

October 17, 2018

City of Pembroke Pines
Purchasing Division
8300 South Palm Drive
Pembroke Pines, FL 33025

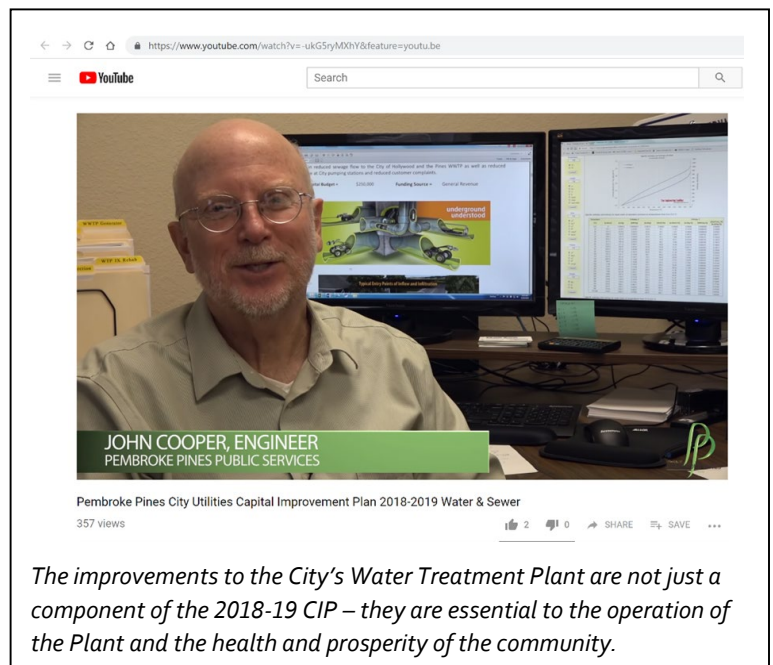
Subject: Letter of Interest for the Pembroke Pines Water Treatment Plant - 2018-19 Improvement Projects

Dear Selection Committee Members:

Most of the Utilities Division's customers take for granted that they will have clean water reliably available to their homes and businesses whenever they need it. Improvements planned for the Water Treatment Plant for 2018-19 are a significant component of the City of Pembroke Pine's Utilities Capital Improvement Plan. Carollo understands that the City's Water Treatment Plant is the very heart of the system and keeping it operating at full capacity is essential to the health and prosperity of the community.

With that in mind, Carollo is pleased to present this Letter of Interest for the City's Water Treatment Plant 2018-19 Improvement Projects. As we undertake this project, we will apply our experience and knowledge to address critical success factors by:

- Listening to your O&M and engineering staff to deliver projects that you can easily operate for years to come.
- Applying specialized expertise to the design of existing plant components needing replacement or rehabilitation.
- Using appropriate process, hydraulic, and computational models to maximize operational effectiveness and capacity for each dollar invested.
- Conducting early implementation planning to shorten the permitting process and keep facilities operating with minimal disruption during construction.



Simply stated, ***Carollo will bring real solutions to provide safe and reliable drinking water to your customers.*** We appreciate your consideration and look forward to the opportunity to serve the City.

Sincerely,

CAROLLO ENGINEERS, INC.

Charles Sinclair, P.E.
Principal-in-Charge

Chris Reinbold, P.E.
Project Manager

PROPOSED PROJECT TEAM

Carollo's project team for delivering projects for your Water Treatment Plant was presented in our Statement of Qualifications for Solicitation No. PSEN-18-02, dated July 2018. The organization chart in Part I Section D identified our core personnel and we included a snapshot of their qualifications and detailed resumes of each of our key staff.

