utility Improvements, City of Jacksonville Beach, Florida. As the City of Jacksonville beach invests to improve its beachside community, multiple areas required overall utility improvements, including water and stormwater system upgrades. The stormwater system consists of multiple underground vaults which collect water for pumping. During storm events, the pump system could not manage the incoming flow. A detailed pump station analysis was completed including hydraulic modeling, piping arrangement, detailed inspection of the existing underground structure, and electrical/generator capacity. The design recommended upgraded pump capacities. Three manufacturers were considered with a detailed analysis to confirm proper fitment of increased pump size, while allowing for maintenance accessibility. Additional modifications included adjustments to the downstream pipe connection to improve hydraulics, flow meters, electrical/SCADA, a new generator and rehabilitation of the structure.

→ Project Engineer for Stormwater System Alternatives Analysis, Destin, FL – Following multiple flooding events which commonly left Streets underwater for extended periods, the City desired to improve the stormwater conveyance system. The current system was gravity based, but storms commonly resulted in high tides which backed up the system. This analysis investigated alternatives to improve the system. Evaluation included hydraulic modeling of multiple storm scenarios, field investigation, and multiple conveyance system scenarios. These considered revisions to the gravity system, the addition of a reservoir, and the addition of a pump station. Recommendations included a combination of these, with a pump station being the focal pump to overcome the high tidal events. Responsibilities included evaluation and design improvements.

→ Project manager for the Utilities and Stormwater Master Plan, City of Coconut Creek, Florida. The team provided master planning services for the City of Coconut Creek's utility and stormwater system. The

M. Scott Richards, P.E.

Awards

Florida Section AWWA Region III Volunteer of the year, 2011

Florida Section AWWA Public Affairs Council Chair's Award for Distinguished Service, 2013

Other Accomplishments

Open for Quote

water and wastewater master planning services include hydraulic analysis, growth analysis, map updating, GIS, hydraulic models development, participation in strategic planning meetings, feasibility analysis, capital improvement planning, and flow trending. Stormwater planning includes regulatory and policy planning, and water quality assessment which will identify current and impending regulations for flood control and surface water quality, inefficiencies, and operational concerns. The master plan identifies recommended improvements for water, wastewater, and stormwater for the City of Coconut Creek Utility and Engineering Department. Responsibilities included the management of the hydraulic modeling, operational scenarios, field data, and master planning.

→ Project manager for the City of Orlando, Florida, Lake Ivanhoe Interceptor Rehabilitation. Project included design, bid, and construction services for rehabilitation of the Lake Ivanhoe area of the City's wastewater collection system, including 8-inch through 18-inch sewers. Pipelines were selected to be CIPP lined, and all manholes were repaired and epoxy coated.

→ Project engineer for the Florida Keys Aqueduct Authority (FKAA), Florida, Marathon Booster Station Improvements. Project included a high-pressure transmission system; rehabilitation of the booster station, including piping, valves, pumps, and permanent in-line diesel driven backup pumps plus electrical and I&C improvements; diesel fuel storage systems; and selection of new materials/coatings considering challenging seawater environment.

→ Project manager for the JEA, Florida, Broward River Crossing Reclaimed Directional Drill. Project included installation of a reclaimed water main crossing under the Broward River. Crossing consists of approximately 3000 linear feet of 30-inch HDPE pipeline, installed via directional drill under the river and two railroad crossings.

→ Project manager for the City of Daytona Beach Lift Station 4. Project included replacement of Lift Station No 4, including construction of new lift station. The new duplex pump station included a permanent diesel backup pump, a force main extension, replacement gravity sewer, and associated roadway repair.

→ Project manager for the Nassau County, Florida, Lift Stations No. 1 and 3 Replacement. Project included replacement of Lift Stations No. 1 (triplex) and No. 3 (duplex) requiring revaluation of the sewer basin area, system hydraulics, temporary bypass planning, and complete design of two replacement stations including electrical, structural, site work with fencing, and landscape.

→ Project engineer for Seminole Tribe's Hard Rock Casino and Hollywood Reservation, Florida. Projects included sewer and water distribution system improvements for several utility projects (Hard Rock Loop, 64th Avenue water line replacement, main lift station, sewer improvements along Stirling Rd., water and sewer improvements along Sheridan St. and 60th Ave and the Okalee Village sewer system). Water main included multiple directional drill and jack and bore crossings.

→ Project manager for the City of Winter Haven, Florida, Multi-modal Facility Master Plan Update. The project involved water, wastewater and reclaimed master planning services for the City of Winter Haven Utility Service Area (COWUSA) to include a proposed new multi-modal property, which included a large industrial area and presented a significant expansion to its south service area. Recommendations included a significant expansion to the water transmission system, the wastewater collection system and multiple wastewater pump stations.

→ Project manager for various Florida Governmental Utility Authority, Florida, Bondholders Reports, 2014-2017. This included providing numerous annual report to bondholders to assess the general physical condition (as applicable) and sufficiency of, water and wastewater treatment facilities, distribution and collection systems, pumping facilities, and planned future improvements.

Ricardo G. Borromeo, P.E.

Ricardo Borromeo has 21 years of experience in engineering, planning, and design of water and wastewater treatment plants, water and wastewater transmission, storm water, pump stations, and disposal fields.

Education

MS Environmental Engineering, Rose-Hulman Institute of Technology, 1999

BS Chemical Engineering, University of Notre Dame, 1996

Licenses

Professional Engineer, Florida, Indiana

Chemical Engineer, Philippines

Professional Affiliations

Any??

Relevant Experience

→ Project engineer for the City of Boynton Beach, Florida, Force Main Isolation Valve project. Project includes modeling to determine optimum valve locations and the design and construction management of 36-inch plug valves that are in vaults for access and maintenance.

→ Project engineer for the City of Delray Beach, Florida, Lift Station 50 replacement project. Work includes the capacity assessment and design of the lift station.

→ Project engineer for the City of Miami Beach, Florida, Sunset Harbour Pump Station No. 3. Design-build. Project included a stormwater collection system, pump station, force main, and outfall structure to convey stormwater to Biscayne Bay. The submersible pump station was designed for 10 mgd and required an elevated control panel and access platform to keep the panel above flood elevation. The pump station discharge consisted of approximately 500 lf of 16-inch PVC force main. (Professional Services – ongoing, as of Dec 2014).

→ Lead engineer for the Miami-Dade County Water and Sewer Department, Florida, Replacement/Rehabilitation of 72-inch Sanitary Sewer Force Main Design Build on NW/NE 159th Street from NW 17th Avenue & NE 10th Avenue. Responsible for design efforts for an emergency design-build project for WASD to replace/rehabilitate more than 3 miles of 72-inch PCCP sanitary sewer force main. Design included 8- and 16-inch temporary bypass piping to ensure that wastewater service was maintained for the three municipalities that share the force main during construction. In addition, more than ¼-mile of new 60-inch force main was constructed to connect the areas of HDPE sliplined 72-inch pipe. Wade Trim provided design, permitting, and construction support services for the design-build project.

→ Lead design engineer for Sarasota County, Florida, US 41 Venice Bypass Water Main Replacement. Project involved replacement of 4- to 10-inch–diameter asbestos cement water mains with a single 12-inch–diameter PVC water main. The water main replacement extended nearly 1.5 miles through a commercial corridor and included replacement of water services and hydrants along the route. The water main was designed in conjunction with an FDOT roadway and drainage improvement project.

→ Design engineer for the City of Marathon, Florida, Marriott Lift Station. Work included a wastewater lift station and force main extending approximately 5,700 feet east along Overseas Highway from the hotel to the Area 3 WWTP. Although there is an existing 4-inch force main and a vacuum collection system in Overseas Highway near the Marriott site, the existing infrastructure cannot handle the additional flow from the Marriott. Recent studies have shown the vacuum system is above capacity. The existing force main is stressed due to a high-pressure pump station connected to the force main that generally has low-pressure grinder pump stations.

→ Lead technical professional for the City of Crystal River, Citrus County, Florida, Reclaimed Water Project. Project involves the design of a reclaimed water transmission system (8 miles of 16-inch piping) from the City's wastewater spray field to the Progress Energy Crystal River Energy Complex.

→ Lead technical professional for NEXLube, LLC, Tampa, Florida, Reclaimed Water & Wastewater Pipeline Conceptual Study. NexLube LLC is planning on constructing a 24 million gallon per year used oil re-refining facility. This project involved a conceptual reclaimed water and wastewater pipeline study from the proposed NexLube facility to the City of Tampa's Howard F. Curren WWTP.

Kunal Nayee, P.E.

Kunal Nayee has 7 years of experience in the water utility field. While in college, he studied environmental engineering with a focus on water/wastewater treatment and hydraulic engineering. Mr. Nayee's consulting experience ranges from GIS, permit writing, potable design, gravity design and data acquisition. His focus is working with municipalities on asset management studies as well as utility design. Mr. Nayee's projects include hydraulic modeling for city- and county-level systems, asset management studies, and potable water system designs. Mr. Nayee's project experience includes playing a central role in hydraulic water and wastewater models for a city-level system, asset management plan using GIS techniques for criticality modeling for a county-level forcemain system, and a potable water system replacement design for a city CIP. Along with hydraulic modeling and asset management, Mr. Nayee has worked extensively on permit writing and application preparation for utilities and private clients.

Education

M.S., Water Resources Engineering, University of Central Florida, 2016

B.S., Environmental Engineering, University of Central Florida, 2012

Licenses

Professional Engineer, Florida

Professional Affiliations

Florida Water Environment Association

- Member

American Water Works Association, Florida Section Past Region III Chair

Relevant Experience

→ Project engineer for Polk County Condition Assessment. Worked on field data collection of the County's water treatment plants. Collection efforts includes travel to all 38 water plants owned and operated by the County and coordinate collection of all electrical, structural, HVAC and mechanical assets with the aid of subconsultants. The results of this project will be included in the County's CMMS system moving forward for asset management and ongoing maintenance and repair.

→ Project engineer for the Force Main and Gravity Sewer System Condition Assessment and Rehabilitation Plan Development, Seminole County, Florida. Supporting this assessment and development of a rehabilitation plan specific to Seminole County Environmental Services Department below ground infrastructure needs for force mains, air release valves, gravity sewers, and manholes. Created forcemain criticality geoprocessing model to access assets using an ArcGIS interface. The project was completed in 2015.

→ Project engineer for the Daytona Beach Wastewater Master Plan. Aided in developing the hydraulic model by creating the gravity sewer network based on data available from the City. Conducted a lift station assessment methodology for 20 lift stations within the City service area and developed a risk prioritization and cost of replacement. Tasks include overseeing data collection; population, flow, and diurnal pattern analysis; field testing; assessment of key infrastructure, including the collection system and wastewater treatment facilities; model development; calibration for dry and wet weather scenarios; and overall system analysis for existing and future conditions.

→ Project engineer, for Manatee County Gravity Collection System Desktop Evaluation, R&R Prioritzation, and Asset Management Plan. Conducted a desktop evaluation for the gravity collection system and prioritized rehabilitation and replacement of the collection infrastructure. Using the County's as-builts, GIS , SCADA, CCTV condition coding data and field knowledge a risk geoprocessing model was developed and ran on the County data the results of which were incorporated into the County maintenance program and CIP planning for capital improvement projects.

→ Lead project engineer, for the City of Daytona Beach I&I study, As part of the permit requirement for the Bethune Point WRF, the CITY needed to conduct to an Inflow and Infiltration (I&I) Study, related to the Bethune Point WRF collection system. This study evaluated the I&I within the Bethune Point WRF service area in order to establish Capital Improvement Plan (CIP) recommendations for projects to decrease I&I in the collection system. In the course of this project water quality data collection plans were created, gravity flow meters placed in service and a Bethune Point service wide assessment of infiltration and inflow.

Samuel O. Darkwah, Ph.D., P.E.

Dr. Sam Darkwah has 28 years of experience in water resources engineering and planning, including surface and groundwater hydrology and hydraulics, water resources planning, surface water and groundwater computer simulation modeling, surface water and groundwater quality, flood plain management, municipal wastewater and recycled water discharge impacts in receiving waters, and water supply and flood control facility designs.

He has worked on projects involving combined sewer overflow (CSO); sanitary sewer overflows; point and nonpoint source evaluations; infiltration/inflow and sanitary sewer evaluation surveys; water quality issues, particularly those relating to surface water and sediment quality monitoring and assessment; storm water monitoring and management; watershed-based analysis; and water quality impacts assessment.

Dr. Darkwah's work includes a wide range of watersheds, receiving water, and reservoir systems. He is well versed in the use of a wide variety of models for hydraulic design of drainage systems and facilities, flood forecasting, non-point pollution analysis, water/wastewater analysis, and erosion and sedimentation assessment. These include HEC-1, HEC-GeoHMS, HEC-HMS, HEC-2, HEC-RAS, HEC-GeoRAS, CCHE2D, InfoSWMM, CE-QUAL-W2, XP-SWMM, InfoWorks, InfoNet, Mike-SWMM, MOUSE, QUAL 2K, and HSPF.

In the area of GIS development, integration, and customization, his knowledge encompasses Arc/Info and ArcView. He is familiar with a wide range of data formats and public domain datasets. Finally, in the area of processing and analysis of remotely sensed datasets, he is adept in processing and classifying satellite imageries using tools, including ERDAS Imagine, GIS, and other proprietary software.

Education

PhD Civil Engineering, Kagoshima University, Japan, 1998

MS Civil Engineering, Miyazaki University, Miyazaki, Japan, 1995

BS Civil Engineering, University of Science and Technology, Kumasi, Ghana, 1987

Licenses

Professional Engineer, Kansas, Missouri

Professional Affiliations

American Society of Civil Engineers

American Water Works Association

Japanese Society of Civil Engineers

Remote Sensing Society of Japan

Relevant Experience

→ Modeler/BMP evaluator for the City of Boynton Beach, Florida, Utilities Management Optimization Plan. This project consisted of developing a model to calculate real time rates, CIP (budget, cash flow, expenditures), budget status, provide GIS access, and modeling of water, sewer, stormwater, and reuse. Model should also answer whether to expand, repair, or upgrade due to new regulations, and what the cost impact will be.

→ Technical advisor for the City of Punta Gorda, Florida wastewater master plan. Provided guidance to a team assembling and calibrating the H2OMAP® Sewer hydraulic model to evaluate all lift stations in the city's collections system.

→ Project engineer on the Sanitary and Storm Water Master Plan for the City of Cottage Grove, Oregon. Developed and calibrated EPA SWMM 5.0 model, and applied the model to historic meteorological data to simulate historic flows and water surface profiles. Tasks performed for the hydrologic and hydraulic analyses included peak discharge estimation, 100-year floodplain delineation, roadside ditch and culvert sizing, and detention pond location, sizing and design, and CIP development.

→ Technical advisor on the City of Punta Gorda, Florida water master plan. Provided guidance to a team assembling and calibrating the H2OMAP® Water hydraulic model to evaluate all the existing water distribution system.

→ Project engineer on the City of Wentzville Water Reclamation Center (WRC) Water Quality Analysis. Developed and calibrated Qual2K model to determine acceptable limits for dissolved oxygen (DO) and ammonia loadings from the WRC to protect water quality in the McCoy Creek.

→ Project engineer on the City of Wentzville WRC hydrologic and hydraulic flood study. Performed detailed hydrologic and hydraulic investigations to evaluate the floodplain space requirements needed for expansion of the WWTP.

Mark N. Ludwigson, P.E.

Mark Ludwigson has 17 years of engineering experience, working exclusively in the water industry as an engineer for projects all over the country and as the lead engineer for a prominent circular clarifier manufacturer. With his passion for water and wastewater systems, Mr. Ludwigson has led to the success of a variety of water projects, whether as project manager or project engineer. He is trusted for civil, mechanical, and process design discipline work.

Education

MS Engineering, University of Wisconsin, Milwaukee, 2010

BS Engineering Mechanics (Structural Analysis Major), University of Wisconsin, Madison, 2001

Licenses

Professional Engineer, Florida, Wisconsin

Certification

Certificate, Project Management Bootcamp, PSMJ Resources, 2017

Certificate, Six Sigma Green Belt, Management and Strategy Institute, 2014

Certificate, Project Management Qualified, Management and Strategy Institute, 2014

Certificate, Quality Management in the Design Organization, American Society of Civil Engineers, Florida, 2014

Certified, 10-Hour OSHA Construction Safety and Health, Safe-Con, LLC, 2013

Certificate, Confined Space Attendant, Entrant, and Entry Supervisor, Symbiont, Wisconsin, 2009

Professional Affiliations

Florida Engineering Society

Florida Water

Relevant Experience

→ Project manager for finished water transfer pump station improvements at the City of Pompano Beach, Florida, Water Treatment Plant. The pump station has a rated capacity of 35 MGD and feeds two ground storage tanks. The design includes resizing of five 50-HP vertical mixed flow pumps, the addition of VFDs, an hydraulic assessment, HVAC upgrades, and miscellaneous structural improvements.

→ Project manager for the City of Pompano Beach, Florida, Concentrate Disposal project. Alternatives for disposal of membrane concentrate were developed and compared, including introducing concentrate into a reclaimed water plant. A new concentrate disposal pipeline was designed and permitted.

→ Project engineer for the City of Sunrise, Florida, Springtree Water Treatment Plant Phase II Improvements and Rehabilitation project. 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.

→ Project manager and engineer of record for design and construction of a new wastewater collection and water distribution system for a community in Big Pine Key, Florida. Project included over 2,400 ft of sewer piping, a lift station with grinder pumps, and over 2,400 ft of water distribution piping. Mr. Ludwigson coordinated the required permits.

→ Project engineer for the City of Margate, Florida, West WWTP Coagulant Feed System. Work includes settling jar testing for chemical selection, design of a new coagulant storage and feed system, chemical containment, and injection in a clarifier splitter box.

→ Staff engineer for construction management services for the South Florida Water Management District, Florida, L-8 Reservoir project. The reservoir is a 46,000 acre-foot stormwater treatment area along the L-8 Canal in Palm Beach County. The reservoir is designed to improve the quantity, quality, timing, and distribution of freshwater deliveries in order to restore or prevent degradation of nearby natural habitats. The reservoir includes a 175 mgd pump station with four vertical turbine pumps.

→ Staff engineer for the South Florida Water Management District, Florida, C-43 Reservoir project. The reservoir is a 170,000 acre-foot stormwater treatment area along the Caloosahatchee River in Hendry County. The reservoir will improve the salinity balance in downstream estuaries, equalize peak flows in the wet season, and provide essential flows in the dry season.