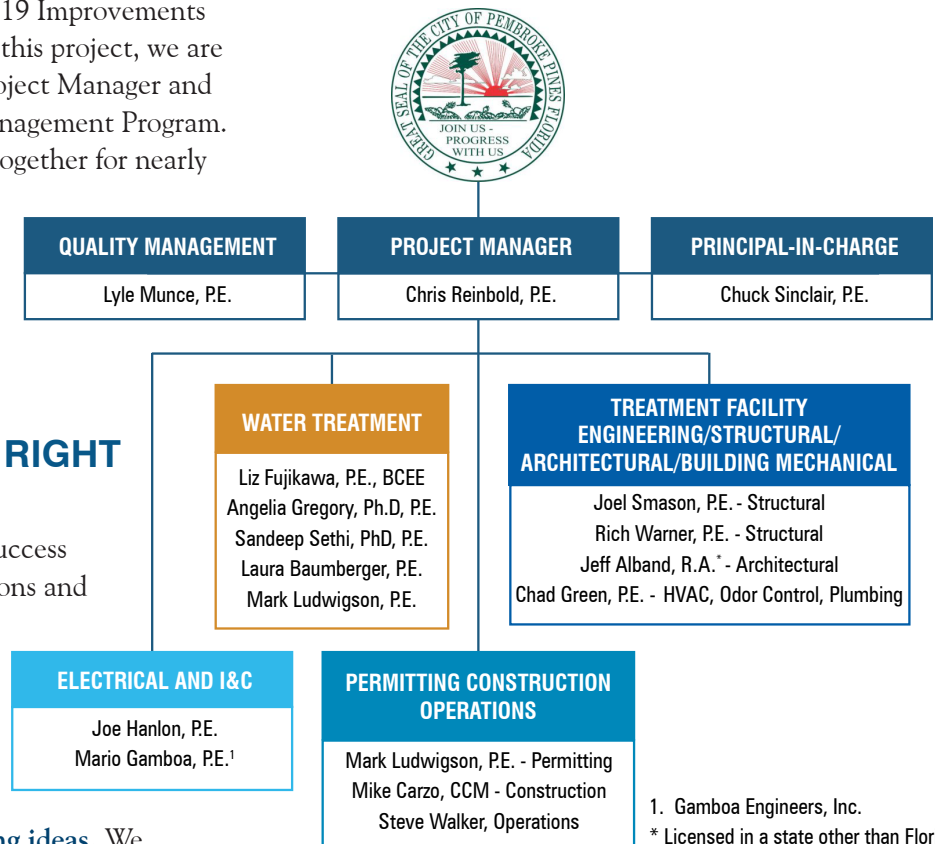
Our team clearly has the experience and depth to deliver all components of the 2018-19 Improvements for the Water Treatment Plant. For this project, we are proposing Chris Reinbold as our Project Manager and Lyle Munce to lead our Quality Management Program. Chris and Lyle have been working together for nearly 10 years delivering projects very similar to the City of Pembroke Pines for other utilities, such as Sunrise, Palm Beach County, and the Florida Keys Aqueduct Authority.

WHY IS CAROLLO THE RIGHT TEAM FOR YOU?

Nothing is more important to the success of your projects than the qualifications and experience of your consultant team. With that in mind, we offer three key reasons why the Carollo team is the right choice for the City of Pembroke Pines.

- We bring innovative, cost saving ideas.** We approach each problem with a fresh solution and a toolbox of up to the minute technologies--we're not locked into any particular way of thinking that will get in the way of your vision. This team can take the projects wherever they lead, as long as it's best for the City.
- Our local industry experts are passionate about water.** Our Florida staff includes recognized industry leaders serving national roles in AWWA, WEF, and AMTA, among others. We have the technical passion to identify innovative cost-effective solutions to address regulatory drivers,

We have assembled a locally-based team of experts who have a long history of working on the engineering and construction of water facilities throughout the State of Florida. This team will bring innovative, cost-saving ideas to the City.



optimize water, wastewater and reuse operations, or rehabilitate existing facilities.

- We understand local issues and processes.** Through our work with you and many other municipalities throughout south Florida, we understand your nuances of water quality; treatment process optimization; permitting and compliance issues; master planning drivers; and fiscal challenges. This knowledge keeps our projects focused and on schedule.

1. Gamboa Engineers, Inc.
* Licensed in a state other than Florida

DEDICATED COLLABORATIVE PROJECT MANAGER



Chris Reinbold, our proposed Project Manager, will oversee all aspects of the project, including schedule and cost monitoring, team integration, risk management, quality control and assurance, scope and change control, project plan development and execution, stakeholder buy-in, and consistent communication between the City and the project team. Chris has a proven track record of managing water treatment projects and continuously demonstrates his ability to coordinate project team members to meet schedules on challenging projects. This valuable experience has prepared him to closely focus on the task at hand—2018-19 Improvement Projects for the Pembroke Pines



"We are quite satisfied with our experience working with Carollo Engineers, Inc. and have been thoroughly satisfied with the services we've received from Larry Elliott, P.E., Lyle Munce, P.E., Chris Reinbold, and the rest of their support team at the local Sunrise, FL office."