→ Staff engineer for the South Florida Water Management District, Florida, Big Cypress Basin Field Station Relocation. Mr. Ludwigson is a quality reviewer for plumbing, fire protection, and mechanical drawings and specifications.

→ Project manager for a new potable water storage tank at Site 2A for Broward County, Florida. Improvements include a new 5.0-MG pre-stressed concrete ground storage tank, rehabilitation of an existing 5.0-MG ground storage tank, demolition of two existing ground storage tanks, chemical feed system modifications, yard piping up to 60-inch diameter, and a site drainage enhancements. Design included the layout of a new 30-mgd pump station with four vertical turbine pumps in cans.

Anthony Sabatino, P.E.

Tony Sabatino is a senior engineer with Carollo. His background is in civil and environmental engineering with experience in hydraulics, hydrology, civil site design, wastewater treatment design, piping systems, reclaimed water management and stormwater management. He is proficient in geographic information systems, computer aided drafting, building information modeling, and hydraulic modeling. Prior to his engineering career, Tony served as a construction supervisor and was involved in the construction and quality control of the building of over 1,000 residential homes in Central Florida.

Education

ME Civil Engineering, Colorado State University, 2015

BS Environmental Engineering, University of Central Florida, 2011

Licenses

Professional Engineer, Florida

Certification

FDEP, Qualified Stormwater Management Inspector (#28343), 2013

Autodesk AutoCad Certified Associate (#00310860), 2013

OSHA, 40-hr HAZWOPER (#100702132680), 2010

Relevant Experience

→ Project engineer for the Toho Water Authority, Florida, Sandhill Water Reclamation Facility (WRF) Upgrade and Expansion Project, Kissimmee. This project involves the planning and design of an expansion of the Sandhill WRF from 6 mgd to 9 mgd in the near term and up to 12-mgd at buildout. Responsibilities include hydraulic design of both gravity and pressure systems, civil site design including yard piping layout of diameters up to 42-inches and design of multiple pump station modification for RAS/WAS, transfer pumping and internal recycling.

→ Project engineer for the Water Conserv II reclaimed water reservoir preliminary design, Orange County, Florida. Preliminary design of an earthen reservoir that will provide up to 45mgd of as-needed reclaimed water for supplemental irrigation. Includes design of approximately 13,000 feet of up to 54-inch pipe and a 45mgd high service pump station. Responsibilities include civil site design and hydraulic modeling/analysis.

→ Project engineer and project manager for the Toho Water Authority, Florida, Force Main (FM) Replacement from Lift Station #57 to South Bermuda WRF. This project consists of design and construction of 3,100-feet of new 30-inch FM, and the rehabilitation and replacement of the existing parallel 30-inch FM. Responsibilities include project coordination, hydraulic analysis to evaluate design alternatives, pipeline design, delivery of construction documents, permitting assistance and construction phase services.

→ Project engineer for the Jacksonville Electrical Authority, Florida, Bartram Repump Facility. This project involves the design and construction of site stormwater drainage improvements to alleviate flooding issues. Responsibilities include, site drainage evaluation, civil site design and construction phase services.

→ Project engineer for the Camelot Water Reclamation Facility (WRF) Reuse System Operational Investigation for Toho Water Authority (TWA), Kissimmee, Florida. Project included a detailed feasibility study of alternatives for modification of the operation of TWA's reclaimed water reuse system, which is interconnected with both the Camelot and South Bermuda WRFs. The study included development of a WaterGEMS hydraulic model of TWA's reuse system and comparative analysis of multiple alternatives for system operational and infrastructure modifications, cost analysis, and recommendations. The recommendation was for the installation of additional reuse pumps at the South Bermuda WRF and modification of the effective reuse service areas of the two WRFs to optimize the system's ability to serve more customers. Responsibilities included data collection and analysis and development of modeling scenarios.

→ Project engineer/CAD/BIM coordinator for the City of Orlando, Florida, Iron Bridge Regional Water Reclamation Facility Pretreatment Improvements. Project included the improvement of the grit removal system and blending of the degritted wastewater with return activated sludge from the secondary clarifiers. The system provided is the HeadCell® technology, designed for 40 mgd annual average daily flow and 80 mgd peak hour factor. Responsibilities included preliminary and final design, permitting, bidding phase support, and construction phase support.

Douglas A. Pickell, P.E.

Douglas Pickell is a water resources engineer possessing a broad-based background in civil/water resources engineering and computer applications. He is the project manager for Carollo's continuing water resources engineering consulting services for Water Conserv II, and is the engineer-of-record for design work associated with that project. His design experience includes reclaimed water systems, water supply systems, pipeline infrastructure, and stormwater management. He has extensive experience with database development and handheld data collection. In addition, he has experience with modeling (water distribution systems, surface water and groundwater); geographic information systems (GIS); and programming.

Education

BS Civil Engineering, Bucknell University, 1982

Licenses

Professional Engineer, Florida, Pennsylvania, North Carolina, South Carolina

Professional Affiliations

ASCE

Relevant Experience

→ Project manager for the Groundwater Modeling, Pompano Beach, Florida project. Provided for groundwater modeling for renewal of a Consumptive Use Permit using regional and local groundwater models, as well as GIS. A saltwater intrusion module developed by consultant staff for the MODFLOW groundwater model was used. Developed a groundwater operation and control systems wellfield model.

→ Project manager and Engineer of Record for the Water Conserv II's Reclaimed Water Turnout 3T-02, Orange County, Florida. Design/build services for the construction of a Water Conserv II 16-inch turnout to provide reclaimed water for the Spring Hill residential development in west Orange County's Horizon West community. Civil engineering facilities design included site work, aboveground piping, 60 LF of underground 20-inch piping, and tie-in to existing infrastructure including a wet tap. Supervised preparation of construction plans and specifications, and cost estimates; coordinated full-time field inspection, served as Owner's Engineer during construction, and supervised shop drawing review and RFI response.

→ Project manager and supervising engineer for the Water Conserv II, Orange and Lake Counties, Florida. Responsible for the multi-year, multi-disciplined operations and maintenance contract for the Water Conserv II (WCII) reclaimed water irrigation and aquifer recharge facilities, now in its sixth successive five-year contract for water resources services. These facilities currently use approximately 30-mgd of reclaimed water for irrigation and aquifer recharge through RIBs Services have included design and design-build of the transmission and distribution mains, supervising preparation of monthly operating reports, water distribution system hydraulic modeling, interpretation and reporting of quarterly and annual groundwater monitoring reports, data base system development and maintenance, RIB design and system expansion, hydraulic and groundwater modeling, RIB flow management, preparing renewal applications to the FDEP of the operational permit, and preparing renewal applications to the water management districts of the consumptive use and water use permits.

→ Project manager and Engineer of Record for the Water Conserv II Reclaimed Water Turnout 3T-03, Orange County, Florida. Design and construction-phase services for the construction of a Water Conserv II 20-inch turnout to provide reclaimed water for the Waterleigh residential development of west Orange County's Horizon West community. Design of the facilities included site work, aboveground piping, an aboveground meter assembly for the existing supplemental well co-located on the site, 500 LF of underground 24-inch piping, and tie-in to existing infrastructure. Supervised preparation of construction plans and specifications, and cost estimates. Coordinated full-time field inspection, served as Owner's Engineer during construction, and supervised shop drawing review and RFI response.

→ Heller Brothers Boulevard water mains (potable, wastewater, reclaimed water), Polk County, Florida. Responsible for the QA/QC review of the alignment study and design of approximately 6,700 LF of 8-inch water main, including a jack and bore crossing of US 27; approx. 5,200 LF of 8-inch and 1,000 LF of 6-inch wastewater force main; and approx. 6,700 LF 8-inch reclaimed water main.

Education

BS Engineering Technology, University of Central Florida, 1991

Licenses

Certification

Envision Sustainable Professional

Professional Affiliations

North American Society for Trenchless Technology

American Water Works Association

Construction Management Association of America

Manuel Garcia

Manuel Garcia has 30 years of experience with a broad-based background in civil and environmental engineering projects. Project manager for multiple projects related to water resources engineering consulting services contracts municipal clients. Design experience includes site civil design, stormwater management, reclaimed water system design, water supply systems, and pipeline systems. Additional experience includes rapid infiltration basin design, remedial action plan design, groundwater monitoring planning, contamination assessment review, contaminant fate and transport modeling, groundwater modeling, infiltration gallery design and modeling, and treatment system design and integration. Experienced in Construction Management and Administration for these types of projects.

Relevant Experience

→ Task manager for the Blue Diamond Lake Golf Center, Winter Garden, Florida. Responsible for Design and Environmental Resource Permitting for a 150 acre site including stormwater management system and permitting and golf course elements.

→ Task manager for the Water Conserv II – Reclaimed Water Main Extension to Stoneybrook West, City of Orlando and Orange County Utilities, Florida. Manager for a 15,000 LF pipeline extension of the Water Conserv II reclaimed water distribution system to serve Stoneybrook West. Responsible for The Water's shop drawing review, RFI response and field inspection.

→ Task manager and project engineer for the Water Conserv II Reclaimed Water Facilities Expansion Design, City of Orlando and Orange County Utilities, Florida. Provided engineering design and construction services for the reclaimed water irrigation and aquifer recharge facilities. Services have included design and design/build of the transmission and distribution mains; water distribution system hydraulic modeling; rapid infiltration basin (RIB) design and system expansion; assisting in the design/build assignment for distribution piping manifold; hydraulic modeling and RIB flow testing.

→ Project engineer for the Water Conserv II – Addition of Turnout 8T-10, City of Orlando and Orange County Utilities, Florida. Provided fast-track design/build services for the installation of a Water Conserv II reclaimed water turnout for the City of Winter Garden. Assisted with the selection of contractors; assisted Owner's Engineer during construction, and prepared shop drawing review, RFI response/part-time field inspection.

→ Task manager for the Water Conserv II – RIB Site 2 Design and Construction, City of Orlando and Orange County Utilities, Florida. Manager for civil engineering design of facilities expansion for the Water Conserv II reclaimed water system at new Rapid Infiltration Basin (RIB) Site 2 including site work and distribution piping system design. Responsible for preparation of construction shop drawing review, RFI response and part time field inspection.

→ Project manager for the C-44 Reservoir Storm Water Treatment Area Construction Management, SFWMD Indiantown, Florida. Technical and overall financial performance of the project. The C-44 project is part of the Comprehensive Everglades Restoration Plan, which provides a framework and guide to restore, protect and preserve the water resources of central and southern Florida, including the Everglades.

→ Project engineer for the Water Conserv II – RIB Site 2 Expansion, City of Orlando and Orange County Utilities, Florida. Design/build services for the RIB expansion of Water Conserv II's RIB Site 2. Civil engineering design of facilities expansion at RIB Site 2 including site work, stormwater design and analysis, and ecological impacts. Prepared construction plans and specifications, and cost estimates. Provided assistance with the selection of contractors; assisted Owner's Engineer during construction, and prepared shop drawing review, RFI response and part-time field inspection.

Chris T. Reinbold, P.E.

Chris Reinbold, a vice president with Carollo, has 17 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.

Education

Master of Civil Engineering, North Carolina State University, 2008

BS Civil Engineering, University of North Carolina at Charlotte, 2003

Licenses

Professional Engineer, Florida, North Carolina

Professional Affiliations

American Water Works Association

Relevant Experience

→ Project manager for the City of Sunrise, Florida, Inverrary Bridge Forcemain Relocation. Design and construction management services for the removal of the existing forcemain and a new relocated pipeline that includes an aerial canal crossing. Project includes hydraulic modeling, permitting, and bidding services.

→ Project engineer for the City of Concord, North Carolina, Sludge Handling Facilities project at the Coddle Creek WTP. Project involved designing sludge handling facilities that included a dewatering centrifuge building for a 12-mgd water treatment plant. The project was schedule-driven (designed and bid in 4 months) and included evaluating mechanical dewatering technologies prior to designing the selected alternative, gravity thickener, and sludge pumping systems. Responsibilities included site layout and design, piping, grading, erosion and sedimentation control, and storm water collection system upgrades.

→ Project manager for the City of Sunrise, Florida, Sawgrass Water Treatment Plant membrane replacement, acid modifications, ion exchange (IX), and other improvements. This project includes two bid packages. The first is to replace the nanofiltration membrane elements for the existing 24-mgd treatment plant and demolish and replace the sulfuric acid pumps. The second is to install an oxidation, pre-filtration, and IX system to treat surficial aquifer water for iron, control color, and reduce organics. This treatment train is separate and parallel to the existing membrane filtration train. Following degasification of the membrane permeate, the IX treated water will be blended with it to optimize finished water hardness and alkalinity. The City will experience cost savings (through power and chemical reduction), reduced distribution system maintenance, increased water use, and improved overall finished water quality.

→ Design manager for the City of Sunrise, Florida, Springtree Water Treatment Plant Sodium Hypochlorite Tank Replacement, Reverse Osmosis Water Treatment Plant, and Controls Building and High Service Pump "A." The project was executed as three separate bid packages. The first was to replace four 15,000-gallon each sodium hypochlorite tanks on an accelerated schedule. The second was to prepare a procurement bid package and then general construction bid package including the design of 3 mgd of reverse osmosis treatment, with 1.5 mgd to be procured and installed in the first phase, at the existing 24-mgd Springtree Water Treatment Plant. The reverse osmosis design included conversion of an ASR well to a Floridan aquifer production well, sand strainers, cartridge filters, two-stage reverse osmosis treatment, degasification, air quality control scrubbers, clean-in-place system, and chemical systems. The third bid package included the addition of a new plant controls building, new 12-mgd high service pumping station, and miscellaneous renewal and improvements to the existing softeners.

→ Staff engineer for the Central County Water Reclamation Facility Expansion project, Sarasota, Florida. Project included upgrading electrical service, replacing the existing manual bar screens; converting brush aerators to fine-pore diffused aerators; designing a new 80-foot diameter secondary clarifier; upgrading the RAS/WAS pumping stations, deep-bed filter units, and methanol feed system; and designing a new operations and maintenance building. Design responsibilities included upgrading the solids storage tanks by adding a mechanical decant mechanism and piping connection for mobile belt filter press dewatering by a contact operator.

Office Location

Coral Gables, FL

Education

BS Mechatronics Engineering, Assiut University, 2012

Training, Earthwork Construction Inspection - Level 1, Florida Department of Transportation CTQP

Training, FDOT Concrete Field Inspector, Florida Department of Transportation CTQP

Certification

Concrete Field Testing Technician, Grade I, American Concrete Institute, 2018

Mina H. Tawadros

Mina Tawadros is a project engineer with over 4 years of experience in civil engineering water and wastewater industry. Most of his experience in field inspections and design.

Relevant Experience

→ Project engineer for designing the City of Sunrise, Florida, Pine Island Road Force Main Replacement. The project replaced the existing asbestos-cement (AC) sewer flow meter, which runs from the C-13 canal to NW 44th Street, east to Springtree Drive, and south along Springtree Drive into the wastewater treatment plant.

→ Project engineer for the City of Sunrise, Florida, Sawgrass WTP Pipe Gallery Improvements Design. This project consists of repairing and replacing multiple components of the existing nano-filtration treating system such as couplings, valves, pumps, and piping.

→ Project engineer for the City of Pembroke Pines, Florida, WTP Valve Insertion Design.

→ Project engineer for the ongoing design of the City of Boynton Beach, Florida, Silverwood Force Main Replacement.

→ Project engineer for the ongoing design effort of the Inverrary Bridge Forcemain Relocation for the City of Sunrise, Florida.

→ Field inspector/engineer/assistant project manager for the City of Sunrise, Florida, Sawgrass WTP Degasifier Media Replacement. This project consists of replacing the media for all four existing degasifiers which are part of the nano-filtration treatment system.

→ Field inspector/engineer for the City of Delray Beach, Florida, WTP Upgrades and Improvements. Refurbishment and general maintenance of multiple components of the existing treatment system, such as clarifiers, filters, and chemical tanks.

→ Field inspector/engineer for the City of Sunrise, Florida, Southwest Wells Replacement. The project consists of replacement of Well Nos. 1 and 3 at the Southwest Water Treatment Plant. Demolition, decommissioning, and abandonment of the existing wells; construction of two new wells with well pumps, underground utility piping; and all related EI&C components.

→ CMS inspector for the South Florida Water Management District, Florida, S-5a Pump Station Repowering and Automation as a subconsultant. Rehabilitation of chain drives, overhauling of the six existing 10-cylinder opposed piston engines, electrical upgrades as part of the overall station refurbishment, and control system upgrades for automatic operation of station systems.

→ Project engineer for designing the Florida Keys Aqueduct Authority, Florida, Grassy Key Transmission Main Replacement. Construction of a 30-inch C200 spiral weld steel potable water transmission main, including installation of transmission main isolation valves, line stops, master meter vaults, meters, PRVs, combination air valves, abandonment and demolishment of the existing vaults and sections of the existing pipelines and potable water distribution system connections.

→ Project engineer for designing the Florida Keys Aqueduct Authority, Florida, CR-905/Highway US-1 Pipeline Crossing. Construction of an 18-inch DIP, 16-inch DIP and 16-inch steel potable water transmission main near David C Ritz BPS. Installation of transmission main isolation valves, air release valve, PRV, valve and meter vaults, water main system connections, and facilities. A surge mitigation system was installed at the meter building near the entrance to Ocean Reef development.

→ Field inspector/engineer for the City of Sunrise, Florida, Sawgrass WTP Ion Exchange and Improvements. Construction of a new oxidation, pre-filtration, and ion exchange treatment system as well as a cleaning system for the existing degasifiers. Also included are the related EI&C components and a new ammonia analyzer and coating two existing ground storage tanks.

Eduardo G. Torres, E.I.T.

Eduardo Torres joined the Carollo team in 2019. He possesses a Master's degree in Environmental Engineering with a focus on Environmental Process Engineering. His background is primarily in wastewater and water treatment processes.

Education

BS Chemical Engineering, West Virginia University Institute of Technology, 2016

MS Environmental Engineering, Manhattan College, 2018

Licenses

Engineer-in-Training, Florida

Professional Affiliations

American Water Works Association

Water Environment Federation

Relevant Experience

→ Project engineer for the City of Margate, Florida, Design Services for the East WWTP Upgrades. The project will enable the East WWTP to greatly increase capacity, enhance long-term reliability, and provide treatment flexibility. The improvements include:

- Upgrading the influent flow control valves for automated control.
- Adding a magnetic flow meter on the raw influent piping to the East train for redundancy.
- Replacing the 6-mm influent drum screen with a 3-mm influent drum screen and the existing surface aerators with more efficient, medium-bubble diffusers and associated blowers and air piping.
- Adding integrated fixed film media (IFAS) and associated equipment into the existing activated sludge aeration basins to accommodate attached growth microorganisms.
- Adding subdividing walls to the existing aeration basin to create an unaerated selector zone for improved settling characteristics of the biomass in the clarifier.