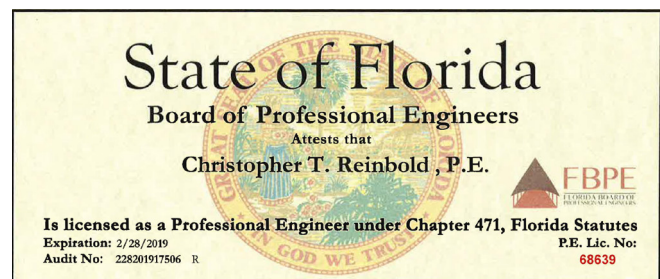
— Tim Welch, P.E., Utilities Director
City of Sunrise, FL

Water Treatment Plant. His project management style is to plan ahead, get input from the best resources, and frequently check-in with team members.

Chris brings relevant experience from similar projects, including, but not limited to the following:

- ▶ **City of Sunrise** - 18-mgd Sawgrass WTP Design and Improvements Project.
- ▶ **City of Sunrise** Springtree WTP Improvements Project.
- ▶ **Palm Beach County** - WTP No. 2 MIEX® project.
- ▶ **Palm Beach County** - WTP No. 8 – Ion Exchange Bench-Scale Bypass Study.
- ▶ **Florida Keys Aqueduct Authority** - Trumbo Point Tank and Pump Station Replacement.

As requested, we have provided Chris' resume and three reference projects that Chris signed and sealed on the following pages.



A Minute with Your Project Manager

"I am excited about the possibility of working with Pembroke Pines staff to deliver your 2018-19 Improvement Projects for the Pembroke Pines WTP and to help the City continue its track record of excellence. This role fits well with my background and interests. As a long-time resident of south Florida, I have been serving clients throughout Southeast Florida and around the nation for over 15 years in the field water treatment, as it relates to studies, design, construction, and operations of municipal treatment plants. This experience has given me the opportunity to build both specific local knowledge and a national perspective in these fields.

Over the years, I have learned that project management is not simply a matter of managing the work tasks, schedule, and budget. It is about managing the people who are doing the work — keeping them focused, inspired, and engaged in completing the task at hand. Project leadership also involves collaborating with the project stakeholders, including your management team and operations staff. This means supporting you, listening to you, and keeping you in the loop every step of the way, so that you have the confidence to make informed decisions that meet your goals."

Chad T. Keill





Education

MS 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

Florida Engineering
Society

Chris T. Reinbold, P.E.

Chris Reinbold, an associate vice president with Carollo, has 15 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.

Relevant Experience

→ **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.

→ **Project manager for the City of Sunrise, Florida, Southwest Water Treatment Plant Ion Exchange (IX) & Improvements.** This project includes addition of a 2-mgd fixed bed vessel IX system for color control and organics reduction at an existing lime softening plant. Other improvements include the replacement of well 2, replacement of the diesel engine backup generator and associated fuel storage tank, salt storage for IX regeneration, waste equalization, demolition of the existing lime silo for construction of a new larger silo to install two Owner furnished slakers, and associated electrical and I&C features. The addition of the IX system will allow the City to improve finished water quality as well as meet regulatory requirements associated with disinfection byproducts while implementing a new disinfection system to meet the Groundwater Rule.

→ **Design manager for the City of Sunrise, Florida, Sawgrass 3-mgd Reverse Osmosis Water Treatment Plant.** This project included the preparation of a procurement bid package and the general construction bid package, including 3 mgd of reverse osmosis treatment at the existing 18-mgd Sawgrass Water Treatment Plant. Included in the reverse osmosis system design were cartridge filters, two-stage reverse osmosis treatment, degasification, air quality control scrubbers, clean-in-place system, and chemical systems. Also included in this project was the uprating of the existing nanofiltration treatment system from 18 to 24 mgd along with other renewal and improvement items.

→ **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.