→ Project engineer for the City of Fort Lauderdale, Florida, Fiveash WTP Evaluation. The project included evaluating the condition and adequacy of the lime softening and filtration treatment processes at the Fiveash WTP, assisting in developing alternatives to meet projected future potable water treatment needs, and running bench-scale analytical tests to evaluate alternatives for future treatment systems.

→ Project engineer for the City of Sunrise, Florida, Ion Exchange System at the Southwest WTP. Created electronic O&Ms manual on a Microsoft Sharepoint platform for the water plant. Per process area, inputted into the platform, overview of operations, design criteria, equipment and instrument descriptions, process flow diagrams, standard operating procedures, and SCADA alarm responses and uploaded pertinent drawings and documents. During Plant Startup, provided fields services to ensure achievement of process performance targets, and operational strategy to improve the plant's performance and achieve substantial completion.

→ Project engineer for City of Sunrise, Florida, Ion Exchange System at the Springtree WTP. Design of a 12-mgd ion exchange system at an existing lime softening plant. Project include mechanical process design, hydraulic calculations, writing a design report, permitting, writing specifications and cost estimating.

→ Project engineer for City of Pembroke Pines, Florida. Work included designing and rehabilitating the lime feed system to replace the aged equipment currently in use and the piping/equipment associated with the lime system.

→ Project Engineer for the Florida Keys Aqueduct Authority (FKAA), Florida, Stock Island Reverse Osmosis Plant. The project included the design of 4 new seawater wellheads with well pumps, underground piping and electrical and instrumentation components to feed the new RO Plant; and the design of storage and feed systems for sodium hypochlorite, ammonium sulfate, corrosion inhibitor, scale inhibitor and carbon dioxide.

Laura B. Baumberger, P.E.

Laura Baumberger, 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 to provide 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.

Education

MS Environmental Engineering, South Dakota State University, 2003

BS Civil Engineering, South Dakota State University, 2002

BA Spanish, South Dakota State University, 2002

Licenses

Professional Engineer, Florida

Civil Engineer, California

Professional Affiliations

American Water Works Association

Water Environment Federation

Relevant Experience

→ Project manager for the Town of Longboat Key, Florida, Inflow and Infiltration Study for wastewater collection system. Included testing plans throughout the collection system to quantify and map brackish groundwater infiltration, a mass balance to determine key areas of a corrective action plan, including cost estimates for repairs or replacement of pipes and strategies towards chloride reduction. Project also included SCADA data analysis and flow monitoring to develop a list of basins for further evaluation or improvements to reduce inflow.

→ Project manager for the Pasco County, Florida, Wastewater Model. Construction, calibration, and analysis of a new hydraulic model in Innovyze InfoSWMM software. Dry weather and wet weather calibration was based on field testing. Hydraulic analysis identified system deficiencies utilizing a level of service condition and wet weather storm events. Analysis included pump stations, force mains, and major gravity collectors.

→ Project manager for the Town of Davie, Florida, Utility Master Plan. Development and calibration of a wastewater collection system hydraulic model, condition assessment and process evaluation of the Town's wastewater treatment facilities, and development of a Utilities Master Plan and CIP.

→ Project manager for Manatee County Utilities, Florida, wastewater master plans for three service areas. Created hydraulic models in SewerGEMS software and calibrated and evaluated collection systems under dry and wet weather scenarios. Developed population projections and evaluated impacts of development.

→ Project manager for the Orange County Utilities (OCU), Florida, Wastewater Division Asset Management Program Development and Southern Water Reclamation Facility (SWRF) Condition Assessment Pilot. Updated asset inventory and developed hierarchy for OCU's WRFs, assessed condition of the SWRF, and evaluated criticality and risk. Developed an approach to integrate the data into Maximo asset management system. An Asset Replacement Program was developed to guide OCU in future prioritization and budgeting of the SWRF assets.

→ Project manager for the Manatee County, Florida, Valve and Force Main Condition Assessment and Asset Management Program. Project included development of a program to investigate the condition and maintenance practices of the forcemain network and associated isolation valves based on age, material, condition and criticality.

→ Project manager for the Town of Davie Utility Master Plan. Project included development and calibration of a new wastewater collection system hydraulic model, update and calibration of the Town's potable water distribution system model, condition assessment and process evaluation of the Town's water and wastewater treatment facilities, and development of a long-term Utilities Master Plan and Capital Improvement Plan. A rate study will also be completed as a part of this project in order to determine the impact of the recommended CIP on the Town's utility service rates and fees and will also include evaluation of various funding scenarios.

→ Project manager for the City of Punta Gorda, Florida, Wastewater Master Plan. Project included development and calibration of new hydraulic models for both the water distribution and wastewater collection systems, evaluation of the existing networks to identify bottlenecks or deficiencies, and recommendations for future water and wastewater infrastructure. A 5-year CIP was developed to meet the projected future infrastructure needs.

M. Angelica Gregory, Ph.D., P.E.

Dr. Angelica Gregory is a senior engineer with 16 years of combined experience in the water and wastewater consulting industry and research. Her background includes complex hydraulic modeling for evaluation, operation, design, optimization, integration, and master planning of sewer, water, and reclaimed water network and pumping infrastructure and related assets. She has successfully completed and led comprehensive master planning efforts for our south Florida clients.

Education

BS Civil Engineering, Universidad de Los Andes, Bogota, Colombia, 2003

MS Civil and Environmental Engineering, Universidad de Los Andes, Bogota, Colombia, 2005

PhD Civil Engineering, University of Miami, Coral Gables, 2010

Licenses

Professional Engineer, Florida

Certification

Professional Affiliations

American Water Works Association

Water Environment Federation

Society of Women Engineer

Relevant Experience

→ Project manager for the Pompano Beach, Florida, Water Supply Facilities Work Plan (WSFWP) Update. Responsibilities include updating the City's WSFWP in conjunction with the Southeast Florida Water Management District 2018 Regional Water Supply Plan.

→ Assistant project manager/project engineer for the City of Pompano Beach, Florida, Water Master Plan Update. Development of a new water master plan to recommend capital improvements to meet the City's 20-year water needs. Included updates to the water network hydraulic model per GIS and communications with staff, to simulate the actual high service pump stations by modeling actual data-derived pumping controls, to update total demands with inclusion of large users. Using the updated and verified model, evaluations of the network hydraulic performance, including piping, storage and pumping, were conducted; and followed by predictions of system performance upon projected future growth. A desktop pipe replacement assessment was developed based on age and material. Fire flow was verified at locations of non-compliance. Water quality as a function of water age was established. Based on modeling results, a 20-year CIP was developed to sustain the City's future water demands.

→ Project manager and hydraulic modeling lead for the Owner's Representative Services for the Progressive Design Build of the Reclaimed Water Expansion System for the City of Boynton Beach. Customer procurement; system modeling and optimization; routing; and phasing. Angelica led the calibration and update of the reclaim hydraulic model, the evaluation of the existing system and its optimization to accept buildout demands while minimizing the need for booster pumping and subject to stringent levels of service. Planning-level desktop route analyses and a phasing/connection plans for future customers were provided based on model outcomes.

→ Project engineer for the Town of Longboat Key, Florida, Inflow and Infiltration (I/I) Study. The study was conducted in two phases. Phase 1 – Infiltration included water quality testing plans to quantify/map locations of brackish groundwater infiltration in the system. Conducted a mass balance to determine key areas for improvement and developed a corrective action plan. The plan included cost estimates for prospective repairs or replacement of pipes and future strategies to progress towards incremental chloride reduction goals. Phase 2 – Inflow included SCADA data analysis and flow monitoring to develop a prioritized list of basins that need further evaluation or improvements to reduce inflow.

→ Project engineer for Manatee County, Florida, Valve and Force Main Condition Assessment and Asset Management Program. Development of a comprehensive program to investigate the condition and maintenance practices of the County's forcemain network (comprised of over 800 lift stations and 400 miles of force main) and associated isolation valves. The condition assessment was based on pipeline age, material, inspection, and criticality. The Forcemain and Valve Asset Management Program was developed to assist the County in preserving the functionality and reliability of its wastewater forcemain infrastructure.

→ Project engineer for the Manatee County, Florida, I&I Study. Performed mass balance calculations to determine saline water intrusion concentrations to identify priority areas requiring improvement and the relative extent of corrective action required. Proposed replace and replacement projects, and estimated costs.

Yulyan K. Arias

Yulyan Arias is a professional with over seven years of experience in the field of civil engineering with focus in computer modeling of water, wastewater and stormwater hydraulic models.

Education

MS Environmental Engineering, Florida International University, 2012

BS Environmental Engineering, Florida International University, 2010

Certification

Certified, Envision™ Sustainability Professional, Institute for Sustainable Infrastructure, 2018

Professional Affiliations

Engineers Without Borders

Water Environment Federation

Relevant Experience

→ Project engineer for Rabigh Industrial City Stormwater Improvement Project, Saudi Arabia. Evaluated pre and post site conditions to determine future runoff. Develop list of infrastructural upgrades require to improve the stormwater system to serve future City expansion.

→ City of Salwa Industrial City Development Project, South Arabia. Assisted with the design of the stormwater management system. Supported drainage model setup using XPSWMM to determine pre and post conditions, pipe sizing, and drafted flow rounding calculations to determine finish floor elevation and pond sizing. Collected and analyzed descriptive data, graphs, and maps to generate engineering reports. Assisted in the design of graded roads, storm details, and pre-treatment pond following design standards of the region.

→ Project engineer for the City of Miami Beach Bayshore Stormwater Improvement Project, Florida. Assisted technical lead with the design of the City's drainage systems by improving existing grading conditions. Calculated pipe size utilizing the principles of the rational method and modeled the designed system using ICPR3. Applied engineering concepts to make engineering decisions under a PE supervision and applied the principles of hydraulics and hydrology in the design of the storm system. Responsible for the preparation of permit packages to be submitted to DEP, SFWMD and DERM. Supervised field activities during the construction of three gravity wells.

→ Project engineer for the Collier County Surge Control System Design for the NCRWTP and Isle of Capri Pump Station, Florida. Coordinated the integration of the hydraulic parameters resulting from the transient analysis into the design of the two surge vessels. Assisted with the development of the preliminary design report, 90% design drawings and 90% specs. Obtained vendor proposals and developed cost estimates. Assisted PM with the overall project coordination. Ensured Carollo Standard QC process was fully executed.

→ Project Engineer for Manatee County Forcemain and Valve Assessment Program Update, Florida. Determine the risk factors associated to each of the force main segments based on their GIS records and maintenance reports. Collected and analyzed data using ArcGIS Pro. Built GIS models to automate and facilitate data processing. Calculated risk factors considering the likelihood of failure and the consequence of failure. Produced a report identifying short/long term project and phasing outlook.

→ Hydraulic modeler for Broward County Regional System Master Plan, Florida. Constructed and calibrated the County's Wastewater Hydraulic model using InfoWater. Assisted with the integration features in the model that improved model stability and greater accuracy. Determined controls required to adequately simulate lift stations and booster stations.

→ Project engineer for the City of Boynton Beach Reclaimed Water System Expansion, Florida. Assisted the City with the development of a phased approach to identify potential reclaimed water customers. Identified benefits and constraints of the usage of reclaimed water for irrigation. Subsequently, developed a plan to educate and attract customers in the use of reclaimed water.

→ Project engineer for the City of Deerfield Beach Integrated Master Plan, Broward County, Florida. Assisted the lead engineer in the calibration effort of the City's water and wastewater hydraulic model. Evaluated different scenarios to identify future required projects for the City to adequately meet future water demands and convey projected wastewater flow. Performed a feasibility study of the reclaimed water distribution system supplied by the County WRF.

Juniper Marini

Juniper Marini has 4 years of experience in the field of Environmental/Civil Engineering with an emphasis in water and wastewater, primarily in program management for large-scale wastewater design of pipelines and currently gaining experience in hydraulic modeling for water distribution and wastewater collection systems and preliminary design phases for water treatment processes and pump stations.

Education

BS Environmental Engineering, University of Miami, 2016

Licenses

Certification

Professional Affiliations

Florida Section of the American Water Works Association

Relevant Experience

→ Project engineer for the City of Pompano Beach, Florida, Water Distribution System. Carollo has been tasked to develop a Water Master Plan, including updating the current model based on existing system and population projections for future years, evaluate the various scenarios, and determine a list of CIPs that may be required in the near future. The hydraulic modeling and evaluations were done using the Innovyze InfoWater software.

→ Project engineer for the City of Delray Beach, Florida, Conceptual Design for upgrades to Lift Station 50. Developed a conceptual design for upgrades to an existing lift station based on existing/future flows and a hydraulic conditions assessment.

→ Project engineer for the City of Boynton Beach, Florida, Forcemain isolation valves project. Carollo is to plan for and design improvements to install isolation valves in the system to improve flexibility and reliability. Hydraulic modeling efforts were done to establish alternate reliable flow patterns in the system and identify the best locations for valve placement. The wastewater hydraulic modeling and evaluations were done using the Innovyze InfoSWMM software.

→ Project engineer for the City of Boynton Beach, Florida, Wastewater Collection System. Carollo is incorporating areas of development into the existing wastewater model using the InfoSWMM software to determine if the network is capable of maintaining the system with the additional loads. An evaluation of the collection system and various scenarios are being done to determine the most efficient and effective way to account for the addition to the system, future loads, and the different weather events that affect the collection system.

→ Project engineer for the City of Boynton Beach, Florida, Reclaim System Expansion. Carollo is serving as the Owner's Representative for the Progressive Design Build. The project includes customer procurement, system modeling and optimization, routing, and phasing. The hydraulic modeling and evaluations are being done using the Innovyze InfoWater Pro software.

→ Project engineer for Sarasota County, Florida, Water Distribution System. Carollo is to update the existing Water Master Plan to account for future population and demand projections using hydraulic modeling to evaluate existing and future scenarios and develop a list of Capital Improvements Projects. The hydraulic modeling is being done using the Bentley WaterGems software.

→ Project engineer for the City of Pembroke Pines, Florida, Water Treatment Plant preliminary evaluation and design of a new lime feed system to replace the aged equipment currently in use. Carollo is providing an evaluation of various lime feed technologies and determining the best option based on staff familiarity, cost, and ease of operation. Preliminary design is included.

→ Project engineer for Orange County Utilities in Orlando, Florida. Carollo is the prime consultant for the design and construction of a new Utilities Operations Center East facility for Orange County Utilities. Carollo is responsible for project administration, coordination of subconsultants, and invoicing. Assisting the Project Manager by coordinating meetings and review of submittals with the subconsultants.

→ Project engineer for the City of Coral Gables, Florida, Stormwater Improvements Project. The project included removal and replacement of roughly 3 miles of stormwater collection system. Inspected the construction site, coordinated with the City and Contractor on a monthly basis, reviewed shop drawings and specifications, and produced daily reports.

Seema Bhimani Chavan, P.E.

Seema Chavan is a senior engineer with Carollo Engineers with over 18 years of experience in environmental engineering. Her projects have focused on permitting (including agency coordination and permit acquisition), water quality and watershed issues, including TMDLs, water quality trading, modeling, drinking and receiving water quality studies, non-structural alternatives for water quality improvements, and public involvement.

Education

MS Environmental Engineering, Northwestern University, 1997

BS Civil Engineering, University of California, Berkeley, 1993

Licenses

Civil Engineer, California

Professional Affiliations

American Academy of Environmental Engineers

Water Environment Federation

California Water Environment Association

Relevant Experience

→ Project SRF coordinator for the City of Santa Cruz, California, Drinking Water SRF funding assistance projects. Tasks include: preparation and submittal of two Drinking Water SRF loan applications for the Graham Hill WTP Concrete Tanks Project and the Newell Creek Inlet/Outlet Pipeline Project; coordination with SWRCB staff; coordination of environmental, financial, and engineering documentation with application process; and identification of potential sources of loan and grant funding for various CIP projects. Project engineer responsible for the development of an overall Grant Visioning workshop to identify potential funding opportunities for the City's $350 million CIP.

→ Project lead for evaluating and identifying grant and funding assistance opportunities for the City of Modesto, California. Review and identification of potential grant and loan funding opportunities for the implementation of planning, design, and construction activities associated with the proposed Direct Potable Reuse Project at the City's Secondary and Tertiary WQCP. Tasks included the review of federal, state and local funding programs; Coordination with federal, state and local agency staff; Identification of overall and specific funding opportunities as well as requirements (e.g., document readiness, application timelines, and project potential for award) applicable to the project; and identified two funding opportunities to pursue/track.

→ Project lead for evaluating and identifying grant and funding assistance opportunities for the City of Cedar City, Utah. Tasks included review and identification of potential grant and loan funding opportunities for the implementation of planning, design, and construction activities associated with a proposed reuse and DPR demonstration facility. Tasks included the review of federal, state and local funding programs; discussions with federal, state, and local agency staff; identification of overall and specific funding opportunities as well as requirements applicable to the project; and development of recommendations of funding opportunities to pursue/track.

→ Project lead for evaluating and identifying grant and funding assistance opportunities for the City of South Jordan, Utah. Review and identification of potential grant and loan funding opportunities for the implementation of planning, design, and construction activities associated with a proposed reuse and DPR demonstration facility. Included the review of federal, state/local funding programs; discussions with federal, state, and local agency staff; identification of overall and specific funding opportunities as well as requirements applicable to the project; and development of recommendations of funding opportunities to pursue/track.

→ Funding project manager for the City of Antioch, California, Brackish Water Desalination Project. Funding sources include California Department of Water Resources (DWR) Desalination Grant ($10 Million), Drinking Water SRF Program loan financing, and WIFIA loan. Responsibilities include the management of the three funding agencies and various grant/loan applications and requirements. Engineer supported the development of the DWR Grant Package, response to questions on the grant submittal, review/comment on proposed grant agreement and overall grant implementation. Responsible for the development and submittal of the DWSRF loan application package; coordination with funding agencies; Coordination of environmental documentation which included EIR, CEQA-Plus SRF requirements and permits; Coordination with City and SWRCB staff. Responsible for the development of the WIFIA Application Package.

Brian Graham, P.E.

Brian Graham is an environmental engineer and operator with 33 years of experience encompassing design and operation of advanced water and wastewater treatment systems, biological nutrient removal, reverse osmosis (RO) water treatment, biosolids management, master planning, wastewater process modeling and computer simulation. He has been involved in the design, startup, and operation of numerous advanced wastewater, water, and RO treatment projects throughout the United States. For Suez (previously known as United Water, Inc.) he was the Engineering Manager and Process Engineer for the 42-mgd West Basin Water Recycling Plant in El Segundo, California. Mr. Graham also served as Suez' Senior Director of Operations for the West Division and as Director of Technical Assistance for Suez nationwide assisting with operation, engineering, process troubleshooting, and facility startup activities.

Education

BSE Environmental Engineering and Science, University of Florida, 1986

Licenses

Environmental Engineer, Arizona

Civil Engineer, California

Professional Engineer, Oregon, Florida, Texas

Certifications

CA Grade III WWTP Operator

Professional Affiliations

Water Environment Federation

American Water Works Association

Relevant Experience

→ Operational process engineer for the MSKP Town and Country Utility, Florida, Babcock Ranch WRF SBR Upgrade and Conversion to MBR. Carollo was selected to evaluate, design, and provide construction management services for the Phase 2 design/build expansion, which will increase flow to 0.75 mgd and modify the treatment facility to an MBR system to reuse much of the existing treatment units.

→ Startup lead and operational support for the City of Oak Harbor, Washington, Clean Water Facility 2.0-mgd MBR treatment plant including solids handling, centrifuge dewatering and sludge drying, operator training, and assistance in developing operating procedures.

→ Startup assistance for the City of Chandler, Arizona, 5.0-mgd MBR Ocotillo WRF Expansion. Provided operator training and assisted with seeding and monitoring of the new treatment train during the initial startup, which achieved permitted effluent quality within five days from seeding.

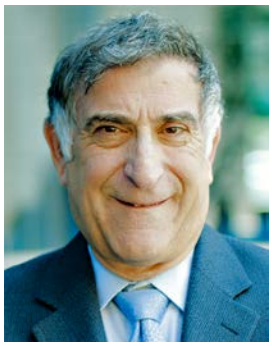
→ Troubleshooting assistance for the City of Delray Beach, Florida, 24-mgd South Central Regional Wastewater Treatment Plant. As part of the aeration replacement project, the plant needed to take a quarter of the aeration basins offline; however, the plant was experiencing a major filamentous bulking event. Quickly developed an alternative process control strategy to reduce the impact of the bulking that allowed the plant to take down the required aeration basins for the aeration replacement project.

→ Startup assistance for the San Luis Obispo County, California, 2.0-mgd Los Osos Wastewater Treatment Plant. Following construction and contractor turnover, provided direction, process performance targets, and operational strategy to improve the plant's performance and achieve compliance for effluent total nitrogen.

→ Project manager for the development of standard operating policies (SOP) and procedures for the maintenance of water system operations facilities for the City of San Diego, California. These SOP included pump stations, pressure regulating stations, reservoirs/standpipes and altitude valves.

→ Provided staff support for the San Elijo Joint Powers Authority, California, Outfall Replacement, the Encinitas Ranch Recycled Water Pipeline, and the Preliminary Treatment Upgrades projects.

→ Senior director of operations for Suez – West Division. Oversaw a diverse portfolio in potable water treatment, wastewater treatment, advanced wastewater treatment for reclamation/reuse, and an industrial pretreatment and source control program. Had six (6) direct reports and a total project staff of 85 operators, engineers, chemists, lab technicians, source control specialists, and administrative support staff. In addition to client satisfaction responsibilities, reported to the segment president and was responsible for the overall environmental compliance, worker health and safety compliance and financial profitability of the United Water West Division, which has an annual budget in excess of $16 million.



Joel D. Smason, P.E., S.E.

Joel Smason has 42 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).

Education

MS Structural Engineering, University of Illinois, Urbana-Champaign, 1976

BS Structural Engineering, University of Illinois, Urbana-Champaign, 1975

Licenses

Structural Engineer, Arizona, Illinois, New Mexico

Civil Engineer, Nevada

Professional Engineer, South Carolina, Missouri, North Carolina, Texas, Illinois, Florida

Certification

Certificate, Confined Space Entry Training

Professional Affiliations

American Society of Civil Engineers

AZ Water Association

Structural Engineering Association of Illinois

Relevant Experience

→ Structural engineer for the Citrus County Brentwood Wastewater Treatment Facility, Citrus County Department of Public Works, Florida. This project involved upgrading and expanding the existing 0.55 mgd Brentwood Wastewater Treatment Facility to treat an average flow of 2.0 mgd and produce an effluent that will meet the criteria for reuse applications. This required adding tertiary filtration and treated effluent storage. The existing facility was a single oxidation ditch with an anoxic zone. Process modifications, including the Modified Ludzack Ettinger (MLE) process and Step Feed Biological Nutrient removal (BNR), were evaluated.

→ Structural engineer for the Sarasota County, Florida, Central County WRF Phase 3 Expansion Amendment project. Project included miscellaneous structural, electrical/instrumentation, and mechanical modifications to the wastewater treatment plant.

→ Structural engineer for the Cowlitz Water Pollution Control Plant Solids Handling Improvements, County of Cowlitz Water Pollution Control, Washington. Three thickening alternatives were evaluated for the plant and the installation of a gravity belt thickener was selected as the most cost effective method of increasing solids processing capacity. Predesign, final design, and construction phase services were provided.

→ Structural engineer for the Manatee County, Florida, Lake Manatee Water Treatment Plant Filter Upgrade. This project includes retrofit of the surface water treatment plant's existing dual-media filters with submerged ultrafiltration membranes and a new chemical facility. The design capacity of the ultrafiltration membranes will produce 52-mgd (net), making it the largest ultrafiltration membrane retrofit in the country.

→ Structural design engineer for Florida Water Services' Palm Coast Reverse Osmosis Water Treatment Plant Expansion, Apopka, Florida. The expansion of the water treatment plant from 2 mgd to 9.6 mgd included design of supports for electrical equipment.

→ Structural engineer for the Sarasota County, Florida Venice Gardens Water Treatment Facility Upgrades. Provided preliminary and final design for the expansion of five existing membrane trains including conversion from single stage to two stage arrays and the utilization of a hybrid membrane array for flux balancing. New post treatment facilities included a degasifier and rehabilitated chemical scrubbers for hydrogen sulfide removal; a carbon dioxide solution feed system for pre-degasifer pH adjustment and alkalinity recovery; a concentrate pump station for offsite concentrate disposal; new and upgraded caustic soda, aqua ammonia, sodium hypochlorite, and corrosion inhibitor systems; and an updated control system.

→ Structural engineer for the Collier County Northeast Water Treatment Plant/Water Reclamation Facility Design, Florida. 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.

→ Structural engineer for the City of Northport, Florida WTP Enhancement Study. The purpose of this study was to evaluate treatment enhancements to increase the reliable production and quality of water from the WTP.

Gamboa
Engineers Innovating with Energy and Automation

Mario A. Gamboa, P.E.
Lead Electrical Engineer
Office Location: Southwest Ranches, FL

Mr. Gamboa will be the Lead Electrical and Controls Engineer, responsible for the Master Plan, Design, and related interconnections with SCADA Systems for the plant electrical upgrades, in accordance with the City of Pompano Beach design criteria and standards, including power distribution systems from the FPL power source and medium voltage switchgear, through underground duct-banks, transformer rooms, new main electrical rooms, layout of new 480 arc resistant switchgear, motor control centers, power flow analysis, control schematics and ancillary support system such as LED lighting, grounding and lightning protection, conduit and wiring schedules, During the construction phase, Mr. Gamboa will act as the Lead Electrical Engineer, for review of submittals, response to RFIs, evaluate proposal for any changes, address construction constraints, and provide input for project schedule update.

Mr. Gamboa professional experience spans 39 years of Electrical Engineering experience in the water and wastewater field working for and with Carollo Engineers in projects and municipalities throughout the United States, Florida, including City of Pompano Beach Utilities Department

Relevant Project Experience Related to RFQ – E04-20

- ✓ **39 years in electrical engineering and related value engineering; engineering management, construction management of numerous municipal and industrial projects**
- ✓ **Substantial knowledge of the City of Pompano Beach Water Treatment Plant Power Distribution systems, including the existing 5 KV switchgear, recent upgrades to the 480 volts switchboards, motor control centers and familiar with older equipment that it is reaching the end of its useful life.**
- ✓ **Expertise with means and methods of construction for electrical and automation systems.**
- ✓ **Significant Water Treatment Plant project experience**
- ✓ **Substantial Experience in electrical design and automation of Lime Softening and RO Membrane systems**

Relevant Responsibilities	Relevant Expertise
♦ Electrical Engineering Management	♦ Compliance with Pertinent Codes and Standards
♦ Basis of Electrical Design Criteria	♦ Project Phasing & Scheduling
♦ Collaborate and Coordinate with Water Treatment Process Design and Construction Team	♦ Engineering Management of Municipal, Industrial and Commercial Projects
♦ Design of Electric Power Distribution Systems	♦ Lime Softening Systems
♦ Synchronizing of Standby Power Generator Auxiliary Support Systems	♦ Membrane Filtering System
♦ Quality Control of Electrical and Automation Design	♦ Pump Stations
♦ Testing of Electrical and SCADA systems	♦ Power Studies and Load Flows
♦ Electrical and SCADA System Start-Up & Commissioning	♦ Electrical & Instrumentation Opinion of Cost
	♦ Value Engineering of Electrical and Control Systems

- ✓ Lead electrical engineer for the City of Pompano Beach Water Treatment Lime Softening Plant, Electrical Master Plan and Urgent Improvements Phase I, II and III projects. These projects included separate phases for the design and construction to replace 5 kV power distribution Motor Control Center, 480 volts power distribution switchgear, 5 kV /480 volts transformers, replace 480 volts variable frequency drives.
- ✓ Quality control electrical engineer to assist the City of Pompano Beach Water Utilities Department with review of separate design for 600 HP pump's speed controls with 5 kV VFDs and addition of programmable logic controllers.
- ✓ Quality control electrical engineer to assist the City of Pompano Beach Water Utilities Department, with review of design documents for electrical upgrades to the west water production wellfield. The projects included 13 kV-480 volts pad mounted transformers, 13 kV cable Splitter cabinets and underground 13 kV cables.

Education

MS Electrical Engineering, Iowa State University, 2007

MS Physics, University of Florida, 2005

BS Electrical Engineering and Physics, Iowa State University, 2002

Licenses

Professional Engineer, Florida 71642, Arkansas 18858, Arizona 53222

Certifications

ANSI Certified, Global Industrial Cyber Security Professional, Global Information Assurance Certification, 2016

ISA IC32E – Cyber Security for Automation, Control, & SCADA Systems

VTScada Level 2 Advanced Configuration

Professional Affiliations

American Water Works Association (AWWA)

AWWA Cybersecurity Subcommittee Chairman

International Society of Automation

Norman Anderson, P.E.

Norman Anderson is an electrical and Instrumentation & Controls (I&C) engineer with Carollo. He has been providing secure and reliable SCADA, I&C, electrical, and physical and cyber security solutions for over 10 years for water, wastewater, and environmental projects in both the public and private sectors. He is experienced in the planning, design, commissioning, and management of highly technical automation projects and able to generate innovative solutions to complex problems. He has specialized in industrial control system network security and also served as the SCADA Manager at a municipal utility dealing with the challenge of maintaining and expanding automation and communications systems first hand.

Relevant Experience

→ Lead electrical and I&C engineer for the City of Maitland, Florida, SCADA Upgrades. Project involved expanding the City's SCADA system to cover the City's water treatment plants. Design included development of P&IDs and electrical drawings for the installation of new SCADAPack based RTUs and cellular communications.

→ I&C engineer for the Polk County Utilities, Florida, Central Regional WPF. Provided I&C design and construction support services for a 4-mgd WPF that included raw water wells, ozone treatment, GAC filtration, and sodium hypochlorite disinfection processes. I&C systems included instrumentation, control panels, network and communications infrastructure, control logic, SCADA system components, CCTV systems, and interfaces with intelligent paralleling switchgear.

→ Lead SCADA consultant for the Manatee County, Florida, SCADA Master Plan. Managed Phase 2 of the plan to develop projects related to the County's SCADA system operations, PLC systems, HMI software, server infrastructure, network hardware, communications security, and physical security.

→ Lead SCADA consultant for the City of Delray Beach, Florida, SCADA Implementation Plan and Software RFP. Used the City's existing master plan as a guide to develop workshops, finalize key decisions, and develop projects to implement the recommendations of the master plan. Developed consensus with staff on software platform and assisted with software procurement.

→ Lead SCADA consultant for the City of Deltona, Florida, SCADA Upgrades. Assisted the City in planning of upgrades for City lift stations, WTPs, and WWTPs to develop a fully integrated SCADA system. Work included selecting system integrators, construction services, and assistance with project management for the City. SCADA system planning included developing a clustered Wonderware SCADA system and tiered historians built on a virtualized platform; addition of fiber optic, cellular, and microwave communications to increase bandwidth and system reliability; design of a tempered networks cybersecurity solution for system protection; general RTU and PLC upgrades to replace legacy equipment and increase standardization.

→ SCADA manager for Polk County Utilities, Florida. Responsibilities included:

- Management of the SCADA department for the county-wide water and wastewater utility and overseeing all technical aspects of SCADA, automation systems, electrical, and electronic security installations for Repair and Replacement and Capital Improvement Projects.
- Development of a SCADA Master Plan, which included standardized Ethernet-based control system architectures, project planning, and budgeting over a five year period.
- Design and implementation of a revised SCADA system communication infrastructure for RTU systems.
- Development of cybersecurity policies and installations.

Edward A. Wicklein, P.E.

Edward A. Wicklein has 19 years of experience in all phases of modeling including code development, grid generation, flow analysis, and data visualization. Projects include pump intake modeling, modeling of junctions and flow splits, as well as detailed modeling of most of the major wastewater treatment components and processes.

Role

Computation Fluids Dynamics
Operations Area 3

Office Location

Seattle, WA

Education

MS Civil Engineering, Hydraulics, Washington State University, 2000

BS Civil Engineering, Washington State University, 1998

Licenses

Civil Engineer, Washington, California, Florida, Colorado

Professional Affiliations

Water Environment Federation

American Water Works Association

International Water Association

Hydraulic Institute

Relevant Experience

→ Developed a CFD model of the City of American Canyon, California, WWTP Aeration Basins. The existing basins had poor flow split between the four basins, and poor RAS mixing or short circuiting within the basins. The CFD model evaluated baffling and other geometric changes to improve the flow split between the basins, improve mixing, and reduce short-circuiting within the basins.

→ CFD modeling of an influent screen structure. The installed system consisted of three screen channels. The interaction of the 3D flow with the geometry led to an uneven flow split between the screen channels. The CFD model was used to investigate possible retrofit solutions to balance the flow between the screen channels.

→ CFD modeling engineer for the Water Supply Blue-Green Algae Emergency Support Services for the City of Salem, Oregon. Provided emergency support services for recommending, designing, and implementing an immediate response plan for removal of algal toxins. High levels of cyanotoxins in the raw water at Salem's Geren Island Water Treatment Facility led to the exceedance of health advisory levels. Responsibilities included CFD modeling of the existing South Basin to estimate the effective settling time through the South Basin if two feet of sediment were to be removed from the Basin.

→ CFD analysis of the secondary clarifiers flow splitting channel and secondary clarifier sedimentation capacity for the City of Richmond, California, 20-mgd WWTP. The plant has three square clarifiers with one offset from the aeration basins leading to uneven flow splitting. A CFD model was used to evaluate inlet gate settings and operation combinations to balance flows between the clarifiers. A 3D model including solids was developed for the square clarifier design and used to determine existing capacity, as well as improvements that could be easily retrofit into the tanks to increase settling capacity at minimal costs.

→ CFD modeling of JEA Buckman Street Secondary and Disinfection Process Hydraulics, Jacksonville, Florida. The 52.5 mgd plant has hydraulics limitations through the secondary process during peak events up to 157 mgd. As part of a UV system upgrade, the hydraulics were evaluated using 3D CFD modeling to identify the limitations that conventional 1D hydraulic profile analyses had not identified. The CFD modeling shows the problems were due to poor approach conditions to many fittings causing higher than anticipated losses. The model was used to develop improvements to reduce system losses.

→ CFD modeling of the Plant 1 headworks for the Orange County Sanitation District, California. Two models were developed: one of the pump station and one of the grit tanks. The pump station model was used to investigate options to increase the peak flow from 280 mgd to 320 mgd reusing as much of the existing wet pit/dry pit infrastructure. A model of the existing aerated grit tanks was also developed to evaluate options to similarly increase capacity, as well as generally increase performance. The model included grit particle tracking bases on field grit measurements to quantify performance and compare geometric changes.

→ CFD modeling of a new grit collection tank for the City of Winnemucca, Nevada. The CFD model was used to optimize the geometry of the new tank to maximize grit capture through adjusting the tank flow distribution baffling. The CFD model included grit particle tracking to better quantify performance differences.

• *SECTION 8: OFFICE LOCATIONS*

Office Locations

Carollo's Coral Springs office is just over nine miles from the City of Pompano Beach.

Carollo will provide responsive service from our Coral Springs office, which is 9.9 miles away from the City. We currently have 24 staff locally to serve the City, and this team from our Coral Springs and West Palm Beach offices, and this team has met nearly every need on your past projects.

In addition to Gamboa Engineers, which is located in Southwest Ranches, Florida, Carollo will be assisted by three Pompano Beach-based firms: DK Architects, Compass Point Surveyors, and Quest Engineering Services & Testing.

Shown on the next page is a map with all of our firm's south Florida office locations.

Carollo's Local Office Location:
2728 North University Drive,
Building 2700
Coral Springs, Florida 33065
Ph: 954-837-0030 | Fax: 954-837-0035

- **Professional Staff: 12**
- **Administrative Staff: 1**

Carollo and Subconsultant Office Locations in Southeast Florida.