Chris T. Reinbold, P.E.

→ Project manager for the City of Sunrise, Florida Springtree Water Treatment Plant Phase II Improvements & Rehabilitation.

This project included renewal and upgrades to the existing four (4) 6-mgd each solids contact clarifiers, additional of raw water aerators, replacement of the south lime silo, concrete structure rehabilitation for the filters and flume, demolition of the existing east filters and transfer pump, addition of a new transfer pump station rated for 12-mgd, addition of a water stabilization (CO₂) system, extension of washwater return piping to connect to the two west softeners, and replacement of the existing rotary drum vacuum filter belts and appurtenances for lime sludge dewatering. This project was designed and is being constructed in two separate bid packages.

→ Project manager for the Palm Beach County Water Utilities Department, Florida, System 3 Water Treatment Plant Permeate Pipeline Replacement. Prior to designing the new piping, a study was conducted to investigate repair or replacement options for a deteriorating 42-inch diameter ductile iron permeate pipeline. This project included replacement of the permeate pipeline for a 30-mgd nanofiltration water treatment plant with a new HDPE pipeline including new stainless steel aboveground and vault piping, new flow meter, and repair and reconstruction of existing improvements affected by the piping installation.

→ Project manager for the Palm Beach County Water Utilities Department, Florida, System 8 Water Treatment Plant Train 3 Softener Bypass and Ion-Exchange Pilot Study. An ion-exchange pilot study was conducted to evaluate the potential to stabilize the softener effluent by bypassing a portion of raw water around the softener and into the influent stream of the 10-mgd ion-exchange system. Design was completed based upon the recommendations of the study, which included the addition of flow control valve, flow meter, and bypass pipeline.

→ Project engineer for the Palm Beach County Water Utilities Department, Florida, System 2 Water Treatment Plant Ion

Exchange project. This project included the installation of a magnetic ion-exchange (MIEX[®]) treatment system to achieve color reduction and dissolved organic carbon removal from the source water; two 25-foot square, continuous flow, high rate fluidized bed reactors, each rated for 9 mgd, as well as but not limited to a regeneration system, virgin resin storage and feed system, saturated brine storage tank and pumping, raw water system piping modifications, electrical and instrumentation components associated with the overall treatment system. Carollo's design allowed for inclusion of a softening system bypass in order to increase plant capacity by approximately 2 mgd without adding any new softening basins or downstream filters. At the time of startup and commission, this was the largest high rate system of its type in the world.

→ Project manager during study/design and construction manager during construction of the Palm Beach County Water Utilities Department, Florida, Water Treatment Plant No. 2 Filter Replacement project. This project includes a new filter structure with dual media filters rated for an initial capacity of 16.4 mgd and designed to be high rated to an ultimate capacity of 25 mgd. The filter structure also includes a clearwell, transfer and backwash pumps, air scour blowers, electrical room, and chemical feed connections. The new filters replace existing steel vessel filters at each lime softening train that are to be demolished along with a 1.0 million gallon storage tank. Other items include site grading, drainage, paving, and yard piping to support the new facilities with demolition of the old.

→ Technical advisor for the Palm Beach County Water Utilities Department (PBCWUD), Florida, Water Master Plan Update. Project included development of a new water master plan for PBCWUD to recommend capital improvements to meet the County's 20-year water needs. Demand projections developed by PBCWUD were reviewed and confirmed, and updated peaking factors were developed based on historical production and SCADA data. Carollo assisted the County in updating its

Chris T. Reinbold, P.E.

Infowater hydraulic model and developed and facilitated a calibration program. Based on modeling results and evaluation of PBCWUD treatment and storage facilities, a 20-year Capital Improvements Plan (CIP) was developed to sustain the County's future water demands.

→ **Project manager for the Florida Keys Aqueduct Authority (FKAA), Florida, to provide design and construction support services for replacement of the Trumbo Point potable water storage tank and pump station.** The existing underground storage tank will be replaced with an above ground storage tank with a capacity sufficient to meet 4 days of potable water demand at Fleming Key and adjacent Trumbo Point Coast Guard Sector. The existing vertical turbine pump station will be demolished and replaced with an "EFI" vertical turbine standard type pumping system similar to that existing at multiple sites throughout the FKAA system.