Gamboa Engineers, LLC
17433 SW 65 CT
Southwest Ranches, FL 33331
Ph: 954-533-1121
– 6 Professional Staff
– 1 Administrative Staff

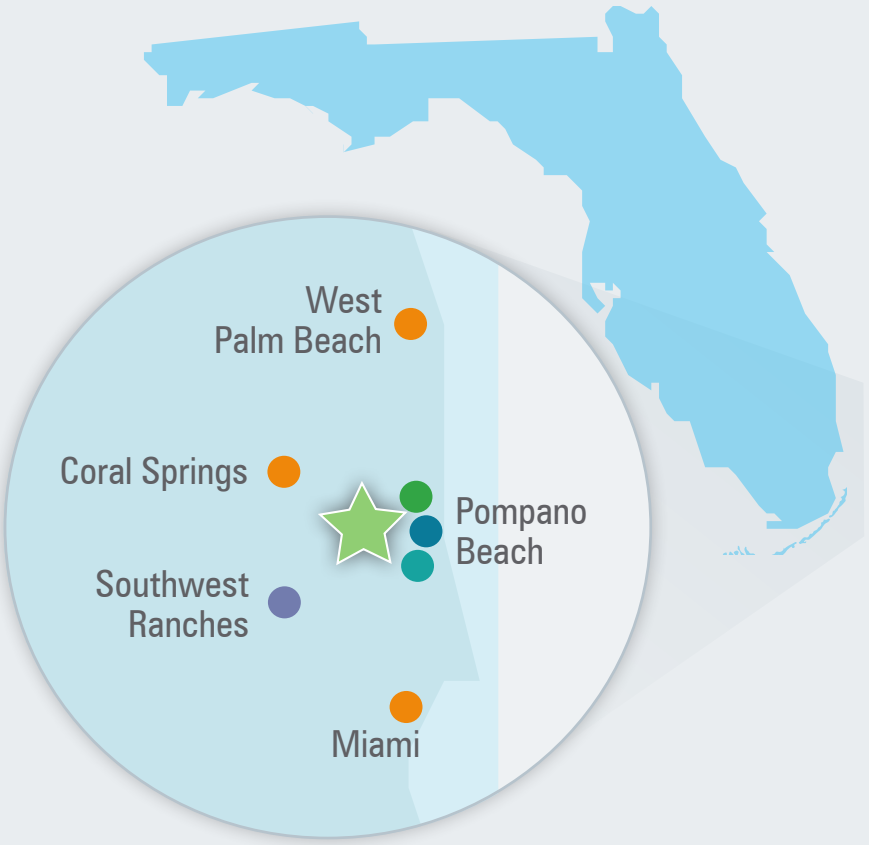
DK Architects
61 NE 1st Street, Suite 2
Pompano Beach, FL 33060
Ph: 954-941-3329
– 3 Professional Staff
– 1 Administrative Staff

Compass Point Surveyors, PL
3195 N. Powerline Road #112
Pompano Beach, Florida 33069
Ph: 954-332-8181
– 9 Professional Staff
– 2 Administrative Staff

Quest Engineering Services & Testing, Inc.
2737 NW 19th Street
Pompano Beach, FL 33069
Ph: 954-582-9800
– 7 Professional Staff
– 3 Administrative Staff

Carollo Engineers West Palm Beach
2056 Vista Pkwy Suite 400
West Palm Beach, FL 33411
Ph: 561-868-6400
– 10 Professional Staff
– 1 Administrative Staff

Carollo Engineers Coral Springs
2728 N University Drive
Coral Springs, FL 33065
Ph: 954-837-0030
– 12 Professional Staff
– 1 Administrative Staff



• *SECTION 9: LOCAL BUSINESSES*

Local Businesses

ENCLOSED:

- Exhibit "A" Local business participation form.
- Exhibit "B" Letter of intent to perform as a local subcontractor:
  - DK Architects
  - Compass Point Surveyors, PL
  - Quest Engineering Services & Testing, Inc.
- Exhibit "C" unavailability form – N/A.
- Exhibit "D" good faith effort report.
- Business tax receipts for local businesses.

LOCAL BUSINESS EXHIBIT "A"
CITY OF POMPANO BEACH, FLORIDA
LOCAL BUSINESS PARTICIPATION FORM

Solicitation Number & Title: Continuing Contract for Civil Engineering Services for Various City Projects

Prime Contractor's Name: Carollo Engineers, Inc.

Name of Firm, Address	Contact Person, Telephone Number	Type of Work to be Performed/Material to be Purchased	Contract Amount or %
DK Architects	954-941-3329	Architecture, Site Plan, Permitting	TBD*
61 NE 1st St., Suite 2, Pompano Beach, FL 33060			
Compass Point Surveyors, PL	954-322-8181	Surveying	TBD*
3195 N. Powerline Rd. #112, Pompano Beach, FL 33069			
Quest Engineering Services & Testing, Inc.	954-852-9800	Geotechnical	TBD*
2737 NW 19th St., Pompano Beach, FL 33069			

LOCAL BUSINESS EXHIBIT "A"

LOCAL BUSINESS EXHIBIT "B"
LOCAL BUSINESS
LETTER OF INTENT TO PERFORM AS A LOCAL SUBCONTRACTOR

Solicitation Number_____

TO: Carollo Engineers, Inc.
(Name of Prime or General Bidder)

The undersigned City of Pompano Beach business intends to perform subcontracting work in connection with the above contract as (check below)

_____ an individual _X_ a corporation

_____ a partnership _____ a joint venture

The undersigned is prepared to perform the following work in connection with the above Contract, as hereafter described in detail:

New building facility design and site planning, permitting, LEED certification,
and construction administration.

at the following price: TBD

_____
(Date)

Design Kollaborative Architects/Planners
(Print Name of Local Business Contractor)

61 NE 1st St., Suite 2
(Street Address)

Pompano Beach, FL 33060
(City, State Zip Code)

BY: _____
(Signature)

IMPORTANT NOTE: Signatures on this form MUST be by an authorized employee of Subcontractor and must be uploaded to the Response Attachment Tab

LOCAL BUSINESS EXHIBIT "B"

LOCAL BUSINESS EXHIBIT "B"
LOCAL BUSINESS
LETTER OF INTENT TO PERFORM AS A LOCAL SUBCONTRACTOR

Solicitation Number_____

TO: Carollo Engineers, Inc.
(Name of Prime or General Bidder)

The undersigned City of Pompano Beach business intends to perform subcontracting work in connection with the above contract as (check below)

_____ an individual
X a corporation
_____ a partnership
_____ a joint venture

The undersigned is prepared to perform the following work in connection with the above Contract, as hereafter described in detail:

Surveying services.

at the following price: TBD

_____
(Date)

Compass Point Surveyors, PL
(Print Name of Local Business Contractor)

3710 Park Central Blvd N.
(Street Address)

Pompano Beach, Florida 33064
(City, State Zip Code)

BY: _____
(Signature)

IMPORTANT NOTE: Signatures on this form MUST be by an authorized employee of Subcontractor and must be uploaded to the Response Attachment Tab

LOCAL BUSINESS EXHIBIT "B"

LOCAL BUSINESS EXHIBIT "B"
LOCAL BUSINESS
LETTER OF INTENT TO PERFORM AS A LOCAL SUBCONTRACTOR

Solicitation Number_____

TO: Carollo Engineers, Inc.
(Name of Prime or General Bidder)

The undersigned City of Pompano Beach business intends to perform subcontracting work in connection with the above contract as (check below)

_____ an individual
X a corporation
_____ a partnership
_____ a joint venture

The undersigned is prepared to perform the following work in connection with the above Contract, as hereafter described in detail:

Geotechnical engineering, construction materials testing, and special (structural) inspection services.

at the following price: TBD

_____
(Date)

Quest Engineering Services & Testing, Inc.
(Print Name of Local Business Contractor)
2737 NW 19th St.
(Street Address)
Pompano Beach, FL 33069
(City, State Zip Code)
BY: K. V. Sailappan
(Signature)

IMPORTANT NOTE: Signatures on this form MUST be by an authorized employee of Subcontractor and must be uploaded to the Response Attachment Tab

LOCAL BUSINESS EXHIBIT "B"

Not Applicable

LOCAL BUSINESS EXHIBIT "C

LOCAL BUSINESS
UNAVAILABILITY FORM

BID #_____

I,_____
(Name and Title)

of_____, certify that on the _____day of

_____, _____, I invited the following LOCAL BUSINESSES to bid work items to be performed in the City of Pompano Beach:

Business Name, Address	Work Items Sought	Form of Bid Sought (i.e., Unit Price, Materials/Labor, Labor Only, etc.)

Said Local Businesses:

___ Did not bid in response to the invitation

___ Submitted a bid which was not the low responsible bid

___ Other:_____

Name and Title: _____

Date: _____

Note: Attach additional documents as available.

LOCAL BUSINESS EXHIBIT "D"
GOOD FAITH EFFORT REPORT
LOCAL BUSINESS PARTICIPATION

BID # E-20-20

1. What portions of the contract have you identified as Local Business opportunities?

Architecture, Site Plan, Permitting

Surveying

Geotechnical

2. Did you provide adequate information to identified Local Businesses? Please comment on how you provided this information.

Yes

3. Did you send written notices to Local Businesses?

____ Yes ___X___ No

If yes, please include copy of the notice and the list of individuals who were forwarded copies of the notices.

4. Did you advertise in local publications?

____ Yes ___X___ No

If yes, please attach copies of the ads, including name and dates of publication.

5. What type of efforts did you make to assist Local Businesses in contracting with you ?

Email and phone correspondence.

7. List the Local Businesses you will utilize and subcontract amount.

DK Architects $ TBD*

Compass Point Surveyors, PL $ TBD*

Quest Engineering Services & Testing, Inc. $ TBD*

8. Other comments: _____

LOCAL BUSINESS EXHIBIT “D” – Page 2

_____

_____

_____

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

115 S. Andrews Ave., Rm. A-100, Ft. Lauderdale, FL 33301-1895 – 954-831-4000

VALID OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

DBA:
Business Name: D K ARCHITECTS PLANNERS INC

Receipt #: 315-291
Business Type: ENGINEER (CORP ARCHITECT/PLANNERS)

Owner Name: D K ARCHITECTS PLANNERS INC
Business Location: 24 NE 24 AVE
POMPANO BEACH
Business Phone:

Business Opened: 12/17/1998
State/County/Cert/Reg: AR-6329
Exemption Code:

Rooms	Seats	Employees	Machines	Professionals
		5		

For Vending Business Only — Number of Machines: — Vending Type:

Tax Amount	Transfer Fee	NSF Fee	Penalty	Prior Years	Collection Cost	Total Paid
30.00	0.00	0.00	0.00	0.00	0.00	30.00

THIS RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS

THIS BECOMES A TAX RECEIPT

WHEN VALIDATED

This tax is levied for the privilege of doing business within Broward County and is non-regulatory in nature. You must meet all County and/or Municipality planning and zoning requirements. This Business Tax Receipt must be transferred when the business is sold, business name has changed or you have moved the business location. This receipt does not indicate that the business is legal or that it is in compliance with State or local laws and regulations.

Mailing Address:

D K ARCHITECTS PLANNERS INC
24 NE 24 AVE
POMPANO BEACH, FL 33062

Receipt #1CP-18-00009097
Paid 07/12/2019 30.00
07/11/2019 Effective Date

2019 - 2020

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

pompano beach
Florida's Warmest Welcome

CITY OF POMPANO BEACH
BUSINESS TAX RECEIPT
FISCAL YEAR: 2019 - 2020

Business Tax Receipt Valid from: October 1, 2019 through September 30, 2020

4459900 9/18/2019
COMPASS POINT SURVEYORS PL
3195 N POWERLINE RD #112

POMPANO BEACH FL 33069

THIS IS NOT A BILL

THIS IS YOUR BUSINESS TAX RECEIPT. PLEASE POST IN A CONSPICUOUS PLACE AT THE BUSINESS LOCATION.

BUSINESS OWNER: COMPASS POINT SURVEYORS PL
BUSINESS LOCATION: 3195 N POWERLINE RD 112 POMPANO BEACH FL

RECEIPT NO:	**CLASSIFICATION**
20-00087031	**PROFESSIONAL OFFICE (SEE REQUIREMENTS)**

NOTICE: A NEW APPLICATON MUST BE FILED IF THE BUSINESS NAME, OWNERSHIP OR ADDRESS IS CHANGED. THE ISSUANCE OF A BUSINESS TAX RECEIPT SHALL NOT BE DEEMED A WAIVER OF ANY PROVISION OF THE CITY CODE NOR SHALL THE ISSUANCE OF A BUSINESS TAX RECEIPT BE CONSTRUED TO BE A JUDGEMENT OF THE CITY AS TO THE COMPETENCE OF THE APPLICANT TO TRANSACT BUSINESS. **THIS DOCUMENT CANNOT BE ALTERED**.

BUSINESS TAX RECEIPTS EXPIRE SEPTEMBER 30TH OF EACH YEAR

pompano beach
Florida's Warmest Welcome

CITY OF POMPANO BEACH
BUSINESS TAX RECEIPT
FISCAL YEAR: 2019 - 2020

Business Tax Receipt Valid from: October 1, 2019 through September 30, 2020

4441289 9/24/2019
QUEST ENGINEERING SERVICES
& TESTING INC
2737 NW 19 ST
POMPANO BEACH FL 33069

THIS IS NOT A BILL

THIS IS YOUR BUSINESS TAX RECEIPT. PLEASE POST IN A CONSPICUOUS PLACE AT THE BUSINESS LOCATION.

BUSINESS OWNER: QUEST ENGINEERING SERVICES &
BUSINESS LOCATION: 2737 NW 19 ST POMPANO BEACH FL

RECEIPT NO:	**CLASSIFICATION**
20-00065333	**PROFESSIONAL OFFICE (SEE REQUIREMENTS)**

NOTICE: A NEW APPLICATON MUST BE FILED IF THE BUSINESS NAME, OWNERSHIP OR ADDRESS IS CHANGED. THE ISSUANCE OF A BUSINESS TAX RECEIPT SHALL NOT BE DEEMED A WAIVER OF ANY PROVISION OF THE CITY CODE NOR SHALL THE ISSUANCE OF A BUSINESS TAX RECEIPT BE CONSTRUED TO BE A JUDGEMENT OF THE CITY AS TO THE COMPETENCE OF THE APPLICANT TO TRANSACT BUSINESS. **THIS DOCUMENT CANNOT BE ALTERED**.

BUSINESS TAX RECEIPTS EXPIRE SEPTEMBER 30TH OF EACH YEAR

• *SECTION 10: LITIGATION*

Litigation

Carollo has been involved in the following litigation within the past five (5) years arising out of our firm's performance of professional services:

- In 2015, Carollo and a client were both the subject of a lawsuit filed by a homeowner related to dwindling water supplies and questioned water rights. Carollo was subsequently dismissed from the lawsuit, but that dismissal is now under appeal.
- 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. Carollo was subsequently dismissed from the lawsuit.
- In 2015, Carollo, Carollo's client, and others were the subject of a lawsuit filed by an employee of the client who was injured while performing maintenance activities not related to Carollo's design improvements and/or Carollo services to the client. Carollo was subsequently dismissed from the lawsuit.
- In 2015, Carollo and a paint manufacturer were the subject of a lawsuit filed by a coatings subcontractor related to the subcontractor's failure to properly prepare the painting substrate and the resultant failure of the coating. The matter was submitted to mediation and thereafter settled with no admission of fault by Carollo.
- 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 was subsequently dismissed from the lawsuit.
- In 2017, Carollo was brought into a lawsuit between a client and the construction contractor claiming project delays related to the construction of a new wastewater treatment plant. Carollo denies responsibility for any of the claims. The lawsuit is in progress.
- In 2018, Carollo, the construction contractor, and the client were the subject of a lawsuit filed by property owners along a sewer interceptor realignment project where construction operations extended beyond the originally projected construction completion date. The matter was submitted to mediation and thereafter settled with no admission of fault by Carollo.
- In 2019, Carollo and several other large water engineering firms doing business in Florida were sued by a private citizen who has a history of suing governmental entities (i.e., his most recent lawsuit was against the Federal Reserve). The overall allegations of the citizen center around claims that Carollo was working with the other noted water firms to hide an alleged underground water source on the plaintiff's/citizen's property from our Florida clients. The lawsuit was dismissed.
- In 2020, Carollo and their joint venture partner were the subject of a lawsuit filed by a client related to tank corrosion as part of a design-build project completed in 2005. Carollo denies responsibility for any of the claims. The lawsuit is in progress.

• *SECTION 11: CITY FORMS*

City Forms

E-20-20 CONTINUING CONTRACT FOR CIVIL ENGINEERING SERVICES FOR VARIOUS CITY PROJECTS

Elizabeth Fujikawa, LEED AP, BCEE Vice President

Carollo Engineers, Inc.

86-0899222

2728 North University Drive, Building 2700

Coral Springs, FL 33065

954-837-0030 954-837-0035

efujikawa@carollo.com

TIER 1/TIER 2 COMPLIANCE FORM

IN ORDER FOR YOUR FIRM TO COMPLY WITH THE CITY'S LOCAL BUSINESS PROGRAM AS A TIER 1 OR TIER 2 VENDOR, BIDDERS MUST COMPLETE THE INFORMATION BELOW AND UPLOAD THE FORM TO THE RESPONSE ATTACHMENTS TAB IN THE EBID SYSTEM.

TIER 1 LOCAL VENDOR

_____ My firm has maintained a permanent place of business within the city limits and maintains a staffing level, within this local office, of at least 10 % who are residents of the City of Pompano Beach.

And/Or

_____ My firm has maintained a permanent place of business within the city limits and my submittal includes subcontracting commitments to Local Vendors Subcontractors for at least 10 % of the contract value.

Or

__X__ My firm does not qualify as a Tier 1 Vendor.

TIER 2 LOCAL VENDOR

_____ My firm has maintained a permanent place of business within Broward County and maintains a staffing level, within this local office, of at least 15% who are residents of the City of Pompano Beach

And/Or

__X__ My firm has maintained a permanent place of business within Broward County and my submittal includes subcontracting commitments to Local Vendors Subcontractors for at least 20% of the contract value.

Or

_____ My firm does not qualify as a Tier 2 Vendor.

I certify that the above information is true to the best of my knowledge.

July 30, 2020
(Date)

Carollo Engineers, Inc.
(Name of Firm)

BY: _____
(Name)

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

115 S. Andrews Ave., Rm. A-100, Ft. Lauderdale, FL 33301-1895 – 954-831-4000

VALID OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

DBA:
Business Name: CAROLLO ENGINEERS INC

Receipt #: 315-581
Business Type: ENGINEER (ENGINEER)

Owner Name: CAROLLO ENGINEERS INC
Business Location: 2728 N UNIVERSITY DR BLDG 270
CORAL SPRINGS
Business Phone: 954-837-0030

Business Opened: 01/01/2005
State/County/Cert/Reg: 8571
Exemption Code:

Rooms	Seats	Employees	Machines	Professionals
		2		

For Vending Business Only

Number of Machines: Vending Type:

Tax Amount	Transfer Fee	NSF Fee	Penalty	Prior Years	Collection Cost	Total Paid
30.00	0.00	0.00	0.00	0.00	0.00	30.00

THIS RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS

THIS BECOMES A TAX RECEIPT

WHEN VALIDATED

This tax is levied for the privilege of doing business within Broward County and is non-regulatory in nature. You must meet all County and/or Municipality planning and zoning requirements. This Business Tax Receipt must be transferred when the business is sold, business name has changed or you have moved the business location. This receipt does not indicate that the business is legal or that it is in compliance with State or local laws and regulations.

Mailing Address:

CAROLLO ENGINEERS, INC
4600 E WASHINGTON ST STE 500
PHOENIX, AZ 85034

Receipt #10B-18-00002380
Paid 07/15/2019 30.00

2019 - 2020

BIDDERS ARE TO COMPLETE FORM AND UPLOAD COMPLETED FORM TO THE EBID SYSTEM

EXHIBIT E

MINORITY BUSINESS ENTERPRISE PARTICIPATION

RLI #E-20-20

List all members of your team that are a certified Minority Business Enterprise (as defined by the State of Florida.) You must include copies of the MBE certificates for each firm listed with your electronic submittal.

Name of Firm	Certificate Included?
Gamboa Engineers, LLC	Yes
Quest Engineering Services & Testing, Inc.	Yes

State of Florida

Minority Business Certification

Gamboa Engineers, LLC

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

06/06/2019 to 06/06/2021

Jonathan R. Satter, Secretary
Florida Department of Management Services

office of supplier DIVERSITY

State of Florida

Minority Business Certification

Quest Engineering Sevices & Testing, Inc.

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

08/19/2019 to 08/19/2021

Jonathan R. Satter, Secretary
Florida Department of Management Services

Department of MANAGEMENT SERVICES
Office of Supplier Diversity

Office of Supplier Diversity
4050 Esplanade Way, Suite 380
Tallahassee, FL 32399
850-487-0915
www.dms.myflorida.com/osd

• SECTION 12: REVIEWED AND AUDITED FINANCIAL STATEMENT

Reviewed and Audited Financial Statements

CONFIDENTIAL

Summary Information Sheet
Carollo Engineers, Inc.
Balance Sheet
As of December 31, 2019

Assets

Cash	16,057,313
Receivables	64,680,363
Prepaid Expenses & Other Current Assets	13,340,286
Fixed Assets - net	15,606,526
Notes Receivables	670,874
Other Long Term Assets	107,775
Total Assets	**110,463,137**

Liabilities

Accounts Payable	19,567,203
Accrued Expenses & Other Current Liabilities	34,755,582
Other Long Term Liabilities	19,542,601
Owner's Equity	36,597,751
Total Liabilities & OE	**110,463,137**

Ash Wason, CFO

Carollo Engineers, Inc. (Carollo), has been in operation since 1933. Carollo's professional engineering services extend throughout the United States with offices in 44 cities, including major design centers in Walnut Creek, California; Orange County, California; Phoenix, Arizona; Denver Littleton, Colorado; Boise, Idaho and Dallas, Texas.

The firm has demonstrated a high level of fiscal responsibility throughout the years. Borrowings are on a short-term basis to meet cash requirements at peak times of the year.

The company has a banking relationship with National Bank of Arizona.

National Bank of Arizona
6001 N 24th St
Phoenix, AZ 85016
Rob Maver, Senior Vice President
Office (602) 235-6000
Direct (602) 212-8810

Some information indicating the capacity of the firm to handle large jobs is:

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gross Revenue (000)	146,215	148,542	154,924	173,142	211,667	247,550	271,810	300,457	311,211
ENR Ranking	77	73	79	79	69	65	59	59	50
# of Employees (avg.)	625	618	654	709	771	893	1,012	1,074	1,108

Carollo Engineers, Inc.
and Subsidiaries

Consolidated Financial Statements
As of and for the years ended December 31, 2019 and 2018

The report accompanying these financial statements was issued by BDO USA, LLP, a Delaware limited liability partnership and the U.S. member of BDO International Limited, a UK company limited by guarantee.

Carollo Engineers, Inc. and Subsidiaries

Consolidated Financial Statements
As of and for the years ended December 31, 2019 and 2018

Carollo Engineers, Inc. and Subsidiaries

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Tel: 602-956-3400
Fax: 602-956-3402
www.bdo.com

2555 E. Camelback Road, Suite 750
Phoenix, AZ 85016

Independent Auditor's Report

Board of Directors
Carollo Engineers, Inc.
Phoenix, Arizona

We have audited the accompanying consolidated financial statements of Carollo Engineers, Inc. and its subsidiaries (the "Company"), which comprise the consolidated balance sheets as of December 31, 2019 and 2018, and the related consolidated statements of income, shareholders' equity and cash flows for the years then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Carollo Engineers, Inc. and its subsidiaries as of December 31, 2019 and 2018, and the results of their operations and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of a Matter - COVID-19

As more fully described in Note 11 to the consolidated financial statements, the Company may be materially impacted by the outbreak of a novel coronavirus (COVID-19), which was declared a global pandemic by the World Health Organization in March 2020. Our opinion is not modified with respect to this matter.

Other Matter

Our audits were conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The information on pages 25 and 26, which is presented to highlight certain information in the Company's consolidated financial statements, is presented for purposes of additional analysis and is not a required part of the consolidated financial statements. Such highlighted information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The highlighted information has been subjected to the auditing procedures applied in the audits of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the highlighted information is fairly stated in all material respects in relation to the consolidated financial statements as a whole.

BDO USA, LLP
April 29, 2020

Consolidated Financial Statements

Carollo Engineers, Inc. and Subsidiaries

Consolidated Balance Sheets

December 31,	**2019**	2018
Assets		
Current assets		
Cash and cash equivalents	**$ 16,057,313**	$ 9,609,837
Contracts receivable	**63,876,655**	61,807,198
Contract retainages receivable	**803,708**	288,685
Receivables from employees	**190,002**	181,850
Prepaid expenses	**5,058,764**	3,808,395
Current portion of notes receivable from related parties	**3,519**	128,000
Contract assets	**8,091,520**	5,649,615
Total current assets	**94,081,481**	81,473,580
Property and equipment, net	**15,606,526**	11,530,721
Notes receivable from related parties	**667,355**	1,188,692
Refundable deposits and other assets	**107,775**	846,155
Total assets	**$ 110,463,137**	$ 95,039,148

See accompanying notes to consolidated financial statements.

Carollo Engineers, Inc. and Subsidiaries

Consolidated Balance Sheets (Continued)

December 31,	**2019**	2018
Liabilities and shareholders' equity		
Current liabilities		
Accounts payable	**$ 19,567,203**	$ 21,058,860
Accrued vacation and compensatory time	**8,711,026**	8,503,548
Other accrued liabilities	**2,334,052**	2,016,351
Current portion of non-voting shareholder liability	**365,661**	260,261
Contract liabilities	**21,344,843**	20,209,909
Accrued contract payable	**2,000,000**	1,675,000
Total current liabilities	**54,322,785**	53,723,929
Deferred rent and other liabilities	**5,792,761**	3,822,765
Non-voting shareholder liability	**13,749,840**	10,057,024
Total liabilities	**73,865,386**	67,603,718
Commitments and contingencies (note 9)		
Shareholders' equity		
Common stock, $0.0001 par value; 102,778 shares authorized, issued and outstanding	**10**	10
Additional paid-in capital	**4,164,362**	1,097,424
Retained earnings	**43,820,544**	41,159,646
Share purchase notes receivable	**(1,051,374)**	(1,233,369)
Shareholder equity line of credit	**(1,310,500)**	(1,398,000)
Treasury stock, at cost; 7,370 and 11,392 shares at December 31, 2019 and 2018, respectively	**(9,025,291)**	(12,190,281)
Total shareholders' equity	**36,597,751**	27,435,430
Total liabilities and shareholders' equity	**$ 110,463,137**	$ 95,039,148

See accompanying notes to consolidated financial statements.

Carollo Engineers, Inc. and Subsidiaries

Consolidated Statements of Income

Year ended December 31,	**2019**	2018
Engineering and management service revenues	**$ 311,211,328**	$ 300,456,850
Sub-consultants, management service and other direct costs	**82,347,130**	83,655,303
Net earned revenues	**228,864,198**	216,801,547
Direct labor	**67,006,134**	62,677,262
Gross profit	**161,858,064**	154,124,285
General and administrative expenses		
Direct general expenses	**58,660,038**	61,992,262
Business development	**22,902,063**	22,255,608
Corporate administration	**47,223,949**	39,077,596
Total general and administrative expenses	**128,786,050**	123,325,466
Operating profit	**33,072,014**	30,798,819
Other income (expense):		
Interest and other income	**441,209**	163,771
Interest expense	**(695,179)**	(605,444)
Total other expense	**(253,970)**	(441,673)
Net income	**$ 32,818,044**	$ 30,357,146

See accompanying notes to consolidated financial statements.

Carollo Engineers, Inc. and Subsidiaries

Consolidated Statements of Shareholders' Equity

	Common stock Shares	Amount	Additional paid-in capital	Retained earnings	Share purchase notes receivable	Shareholder equity line of credit	Treasury stock	Total
Balance, December 31, 2017	102,778	$ 10	$ 1,097,424	$ 37,835,303	$ (1,229,745)	$ (1,133,000)	$ (12,108,021)	$ 24,461,971
Net issuance of share purchase notes receivable	-	-	-	-	(3,624)	-	-	(3,624)
Net advances to shareholders on equity line of credit	-	-	-	-	-	(265,000)	-	(265,000)
Sale of treasury stock in buy/sell transaction	-	-	-	-	-	-	7,226,826	7,226,826
Purchase of treasury stock in buy/sell transaction	-	-	-	-	-	-	(7,309,086)	(7,309,086)
Net income	-	-	-	30,357,146	-	-	-	30,357,146
Distributions	-	-	-	(27,032,803)	-	-	-	(27,032,803)
Balance, December 31, 2018	102,778	$ 10	$ 1,097,424	$ 41,159,646	$ (1,233,369)	$ (1,398,000)	$ (12,190,281)	$ 27,435,430
Net paydowns of share purchase notes receivable	-	-	-	-	181,995	-	-	181,995
Net repayments from shareholders on equity line of credit	-	-	-	-	-	87,500	-	87,500
Sale of treasury stock in buy/sell transaction	-	-	3,066,938	-	-	-	3,701,103	6,768,041
Purchase of treasury stock in buy/sell transaction	-	-	-	-	-	-	(536,113)	(536,113)
Net income	-	-	-	32,818,044	-	-	-	32,818,044
Distributions	-	-	-	(30,157,146)	-	-	-	(30,157,146)
Balance, December 31, 2019	**102,778**	**$ 10**	**$ 4,164,362**	**$ 43,820,544**	**$ (1,051,374)**	**$ (1,310,500)**	**$ (9,025,291)**	**$ 36,597,751**

See accompanying notes to consolidated financial statements.

Carollo Engineers, Inc. and Subsidiaries

Consolidated Statements of Cash Flows

Year ended December 31,	**2019**	2018
Cash flows from operating activities		
Net income	**$ 32,818,044**	$ 30,357,146
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	**3,469,654**	3,248,099
Loss on sale of property and equipment	**67,782**	159,198
Notes receivable accrued interest	**(51,853)**	(64,600)
Non-voting shareholder compensation expense	**2,301,563**	1,591,032
Changes in operating assets and liabilities:		
Contracts receivable	**(2,069,457)**	(6,189,503)
Contract retainages receivable	**(515,023)**	388,783
Receivable from employees	**(8,152)**	(181,571)
Prepaid expenses	**(1,250,368)**	232,124
Contract assets	**(2,441,906)**	1,907,405
Refundable deposits and other assets	**738,380**	119,756
Accounts payable	**(1,491,657)**	5,095,584
Accrued vacation and compensatory time	**207,478**	860,407
Other accrued liabilities	**317,701**	213,003
Contract liabilities	**1,134,934**	613,910
Accrued contract payable	**325,000**	75,000
Deferred rent and other liabilities	**(557,274)**	(459,952)
Net cash provided by operating activities	**32,994,846**	37,965,821
Cash flows from investing activities		
Purchases of property and equipment	**(5,085,971)**	(4,596,273)
Refund from landlord for leasehold improvements	**-**	317,793
Advances on notes receivable from related parties	**-**	(100,000)
Payment received on notes receivable from related parties	**697,671**	584,812
Net cash used in investing activities	**(4,388,300)**	(3,793,668)
Cash flows from financing activities		
Cash received from buying shareholders in buy/sell transaction	**6,768,041**	7,226,826
Cash paid to selling shareholders in buy/sell transaction	**(536,113)**	(7,309,086)
Paydowns (issuance) of share purchase notes receivable, net	**181,995**	(3,624)
Repayments (advances) of shareholders on equity line of credit	**87,500**	(265,000)
Contributions received from non-voting shareholders	**1,879,842**	1,431,950
Payments made to non-voting shareholders	**(383,189)**	(299,120)
Distributions	**(30,157,146)**	(27,032,803)
Net cash used in financing activities	**(22,159,070)**	(26,250,857)
Net change in cash and cash equivalents	**6,447,476**	7,921,296
Cash and cash equivalents, beginning of year	**9,609,837**	1,688,541
Cash and cash equivalents, end of year	**$ 16,057,313**	$ 9,609,837
Supplemental disclosure of cash flow information		
Cash paid for interest	**$ 695,179**	$ 656,204
Supplemental disclosure of non-cash investing activities		
Property and equipment financed by landlord	**$ 2,527,270**	$ -

See accompanying notes to consolidated financial statements.

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

1. Nature of Business and Significant Accounting Policies

Nature of Business

Carollo Engineers, Inc. ("Carollo" or the "Company") was established in 1933 and provides a full range of planning, design, and construction management services to meet the water and wastewater needs of municipalities, public agencies, and industrial clients. Services are provided from offices throughout the United States.

Principles of Consolidation

The consolidated financial statements include the accounts of Carollo Engineers, Inc., and its two wholly-owned subsidiaries (Carollo Constructors, LLC; and Carollo Engineers, Inc. PC). Carollo Constructors, LLC operations consist of design-build contracts in the water and wastewater industry. Carollo Engineers, Inc. PC was set up for doing business in New York, and has not yet incurred any business transactions. All significant intercompany transactions have been eliminated in consolidation.

Basis of Accounting

The accounting and reporting policies of the Company are in accordance with accounting principles generally accepted in the United States of America, which is based on the accrual method of accounting.

Cash and Cash Equivalents

Carollo considers all highly liquid investments with original maturities of three months or less to be cash equivalents. Carollo places its cash with a financial institution and may, at times, maintain a balance in excess of the amount insured by the Federal Deposit Insurance Corporation ("FDIC"). In addition, Carollo may invest excess cash in investments that are not insured by the FDIC.

Contracts Receivable and Contracts Retainages Receivable

Contracts receivable represents amounts billed and currently due from customers. Carollo performs ongoing credit evaluations of its customers' financial condition to support contracts receivable. Carollo considers factors surrounding the credit risk of specific customers, historical trends, and other information. Carollo provides an allowance for doubtful collections, which is based upon a review of outstanding receivables, historical collection information, and existing economic conditions. Normal contracts receivable are due 30 days after the issuance of the invoice. Contract retainages receivable are due 30 days after completion of the project and acceptance by the owner. Receivables are written off when deemed uncollectible and recoveries of amounts previously written off are recorded in income when received. Carollo believes all contracts receivable balances are fully collectible at December 31, 2019 and 2018, and accordingly, no allowance for doubtful accounts has been recorded.

Notes Receivable from Related Parties

Carollo offers loans to certain employees for relocation expenses. These related party loans are recognized as a note receivable to the Company and are reported at amortized cost. Interest repayment terms and loan maturity are as described in Note 4. The notes receivable are secured by

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

either real estate owned by the borrower or on the underlying shares of the Company. Carollo believes all notes receivable balances are fully collectible at December 31, 2019 and 2018, and accordingly, no allowance for doubtful accounts has been recorded.

Property and Equipment

Property and equipment are carried at cost less accumulated depreciation and amortization. Depreciation and amortization is computed principally on the straight-line method over the following estimated useful lives of the related assets.

	Useful Life
Furniture and equipment	12 years
Engineering equipment	10-12 years
Automotive equipment	7 years
Leasehold improvements	Shorter of asset's useful life or lease term
Computer equipment	5-7 years
Software	5 years
Office equipment	5-7 years

When assets are retired or otherwise disposed of, the cost and related accumulated depreciation and amortization are removed from the accounts, and any resulting gain or loss is recognized in income for the period. The cost of maintenance and repairs is charged to income as incurred. Significant renewals and betterments are capitalized and depreciated over the estimated useful life of the asset.

Long-lived Assets

Carollo reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. Impairment losses, where identified, are determined as the excess of the carrying value over the estimated fair value of the long-lived asset. Carollo assesses the recoverability of the carrying value of assets held for use based on a review of projected undiscounted cash flows. No impairments were recorded during the years ended December 31, 2019 and 2018.

Operating Leases

The Company has certain operating leases for its buildings and equipment. Leases that do not transfer substantially all benefits and risks of ownership to the Company or meet any of the other criteria for capitalization are classified as an operating lease. For these leases, the lease payments are recognized as expense on a straight-line basis over the lease term.

Treasury Stock

As part of Carollo's ownership transition plan, the Company repurchases shares of common stock from existing shareholders who elect to divest in the Company each year. The repurchased shares are then offered to new shareholders approved by the board of directors. During 2019 and 2018, the Company repurchased 346 and 5,420 shares, at an aggregate cost of $536,113 and $7,309,086, respectively and sold 4,368 and 5,359 shares, at an aggregate cost of $6,768,041 and $7,226,826,

respectively. The Company holds repurchased shares of its common stock as treasury stock and accounts for treasury stock under the cost method.

Distributions

A portion of the Company's earnings each year are distributed to its shareholders and are awarded when the Board of Directors approves rather than annually. Cash distributions paid in 2019 and 2018 totaled $30,157,146 and $27,032,803, respectively, and have been charged to retained earnings.

Revenue Recognition

In December 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standard Update ("ASU") 2016-20 amending the new revenue recognition standard that was issued in May 2014, ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)*. The amendments do not change the core principles of the standard but clarify certain narrow aspects of the standard including the scope, contract cost accounting, disclosures, illustrative examples, and other matters. The ASU becomes effective concurrently with ASU 2014-09, which takes effect for annual reporting periods beginning after December 15, 2018 and established a comprehensive revenue recognition standard for virtually all industries in U.S. GAAP, including those that previously followed industry-specific guidance. The revenue standard's core principle is built on the contract between a vendor and a customer for the provision of goods and services. It attempts to depict the exchange of rights and obligations between the parties in the pattern of revenue recognition based on the consideration to which the vendor is entitled. To accomplish this objective, the standard requires five basic steps: (i) identify the contract with the customer, (ii) identify the performance obligations in the contract, (iii) determine the transaction price, (iv) allocate the transaction price to the performance obligations in the contract, and (v) recognize revenue when (or as) the entity satisfies a performance obligation.