→ **Project manager for the City of Riviera Beach Utility District (CRBUD), Florida, Water Treatment Plant Evaluation.** This project includes the evaluation of the process systems at the CRBUD Water Treatment Plant to determine the expected performance of each process system. The evaluation will identify expected performance of each process system in terms of intended function and capacity along with a review of meeting established permitted regulatory criteria. This effort included review of existing documents, performing process calculations, interviews with operations staff, and review of application permits and regulatory criteria. Also included was the evaluation of the existing treatment system hydraulics. Carollo will also provide training seminars to CRBUD staff based upon topics identified during the above evaluation.

→ **Project engineer for the South Florida Water Management District, Florida, Caloosahatchee River (C-43) West Basin Reservoir project.** This project is composed of a 170,000 ac-ft above-ground reservoir including internal and external embankments, internal control and outflow water control structures, canals, and two

pump stations (S-470 and S-476). The pumping design capacity of the S-470 is 1,500 cfs while the design capacity for the S-476 is 195 cfs. This project is being designed and constructed with four separate bid packages.

→ **Project engineer for the South Florida Water Management District, Florida, L-8 Reservoir Inflow Structure and Pump Station Conceptual Plan and Procurement of the Design-Build Contract and Construction Management Services.** The L-8 Reservoir is part of an ongoing \$64M project to deliver a one-of-a-kind reservoir of 46,000 ac-ft capacity in Southeast Florida. The reservoir included a 450 cfs pumping station and a 2,000 cfs inflow structure.

→ **Project engineer for the Miami-Dade Water and Sewer Department, Florida, Preston and Hialeah Water Treatment Plant Feasibility Study.** Reviewed ozone, UV, membranes (microfiltration, ultrafiltration, or nanofiltration), and carbon adsorption as candidate technologies to upgrade the Preston and Hialeah Water Treatment Plants to meet the Surface Water Treatment Rule due to the pending reclassification of the well field supply to groundwater under direct influence of surface water. Responsibilities included process systems evaluation and field assessments. Performed a hydraulic assessment of both treatment facilities, encompassing a combined hydraulic capacity of 235 mgd. Assessment included the intermediate transfer pumping facilities at both plants (which convey all of the water downstream of filtration to the top of air stripping towers for DBP and benzene removal). The raw water system hydraulics were evaluated from the source water to the treatment plant.

1

Firm Responsibility: PRIME

Owner's Representative:

Vincent Riccobono, *Construction Services Manager*
2065 Prairie Road, West Palm Beach, FL 33416

Ph: (561) 493-6143

vriccobono@pbcwater.com

Project Dates: 2008 - Ongoing



PALM BEACH COUNTY UTILITIES, WEST PALM BEACH, FL *Continuing Services Contract*

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

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

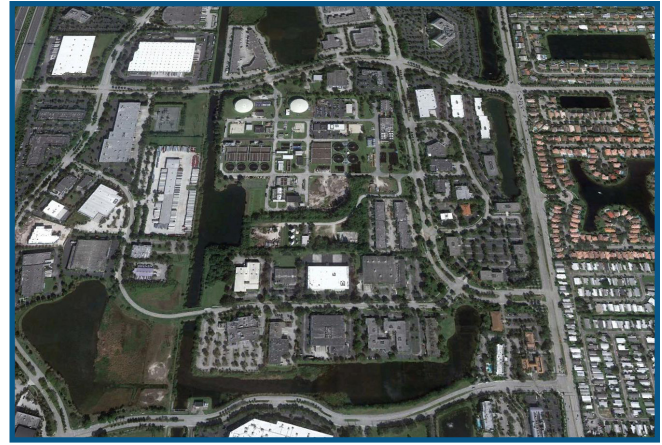
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Firm Responsibility: PRIME

Owner's Representative:

Timothy Welch, *Director of Utilities*
777 Sawgrass Corporate Parkway, Sunrise, FL 33325
Ph: (954) 888-6055
twelch@sunrisefl.gov

Project Dates: 2011 - Ongoing



CITY OF SUNRISE, FL *Continuing Engineering Services Contract*

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

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

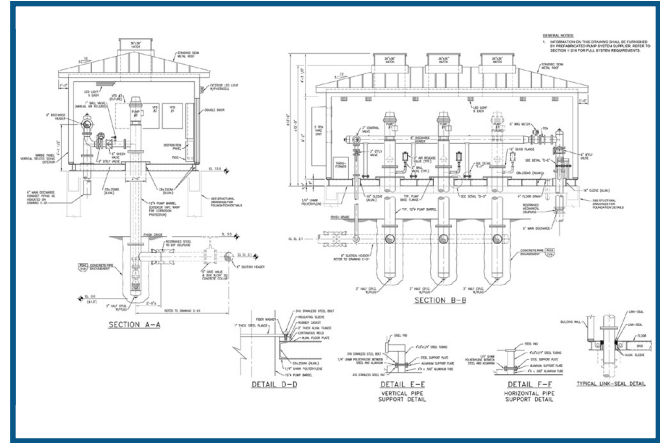
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Firm Responsibility: PRIME

Owner's Representative:

Joshua Peele, Engineering Projects Administrator
1100 Kennedy Drive, Key West, FL 33040
Ph: (305) 809-2636
jpeele@fkaa.com

Project Dates: 2018 - Ongoing



FLORIDA KEYS AQUEDUCT AUTHORITY, KEY WEST, FL *Trumbo Point Tank and Pump Station Replacement*

Florida Keys Aqueduct Authority (FKAA) contracted Carollo to provide design and construction support services for replacement of the Trumbo Point potable water storage tank and pump station. The existing underground storage tank will be replaced with an above ground storage tank with a capacity sufficient to meet 4 days of potable water demand at Fleming Key and adjacent Trumbo Point Coast Guard Sector. The existing vertical turbine pump station will be demolished and replaced with an “EFI” vertical turbine standard type pumping system similar to that existing at multiple sites throughout the FKAA system.

Carollo’s scope of work included:

- ▶ **Water Demand Analysis:** Flow records were analyzed for daily minimum, maximum, average, median, and 75th and 98th percentile flow totals. This analysis was performed to understand the overall flow characteristics of the system and to determine the most probable total daily flow and eliminate flow outliers.
- ▶ **Storage Tank:** The nominal storage tank size was determined to be 460,000 gallons. Utilizing standard glass lined tank dimensional considerations for optimum value and constructability, the primary dimensions for the chosen tank is 53 feet in diameter and a wall height of 28 feet. This wall height includes 6 inches of freeboard.
- ▶ **Pump Station:** This pumping system, including suction and discharge piping, electrical components, auxiliary power generator receptacle, and control system elements, were incorporated into a prefabricated structure designed to meet local hurricane wind requirements.
- ▶ **Site Drainage:** The site was improved with new fencing, basic site lighting, and provisions for stormwater/drainage management.
- ▶ **Permitting:** Carollo prepared an application for a Florida Department of Environmental Protection Specific Permit to Construct Public Water Supply (PWS) Components.
- ▶ **Cost Estimate:** A cost estimate was developed for the storage tank, pump station, and existing tank demolition and filling.

December 27, 2018

City of Pembroke Pines
Purchasing Division
8300 South Palm Drive
Pembroke Pines, FL 33025

Subject: Response to the Request for Additional Information for the Pembroke Pines Water Treatment Plant-2018-19 Improvement Projects

Dear Selection Committee Members:

Below is our response to your request for additional information received on December 24, 2018.

Willingness to Meet Time and Budget Requirements

Carollo has reviewed the budget and schedule information provided for this project by the City and commits its resources to meet these targets. Although it is impossible to commit to a cost estimate and schedule without more detailed definition of the project, if selected for this work we will work closely with the City staff to develop an approach that scales our level of effort meet the time and budget requirements.

Our staff just completed a very similar project for the City of Sunrise, which allows us to immediately respond to the needs of this project in an efficient and timely manner. Also, we understand the local market and project costs, which will allow the City to make informed decisions for example when selecting the proper equipment for the size of the project.