On January 1, 2019, the Company adopted ASC 606, *Revenue from Contracts with Customers,* and all the related amendments and applied it to all contracts that were not completed as of January 1, 2019 using the modified retrospective method. The Company did not have any adjustment to the opening balance of retained earnings as a result of adoption. In accordance with ASC 606, revenue is recognized when promised goods or services are transferred to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services.

For the periods presented prior to the adoption of ASC 606, revenues from contracts were recognized in accordance with ASC Topic 605-35, "*Revenue Recognition - Construction- type and Production-type Contracts*".

The Company recognizes revenue for its construction contracts under fixed-price and cost plus fixed fee contracts over time because its performance does not create an asset with alternative use, and it has an enforceable right to payment. Furthermore, the work performed under the Company's contracts represents a single combined performance obligation for the planning, design, and construction management services given the high level of integration that is involved in these arrangements. For such arrangements, the Company recognizes revenue using cost-based input methods, which recognizes revenue and gross profit as work is performed based on the relationship between actual costs incurred compared to the total estimated costs of the contract, after consideration of customers' commitment to perform its obligations under the contract, which is typically measured through the receipt of cash deposits or other forms of financial security.

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

In applying cost-based input methods of revenue recognition, the Company uses costs incurred relative to total estimated costs to determine the extent of progress towards completion. Cost-based input methods of revenue recognition are considered a faithful depiction of efforts to satisfy the Company's contracts and therefore reflect the transfer of goods to a customer under such contracts. This method can create the need for additional judgments related to the accounting for uninstalled materials and the recognition of contract costs. Contract costs include direct labor, material, and subcontractor costs, and those indirect costs related to contract performance, such as indirect labor, supplies, tools, repairs, depreciation, and insurance. Total estimated contract costs are based upon management's current estimate of total costs at completion.

Under this method, the timing of revenue recognition does not necessarily coincide with the timing of billings to customers. When revenue is recognized in advance of billings, it is classified within “contract assets" on the balance sheet. Conversely, when a billing is made in advance of revenue recognition, it is classified within "contract liabilities" on the balance sheet. In accordance with industry practice, the Company classifies as current all assets and liabilities relating to the performance of contracts. The terms of the Company’s contracts generally range from six months to three years.

Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are determined at the contract level. Changes in job performance, job conditions, and estimated profitability, including those arising from final contract settlements, may result in revisions to costs and income and are recognized in the period in which the revisions are determined.

Advertising Costs

Advertising costs are expensed as incurred. Advertising costs were $599,037 and $440,945 during the years ended December 31, 2019 and 2018, respectively, and are included as a component of general and administrative expenses on the consolidated statements of income.

Use of Estimates

The preparation of financial statements, in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”), requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Significant estimates and assumptions made by management are used for, but not limited to, the revenue recognition on construction contracts, costs incurred through each balance sheet date, useful lives of long-lived assets, net realizability of accounts receivable, and the value of the contractual guarantee under the Stock Purchase Program, as further disclosed in Note 10.

Fair Value Measurements and Financial Instruments

The fair value of a financial instrument is the amount that would be received in an asset sale or paid to transfer a liability in an orderly transaction between unaffiliated market participants. Assets and liabilities measured at fair value are categorized based on whether the inputs are observable in the market and the degree that the inputs are observable. The categorization of financial

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

instruments within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement.

The hierarchy is prioritized into three levels (with Level 3 being the lowest) defined as follows:

- Level 1, defined as observable inputs such as quoted market prices for identical instruments in active markets;
- Level 2, defined as inputs other than quoted market prices in active markets that are either directly or indirectly observable; and
- Level 3, defined as unobservable inputs in which little or no market data exists, therefore, requiring an entity to develop its own assumptions about the assumptions market participants would use in pricing the assets or liabilities.

Cash and cash equivalents, contracts receivable, contract retainages receivable, contract assets, accounts payable and other accrued liabilities approximated their fair value at December 31, 2019 and 2018, due to their short maturities. Due to the nature of the notes receivable from related parties and notes payable and lack of market information and comparable items of similar instruments, it is not practicable to estimate the fair value of such instruments.

Income Taxes

Carollo has elected S Corporation status for income tax purposes. Therefore, the taxable income of Carollo is required to be reported by the shareholders on their individual income tax returns. Accordingly, no income tax provision has been included in these financial statements.

The accounts of Carollo Constructors, LLC and Carollo Engineers, Inc. PC are included in the Carollo consolidated income tax return, and both subsidiaries are considered to be disregarded entities for tax purposes.

Reclassifications

Certain prior year amounts have been reclassified to conform to the current year's presentation. The reclassifications had no effect on previously reported net income.

Recent Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. Among other things, these amendments require the measurement of all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. Organizations will now use forward-looking information to better inform their credit loss estimates. Many of the loss estimation techniques applied today will still be permitted, although the inputs to those techniques will change to reflect the full amount of expected credit losses. The new standard is effective for reporting periods beginning after December 15, 2021, with early adoption permitted for all organizations with fiscal years beginning after December 15, 2018. Management is currently evaluating the effect that implementation of the new standard will have on the Company's financial condition and results of operations.

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

In February 2016, the FASB issued ASU 2016-02, *Leases*. The new standard establishes a right-of-use ("ROU") model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the consolidated statements of operations. The new standard is effective for fiscal years beginning after December 15, 2021. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the consolidated financial statements, with certain practical expedients available. Management is currently evaluating the effect that implementation of the new standard will have on the Company's financial condition and results of operations.

2. Contracts in Progress

Following is a summary of contracts in progress:

December 31,	**2019**	2018
Costs and estimated earnings on uncompleted contracts	**$ 775,197,039**	$ 615,166,381
Billings applicable thereto	**(788,450,362)**	(629,726,675)
	$ (13,253,323)	$ (14,560,294)

These amounts are included in the accompanying consolidated balance sheet under the following captions:

December 31,	**2019**	2018
Contract assets	**$ 8,091,520**	$ 5,649,615
Contract liabilities	**(21,344,843)**	(20,209,909)
	$ (13,253,323)	$ (14,560,294)

The Company's remaining performance obligations with respect to backlog of signed contracts was $438,771,712 as of December 31, 2019.

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Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

3. Property and Equipment

Property and equipment consist of the following:

December 31,	**2019**	2018
Furniture and equipment	**$ 7,624,275**	$ 6,598,527
Engineering equipment	**2,751,618**	2,555,975
Automotive equipment	**78,872**	102,415
Leasehold improvements	**10,941,831**	8,927,628
Computer equipment	**21,225,592**	19,116,275
Software	**7,660,720**	7,490,894
Office equipment	**3,242,239**	2,950,951
	53,525,147	47,742,665
Less accumulated depreciation and amortization	**(37,918,621)**	(36,211,944)
Property and equipment, net	**$ 15,606,526**	$ 11,530,721

Depreciation and amortization expense for the years ended December 31, 2019 and 2018, was $3,469,654 and $3,248,099, respectively.

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Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

4. Notes Receivable from Related Parties

Current and long-term notes receivable from related parties consists of the following:

December 31,		**2019**		2018
In April 2012, Carollo issued a promissory note to an employee for $225,000. Interest is at 2.00%. Interest is payable annually on the outstanding balance. All unpaid principle and interest is due on or before April 29, 2027. The note is secured by real estate owned by the borrower.	**$**	**205,000**	$	205,000
In April 2012, Carollo issued a promissory note to an employee for $100,000. Interest is at prime and adjusts each January (5.50% at January 1, 2019). Interest is payable annually on the outstanding balance. Unpaid interest was added to the note balance. All unpaid principal and interest is due on or before October 16, 2028. The note is secured by real estate owned by the borrower.		**58,000**		90,000
In May 2012 and July 2012, Carollo issued a promissory note to an employee for $40,000 and 40,000, respectively. Interest is at prime and adjusts each January 1 (5.50% at January 1, 2019). Interest is payable quarterly on the outstanding balance. Unpaid interest is added to the note balance. Principal is due on or before May 4, 2026 and July 30, 2026, respectively. The note is secured by equity shares in Carollo stock.		**80,000**		80,000
In January 2013 and May 2013, Carollo issued a promissory note to an employee for $200,000 and $50,000, respectively. Interest is at prime and adjusts each January 1 (5.50% at January 1, 2019). Interest is payable at the borrower's discretion. Unpaid interest is added to the note balance. Principal is due on or before January 1, 2022. The note is secured by real estate owned by the borrower.		**324,355**		306,719
In June 2013, Carollo issued a promissory note to an employee for $30,000. Interest is at 3.75%. Interest is payable quarterly on the outstanding balance. All unpaid principal and interest is due on or before June 30, 2020, and is classified as current in the balance sheet. The note is secured by real estate owned by the borrower.		**3,519**		9,736
In June 2017, Carollo issued a promissory note to an employee for $185,000 and $15,000. Interest is at prime and adjusts each January 1 (5.50% at January 1, 2019). The note was repaid in full during 2019.		**-**		200,000
In November 2017, Carollo issued a promissory note to a shareholder for $450,000. Interest is at prime and adjusts each January 1 (5.50% at January 1, 2019). Interest accrues into the note balance. The note was repaid in full during 2019.		**-**		425,237
		670,874		1,316,692
Less: current portion of notes receivable from related parties		**3,519**		128,000
Notes receivable from related parties	**$**	**667,355**	$	1,188,692

5. Revolving Line of Credit

The Company has a revolving line of credit available to fund daily operations, which is part of the Company's Master Credit Agreement ("MCA") as further disclosed in Note 10. On January 1, 2019, the Company entered into the Seventh Restated Revolver with a maximum borrowing limit under the line of credit to $10 million. The line of credit bore interest at the greater of LIBOR plus 2.50% per annum or 3.5% per annum and matured on December 31, 2019. There were no amounts outstanding on the line of credit at December 31, 2019 and 2018. As of December 31, 2019, the line of credit supports standby letters of credit in the amount of $570,000. The revolving line of credit is secured by all assets including general intangibles, equity interests, reserve account, contracts,

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

commercial claims and intellectual property of the Company. The revolving line of credit is subject to financial covenants that require the Company to maintain a certain tangible net worth ratio, asset coverage ratio, funded debt to EBITDA ratio, and stock loan to EBITDA ratio. At December 31, 2019 and 2018, the Company was compliant with all financial covenants. Subsequent to year end, the Company entered into the Eighth Restated Revolver on January 1, 2020 to extend the maturity date to December 31, 2020, as further disclosed in Note 11.

6. Notes Payable – Shareholders

On January 1, 2019, notes payable were issued to shareholders in the amount of $18,957,146 allocated in proportion to each shareholder's ownership interest. The notes bore interest at 5.50% and were payable in four quarterly installments through December 31, 2019, which represent distributions paid. These notes were subordinated to the bank debt. On January 1, 2018, notes payable were issued to shareholders in the amount of $18,632,802 allocated in proportion to each shareholder's ownership interest. The notes bore interest at 4.50% and were payable in four quarterly installments through December 31, 2018, which represent distributions paid. These notes were subordinated to the bank debt. Notes payable to shareholders were fully repaid and amounted to zero at December 31, 2019 and 2018.

7. Non-Voting Shareholder Liability

During the year ended December 31, 2010, Carollo adopted a Non-Voting Stock Program which is a deferred compensation plan that allows certain employees to purchase shares which may appreciate in value based on the value of the underlying Carollo stock, but do not have voting rights or ownership interests in Carollo (Non-Voting Stock). Amounts earned under this program are paid in cash over five years upon the death, termination or contract end date of the employee. Notes payable to certain employees under the terms of the plan and included within the non-voting shareholder liability were $964,127 and $753,539 as of December 31, 2019 and 2018, respectively.

The Company will grant additional Non-Voting Stock shares to employees based on the total value of shares purchased by the employee as follows: $40,000 worth of shares granted for the first $100,000 worth of shares purchased, $30,000 worth of shares granted for the next $100,000 worth of shares purchased, $20,000 worth of shares granted for the next $100,000 worth of shares purchased and $10,000 worth of shares granted for the final $100,000 worth of shares purchased, up to the maximum permitted total purchase of $400,000 worth of shares. The Non-Voting Stock shares granted by the Company in excess of the purchased amount will vest over 5 years (20% per year). Compensation expense for the vesting of Non-Voting Stock shares for the years ended December 31, 2019 and 2018, was $2,301,563 and $1,591,032, respectively.

8. Retirement Plan

Carollo maintains a retirement plan under Internal Revenue Code Section 401(k). Voluntary contributions to the plan by employees are permissible but limited based on compensation. There were no discretionary contributions made to the plan for the years ended December 31, 2019 and 2018. Carollo makes matching contributions for employees up to certain limitations. Matching contributions were $3,937,790 and $3,858,963 for the years ended December 31, 2019 and 2018, respectively, and are included as a component of general and administrative expenses on the consolidated statements of income.

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

9. Commitments and Contingencies

Credit Risk

Credit risk with respect to contracts receivable and contract retainages receivable is concentrated to the extent that the majority of the customer base is municipalities and public agencies in the United States.

Leases

Carollo has leased office spaces and storage space under non-cancellable lease agreements which expire at various dates through December 2030 and require various minimum annual rental payments. The leases also require the payment of the property taxes, normal maintenance, and insurance on the properties and additional rentals based on percentages of total rentable area.

A summary of future minimum lease payments for all non-cancellable operating leases is as follows:

Years ending December 31,		
2020	$	6,889,288
2021		5,294,614
2022		4,550,608
2023		3,542,409
2024		3,051,505
Thereafter		9,546,638
	$	32,875,062

Rent expense for the years ended December 31, 2019 and 2018, was $9,525,288 and $8,943,290, respectively, and is included as a component of general and administrative expenses on the consolidated statements of income.

Legal

In the normal course of business, Carollo is a party to various claims and lawsuits incidental to its business. In the opinion of management, the ultimate resolution of these matters, individually and in the aggregate, is not expected to have a material adverse effect on Carollo's results of operations or financial position.

10. Stock Purchase Program

During 2010, the shareholders of the Company implemented a Stock Purchase Program to allow key employees the opportunity to purchase shares of the Company's common stock under a Master Credit Agreement ("MCA") with Carollo's primary financial institution. Under the terms of the MCA, employees enter into full recourse promissory notes directly with the financial institution to purchase shares of common stock. The notes bear interest at the Prime Rate on the date of execution and are adjusted to the prevailing prime rate annually on January 1st, and are to be repaid over ten years. The notes are collateralized by the shares of common stock and are guaranteed by Carollo. Carollo has a call option (but not the express obligation) to buy these notes from the bank.

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

Carollo is not considered an obligor, borrower nor co-borrower under the Stock Purchase Program, rather Carollo is solely a guarantor. Promissory notes between shareholders of the Company and the financial institution under the Stock Purchase Program amounted to $19,280,316 and $18,557,136 as of December 31, 2019 and 2018. As of December 31, 2019 and 2018, management has determined that the value of the contractual guarantee under the Stock Purchase Program is de minimus; thus, no liability for the contractual guarantee has been recorded on the consolidated balance sheets as of December 31, 2019 and 2018. Carollo has not experienced any losses in connection with the guarantee and continually evaluates the credit risk of the shareholder promissory note holders. The valuation techniques and inputs used in the fair value measurement of the guarantee include probability-weighted discounted cash flow analysis reflecting default and recovery rates, counterparty credit risk, interest rate differentials, loss severity, and the estimated fair value of Carollo common stock.

The promissory notes under the Stock Purchase Plan are full recourse and do not include any provisions that make the promissory notes substantively non-recourse; therefore, no compensation costs have been recorded for the years ended December 31, 2019 and 2018. Management made this determination which includes, but is not limited to the following factors:

a. Carollo has legal recourse and remedies and the ability and intent to seek repayment beyond shares issued;
b. There is no history of defaults and Carollo does not have a history of not demanding repayment of unpaid loan amounts and enforcing legal remedies;
c. There is no indication that promissory note holders do not have sufficient assets or other means beyond the value of the shares to justify the recourse nature of the promissory notes;
d. Carollo has never converted a recourse note to a nonrecourse note.

The common stock purchased and sold on January 1 each year is acquired from existing shareholders immediately prior to the sale (buy/sell transaction) as part of Carollo's ownership transition plan.

Share Purchase Notes Receivable

Share purchase notes receivable issued by the Company in connection with the buy/sell transactions amounted to $1,051,374 and $1,233,369 at December 31, 2019 and 2018, respectively, and are reported as a reduction of shareholders' equity. The notes bear interest at the Prime Rate with a ten-year term and are collateralized by the common stock. These notes are subordinated to the bank debt. The share purchase notes receivable are full recourse and do not include any provisions that make the notes substantively non-recourse; therefore, no compensation costs have been recorded for the years ended December 31, 2019 and 2018.

Shareholder Equity Line of Credit

Shareholder advances on the equity line of credit issued by the Company in connection with the buy/sell transactions amounted to $1,310,500 and $1,398,000 at December 31, 2019 and 2018, respectively, and are reported as a reduction of shareholders' equity. The notes bear interest at the Prime Rate plus 2% with a term that ranges from 18 to 20 years and are collateralized by the common stock. These notes are subordinated to the bank debt. The shareholder equity line of credit notes are full recourse and do not include any provisions that make the notes substantively non-recourse; therefore, no compensation costs have been recorded for the years ended December 31, 2019 and 2018.

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

11. Subsequent Events

The Company has evaluated subsequent events through April 29, 2020, which is the date the consolidated financial statements were available to be issued. There were no material subsequent events that require recognition or additional disclosure in these consolidated financial statements, except as follows.

Revolving Line of Credit

On January 1, 2020, the Company entered into the Eight Restated Revolver with a maximum borrowing limit of $10 million. The line of credit bears interest at the greater of LIBOR plus 2.50% per annum or 3.5% per annum and matures on December 31, 2020.

COVID-19

On January 30, 2020, the World Health Organization ("WHO") announced a global health emergency because of a new strain of coronavirus originating in Wuhan, China (the "COVID-19 outbreak") and the risks to the international community as the virus spreads globally beyond its point of origin. In March 2020, the WHO classified the COVID-19 outbreak as a pandemic, based on the rapid increase in exposure globally.

The full impact of the COVID-19 outbreak continues to evolve as of the date of this report. As such, it is uncertain as to the full magnitude that the pandemic will have on the Company's financial condition, liquidity, and future results of operations. Management is actively monitoring the global situation on its financial condition, liquidity, operations, suppliers, industry, and workforce. Given the daily evolution of the COVID-19 outbreak and the global responses to curb its spread, the Company is not able to estimate the effects of the COVID-19 outbreak on its results of operations, financial condition, or liquidity for fiscal year 2020.

The Company is dependent on its workforce to carry out its services. Developments such as social distancing and shelter-in-place directives may impact the Company's ability to deploy its workforce effectively. While expected to be temporary, prolonged workforce disruptions may negatively impact the Company's operations, financial conditions in fiscal year 2020 and the Company's overall liquidity.

The outbreak could have a continued material adverse impact on economic and market conditions and trigger a period of global economic slowdown, which may depress the Company's asset values, including long-lived assets and intangible assets.

Currently, there is significant uncertainty around the breadth and duration of business disruptions related to COVID-19, as well as its impact on the U.S and international economies. As of April 29, 2020, the Company has had several projects that have been delayed or suspended due to COVID-19. Although the Company cannot estimate the length or gravity of the impact of the COVID-19 outbreak at this time, if the pandemic continues, it may have a material adverse effect on the Company's results of future operations, financial position, and liquidity in fiscal year 2020.

Carollo Engineers, Inc. and Subsidiaries

Notes to Consolidated Financial Statements

CARES Act

On March 27, 2020, President Trump signed into law the "Coronavirus Aid, Relief, and Economic Security (CARES) Act." The CARES Act, among other things, includes provisions relating to refundable payroll tax credits, deferment of employer side social security payments, net operating loss carryback periods, alternative minimum tax credit refunds, modifications to the net interest deduction limitations, increased limitations on qualified charitable contributions, and technical corrections to tax depreciation methods for qualified improvement property.

It also appropriated funds for the SBA Paycheck Protection Program loans that are forgivable in certain situations to promote continued employment, as well as Economic Injury Disaster Loans to provide liquidity to small businesses harmed by COVID-19. There is no assurance we are eligible for these funds or will be able to obtain them.

We continue to examine the impact that the CARES Act may have on our business. Currently, we are unable to determine the impact that the CARES Act will have on our financial condition, results of operation, or liquidity.

The Company is not aware of any other significant transactions that have not been disclosed herein that will have an impact on these consolidated financial statements.

Supplementary Information

Carollo Engineers, Inc. and Subsidiaries

Schedule 1
Contracts Completed
Year Ended December 31, 2019

Contracts		Contract totals			Before January 1, 2019			During the Year Ended December 31, 2019		
Number	Type	Revenues earned	Cost of revenues	Profit (loss)	Revenues earned	Cost of revenues	Profit (loss)	Revenues earned	Cost of revenues	Profit (loss)
10	Cost plus fixed fee	$ 5,023,324	$ 4,606,057	$ 417,267	$ 4,519,564	$ 4,176,346	$ 343,218	$ 503,760	$ 429,711	$ 74,049
422	Fee schedule	106,022,140	92,924,253	13,097,887	94,189,293	82,698,310	11,490,983	11,832,847	10,225,943	1,606,904
242	Lump sum	79,100,949	67,260,150	11,840,799	70,892,160	61,961,918	8,930,242	8,208,789	5,298,232	2,910,557
58	Multiplier	29,157,195	27,163,514	1,993,681	27,157,177	25,576,406	1,580,771	2,000,018	1,587,108	412,910
60	Other	1,733,005	1,520,150	212,855	690,387	(154,206)	844,593	1,042,618	1,674,356	(631,738)
	Totals	$ 221,036,613	$ 193,474,124	$ 27,562,489	$ 197,448,581	$ 174,258,774	$ 23,189,807	$ 23,588,032	$ 19,215,350	$ 4,372,682

Carollo Engineers, Inc. and Subsidiaries

Schedule 2
Contracts in Progress
Year Ended December 31, 2019

Contract		Total Contract	From inception to December 31, 2019					At December 31, 2019		For the Year Ended December 31, 2019		
Number	Type	Contract amount	Estimated profit (loss)	Revenues earned	Cost of revenues	Profit (loss)	Billed to date	Estimated cost to complete	Costs and estimated earnings in excess of billings	Billings in excess of costs and estimated earning	Revenues earned	Cost of revenues	Profit (loss)
24	Cost plus fixed fee	$ 23,875,964	$ 7,669,282	$ 14,301,306	$ 13,292,724	$ 1,008,582	$ 14,394,438	$ 2,913,958	$ 2,153	$ 95,285	$ 5,421,141	$ 5,142,397	$ 278,744
1287	Fee schedule	617,873,351	132,180,715	413,018,299	363,463,284	49,555,015	414,191,975	122,229,352	1,987,589	3,161,265	148,993,543	131,321,832	17,671,711
501	Lump sum	298,188,175	37,107,352	185,489,886	171,655,025	13,834,861	190,817,103	89,425,798	4,483,589	9,810,806	57,644,585	52,481,990	5,162,595
180	Multiplier	154,323,023	33,392,989	92,933,027	87,327,730	5,605,297	94,383,095	33,602,304	118,835	1,568,903	34,631,875	32,333,613	2,298,262
410	Other	83,496,177	22,672,732	35,885,381	33,175,225	2,710,156	36,828,925	27,648,220	1,441,773	2,385,317	31,312,514	29,444,309	1,868,205
145	Inactive Not Closed	36,212,061	5,680,545	33,569,140	29,301,276	4,267,864	37,834,826	1,230,240	57,581	4,323,267	9,619,638	8,453,793	1,165,845
	Totals	$1,213,968,751	$238,703,615	$775,197,039	$698,215,264	$ 76,981,775	$ 788,450,362	$277,049,872	$ 8,091,520	$ 21,344,843	$287,623,296	$259,177,934	$ 28,445,362

carollo

Engineers...Working Wonders With Water®

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Carollo Engineers, Inc.,
INC. FEE SCHEDULE
As of December 2020

Engineers/Scientists	Maximum Hourly Rate
Staff Professional	$140.00
Assistant Professional	$160.00
Professional	$197.00
Project Professional	$272.00
Lead Project Professional	$289.00
Senior Professional	$298.00
Senior Process Specialist	$290.00
Technicians/Designers	
Technician	$88.00
Senior Technician	$116.00
Designer	$152.00
Lead Designer	$193.00
Senior Designer	$230.00
Support Staff	
Clerical	$70.00
Document Processing	$125.00
Administrative Assistant	$85.00
Senior Administrator	$104.00
Field Staff	
Inspector	$165.00
Senior Inspector	$215.00
Project Equipment and Communication Charge (PECE)	$14.00 per labor hour
Other Direct Expenses	
Travel and Subsistence	at cost
Mileage	IRS Reimbursement Rate
Subconsultants	cost plus 10%
Other Direct Costs	at cost

EXHIBIT C

INSURANCE REQUIREMENTS

CONSULTANT shall not commence services under the terms of this Agreement until certification or proof of insurance detailing terms and provisions has been received and approved in writing by the CITY's Risk Manager. If you are responding to a bid and have questions regarding the insurance requirements hereunder, please contact the City's Purchasing Department at (954) 786-4098. If the contract has already been awarded, please direct any queries and proof of the requisite insurance coverage to City staff responsible for oversight of the subject project/contract.

CONSULTANT is responsible to deliver to the CITY for timely review and written approval/disapproval Certificates of Insurance which evidence that all insurance required hereunder is in full force and effect and which name on a primary basis, the CITY as an additional insured on all such coverage.

Throughout the term of this Agreement, CITY, by and through its Risk Manager, reserve the right to review, modify, reject or accept any insurance policies required by this Agreement, including limits, coverages or endorsements. CITY reserves the right, but not the obligation, to review and reject any insurer providing coverage because of poor financial condition or failure to operate legally.

Failure to maintain the required insurance shall be considered an event of default. The requirements herein, as well as CITY's review or acceptance of insurance maintained by CONSULTANT, are not intended to and shall not in any way limit or qualify the liabilities and obligations assumed by CONSULTANT under this Agreement.

Throughout the term of this Agreement, CONSULTANT and all subcontractors or other agents hereunder, shall, at their sole expense, maintain in full force and effect, the following insurance coverages and limits described herein, including endorsements.

A. Worker's Compensation Insurance covering all employees and providing benefits as required by Florida Statute, Chapter 440. CONSULTANT further agrees to be responsible for employment, control and conduct of its employees and for any injury sustained by such employees in the course of their employment.

B. Liability Insurance.

(1) Naming the City of Pompano Beach as an additional insured as CITY's interests may appear, on General Liability Insurance only, relative to claims which arise from CONSULTANT's negligent acts or omissions in connection with CONSULTANT's performance under this Agreement.

(2) Such Liability insurance shall include the following <u>checked types of insurance</u> and indicated minimum policy limits.

Type of Insurance		Limits of Liability		
GENERAL LIABILITY:		Minimum 1,000,000 Per Occurrence and $1,000,000 Per Aggregate		
* Policy to be written on a claims incurred basis				
XX	comprehensive form	bodily injury and property damage		
XX	premises - operations	bodily injury and property damage		
__	explosion & collapse hazard			
__	underground hazard			
XX	products/completed operations hazard	bodily injury and property damage combined		
XX	contractual insurance	bodily injury and property damage combined		
XX	broad form property damage	bodily injury and property damage combined		
XX	independent contractors	personal injury		
XX	personal injury			
AUTOMOBILE LIABILITY:		Minimum $1,000,000 Per Occurrence and $1,000,000 Per Aggregate. Bodily injury (each person) bodily injury (each accident), property damage, bodily injury and property damage combined.		
XX	comprehensive form			
XX	owned			
XX	hired			
XX	non-owned			
REAL & PERSONAL PROPERTY				
___	comprehensive form	Agent must show proof they have this coverage.		
EXCESS LIABILITY			Per Occurrence	Aggregate
XX	Umbrella and other than umbrella	bodily injury and property damage combined	$2,000,000	$2,000,000
PROFESSIONAL LIABILITY			Per Occurrence	Aggregate
XX	* Policy to be written on a claims made basis		$2,000,000	$2,000,000

(3) If Professional Liability insurance is required, CONSULTANT agrees the indemnification and hold harmless provisions set forth in the Agreement shall survive the termination or expiration of the Agreement for a period of three (3) years unless terminated sooner by the applicable statute of limitations.

C. Employer's Liability. If required by law, CONSULTANT and all subcontractors shall, for the benefit of their employees, provide, carry, maintain and pay for Employer's Liability

Insurance in the minimum amount of One Hundred Thousand Dollars ($100,000.00) per employee, Five Hundred Thousand Dollars ($500,000) per aggregate.

D. Policies: Whenever, under the provisions of this Agreement, insurance is required of the CONSULTANT, the CONSULTANT shall promptly provide the following:

(1) Certificates of Insurance evidencing the required coverage;

(2) Names and addresses of companies providing coverage;

(3) Effective and expiration dates of policies; and

(4) A provision in all policies affording CITY thirty (30) days written notice by a carrier of any cancellation or material change in any policy.

E. Insurance Cancellation or Modification. Should any of the required insurance policies be canceled before the expiration date, or modified or substantially modified, the issuing company shall provide thirty (30) days written notice to the CITY.

F. Waiver of Subrogation. CONSULTANT hereby waives any and all right of subrogation against the CITY, its officers, employees and agents for each required policy. When required by the insurer, or should a policy condition not permit an insured to enter into a pre-loss agreement to waive subrogation without an endorsement, then CONSULTANT shall notify the insurer and request the policy be endorsed with a Waiver of Transfer of Rights of Recovery Against Others, or its equivalent. This Waiver of Subrogation requirement shall not apply to any policy which includes a condition to the policy not specifically prohibiting such an endorsement, or voids coverage should CONSULTANT enter into such an agreement on a pre-loss basis.

CERTIFICATE OF LIABILITY INSURANCE

7/4/2021

DATE (MM/DD/YYYY): 6/26/2020

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

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

PRODUCER	Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906 (816) 960-9000
CONTACT NAME:	
PHONE (A/C, No, Ext):	FAX (A/C, No):
E-MAIL ADDRESS:	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Zurich American Insurance Company	16535
INSURER B : Travelers Property Casualty Co of America	25674
INSURER C : American Guarantee and Liab. Ins. Co.	26247
INSURER D : Continental Casualty Company	20443
INSURER E :	
INSURER F :	

INSURED 1472606
CAROLLO ENGINEERS, INC.
2795 MITCHELL DR.
WALNUT CREEK CA 94598-1601

COVERAGES **CERTIFICATE NUMBER:** 16520932 **REVISION NUMBER:** XXXXXXX

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:	Y	N	GLO 9730569	7/4/2020	7/4/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 1,000,000 $ 25,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
C	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY	Y	N	BAP 9730571	7/4/2020	7/4/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) DED: COMP/COLL	$ 2,000,000 $ XXXXXXX $ XXXXXXX $ XXXXXXX $ 1,000
B	[X] UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE DED [ ] RETENTION $	N	N	ZUP-81N3080A-20-NF	7/4/2020	7/4/2021	EACH OCCURRENCE AGGREGATE	$ 2,000,000 $ 2,000,000 $ XXXXXXX
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [N] N/A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N	WC 9730570	7/4/2020	7/4/2021	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
D	PROFESSIONAL LIABILITY UNLIMITED PRIOR ACTS	N	N	AEH 288354410	7/4/2020	7/4/2021	EACH CLAIM: $2,000,000; AGGREGATE: $2,000,000	

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

PROJECTS AS ON FILE WITH THE INSURED INCLUDING BUT NOT LIMITED TO: TRANSFER PUMP STATION IMPROVEMENTS - CONSTRUCTION ADMINISTRATION SERVICES, WAN 19, RLI-L-40-15. CAROLLO PROJECT #: NOT YET ASSIGNED. CITY OF POMPANO BEACHIS AN ADDITIONAL INSURED AS RESPECTS GENERAL LIABILITY AND AUTO LIABILITY, AS REQUIRED BY WRITTEN CONTRACT.

APPROVED
By Danielle Thorpe at 10:01 pm, Jul 07, 2020

CERTIFICATE HOLDER

16520932

CITY OF POMPANO BEACH, WTP

1205 NE 5TH AVENUE
POMPANO BEACH FL 33060

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

Lauren Agnello

CERTIFICATE OF LIABILITY INSURANCE

7/4/2021

DATE (MM/DD/YYYY) 6/26/2020

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

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

PRODUCER Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906 (816) 960-9000	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Zurich American Insurance Company	16535
INSURER B : Travelers Property Casualty Co of America	25674
INSURER C : American Guarantee and Liab. Ins. Co.	26247
INSURER D : Continental Casualty Company	20443
INSURER E :	
INSURER F :	

INSURED 1472606 CAROLLO ENGINEERS, INC.
2795 MITCHELL DR.
WALNUT CREEK CA 94598-1601

COVERAGES **CERTIFICATE NUMBER:** 16520923 **REVISION NUMBER:** XXXXXXX

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:	Y	N	GLO 9730569	7/4/2020	7/4/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG [ ]	$ 1,000,000 $ 1,000,000 $ 25,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
C	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY	Y	N	BAP 9730571	7/4/2020	7/4/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) DED: COMP/COLL	$ 2,000,000 $ XXXXXXX $ XXXXXXX $ XXXXXXX $ 1,000
B	[X] UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $	N	N	ZUP-81N3080A-20-NF	7/4/2020	7/4/2021	EACH OCCURRENCE AGGREGATE [ ]	$ 2,000,000 $ 2,000,000 $ XXXXXXX
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [N] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	N	WC 9730570	7/4/2020	7/4/2021	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
D	PROFESSIONAL LIABILITY UNLIMITED PRIOR ACTS	N	N	AEH 288354410	7/4/2020	7/4/2021	EACH CLAIM: $2,000,000; AGGREGATE: $2,000,000	

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

PROJECTS AS ON FILE WITH THE INSURED INCLUDING BUT NOT LIMITED TO: CONTINUING CONTRACT FOR ENGINEERING SERVICES FOR WATER & REUSE TREATMENT PLANT PROJECTS. REQUEST FOR LETTERS OF INTEREST L-40-15. CITY OF POMPANO BEACHIS AN ADDITIONAL INSURED AS RESPECTS GENERAL LIABILITY AND AUTO LIABILITY, AS REQUIRED BY WRITTEN CONTRACT.

CERTIFICATE HOLDER

16520923

CITY OF POMPANO BEACH

1205 NE 5TH AVENUE
POMPANO BEACH FL 33060

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

Lauren Arnelle

CERTIFICATE OF LIABILITY INSURANCE

7/4/2021

DATE (MM/DD/YYYY) 6/26/2020

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

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

PRODUCER Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906 (816) 960-9000	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:
INSURED 1472602 CAROLLO ENGINEERS, INC. 2795 MITCHELL DR. WALNUT CREEK CA 94598-1601	INSURER(S) AFFORDING COVERAGE / NAIC # INSURER A : Zurich American Insurance Company 16535 INSURER B : American Guarantee and Liab. Ins. Co. 26247 INSURER C : Continental Casualty Company 20443 INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 16521093 **REVISION NUMBER:** XXXXXXX

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:	Y	Y	GLO 9730569	7/4/2020	7/4/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG [ ]	$ 1,000,000 $ 1,000,000 $ 25,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
B	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY	Y	Y	BAP 9730571	7/4/2020	7/4/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) DED: COMP/COLL	$ 2,000,000 $ XXXXXXX $ XXXXXXX $ XXXXXXX $ 1,000
	[ ] UMBRELLA LIAB [ ] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			NOT APPLICABLE			EACH OCCURRENCE AGGREGATE [ ]	$ XXXXXXX $ XXXXXXX $
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N [N] N/A If yes, describe under DESCRIPTION OF OPERATIONS below		N	WC 9730570	7/4/2020	7/4/2021	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
C	PROFESSIONAL LIABILITY UNLIMITED PRIOR ACTS	N	N	AEH 288354410	7/4/2020	7/4/2021	EACH CLAIM: $2,000,000; AGGREGATE: $2,000,000	

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

OPERATIONS AS PER CONTRACT ON FILE WITH INSURED. PROFESSIONAL LIABILITY IS WRITTEN IN AGGREGATE LIMITS OF LIABILITY NOT LESS THAN THE AMOUNT SHOWN. RE: H-51-10 CONTINUING CONTRACT FOR ENGINEERING SERVICES FOR WATER AND RECLAIMED WATER TREATMENT PLANT PROJECTS CAROLLO PROJECT #: TBD. CITY OF POMPANO BEACH IS AN ADDITIONAL INSURED AS RESPECTS GENERAL LIABILITY, AS REQUIRED BY WRITTEN CONTRACT.

CERTIFICATE HOLDER

16521093

CITY OF POMPANO BEACH

1205 NE 5TH AVENUE
POMPANO BEACH FL 33060

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

Luan M Arnelle