Recent, Current, and Projected Workloads of the Firm

We are confident that our key team members and firm have the capacity and resources to deliver your projects within your established time-frame. As a highly-ranked national firm that specializes in water and wastewater projects, Carollo continuously executes a high volume of work across a wide range of disciplines. Our firm-wide workload committed to active and on-going projects generally ranges between 65 and 70 percent. As a result, we have more than ample capacity within our firm to respond to your needs. The availability of each the key staff member to participate in this project is included in the below graphic. The level of availability indicated in this table shows that all key staff have ample capacity for this project and that we are ready to "**hit the ground running**".

Staff	Role	% Available to Pembroke Pines
Chris Reinbold, P.E.	Project Manager	40%
Lyle Munce, P.E.	Quality Manager	30%
Chuck Sinclair, P.E.	Principal-In-Charge	35%
Juan Oquendo	Water Treatment Design	50%
Elizabeth Fujikawa, P.E., BCEE	Water Treatment Design	30%
Sandeep Sethi, Ph.D.,	Water Treatment Design	50%
Mark Ludwigson, P.E.	Water Treatment Design	50%
Rich Warner, P.E.	Structural Design	55%
Jeff Alband, R.A.	Architectural	50%
Chad Green, P.E.	HVAC, Plumbing	45%
Mike Carzo, CCM	Construction	45%
Steve Walker	Operations	35%

As a national firm, Carollo has a continuous workload of hundreds of projects at any particular time, at various stages of completion from kickoff to final completion. As examples, listed below are representative completed and active projects for Carollo in South Florida over the last five years, indicating the breadth and depth of our local experience.

Client	Project	Status
Broward County	High Service Pumping Station and Storage Tanks	Active
City of Boynton Beach	General Engineering Consultant	Active
	Progressive D/B of Ion Exchange Facility	Completed
	Study for Centralized HVAC	Completed
	Engine Generator Prepurchase	Completed
	WTP No. 2 MIEX System	Completed
City of Davie	Utility Master Plan	Active
City of Pompano Beach	General Engineering Consultant	Active
	Concentrate Pipeline Connection	Completed
	Electrical Master Plan Phase 1 Improvements	Completed
	Evaluation of Lime Softening versus Nanofiltration	Completed
	Transfer Pump Station Construction Services	Projected
	Water Supply Plan	Projected
City of Margate	General Engineering Consultant	Active
	East WWTP Upgrade	Active
	Assessment of Accelerator Wall Integrity	Completed
City of North Miami Beach	Force main Replacement	Active
City of Sunrise	General Engineering Consultant	Active
	Springtree Renewal and Replacement	Completed
	Springtree RO WTP	Completed
	Springtree WTP Sodium Hypochlorite Tank Replacement	Completed
	Sawgrass RO WTP	Completed
	Sawgrass WTP Rerate Improvements	Completed
Miami-Dade County	Design Services for Wastewater Treatment Related to the Ocean Outfall Legislation Projects - SFWWTP Design Package 1	Active
	Hialeah-Preston Nanofiltration Plant	Completed
Palm Beach County Water Utilities	WTP No. 2 Filter Replacement	Completed
South Central Regional WWTDB	General Engineering Consultant	Active
	Bulk Hypochlorite Storage and Feed Facility	Active
	Progressive D/B of Aeration System and Capacity Improvements	Active
South Florida Water Management District	General Engineering Consultant	Active
	C-43 Reservoir Improvements	Active
	L-8 Pump Station	Completed
Village of Wellington	General Engineering Consultant	Active
City of Delray Beach	General Engineering Consultant Active	Active
	Water Treatment Plant Construction Management	Active

Additional Information

In our statement of qualification submitted to the City on July 24, 2018, we highlighted that Carollo is solely focused on Water, which allows us to attract talented people who have passion for water and the expertise that you need. We apply this passion and expertise to create innovative, cost-conscious solutions delivered with service that exceeds expectations.

The Carollo Letter of Interest dated October 17, 2018 introduced our proposed team to deliver the City's 2018-19 Improvement Projects. Our proposed Project Manager, Chris Reinbold, not only has a track record of managing water treatment projects, but he just completed various projects for the City of Sunrise that have a similar scope to your 2018-19 Improvement Projects scope. This experience translates into cost savings to the City and faster project delivery.

Lastly, our Scope of Work and Fee Estimate for the WTP Lime Feed System Replacement presented our approach to this project. The scope of work was to complete a study that would evaluate the best available technology for the City's WTP lime feed system. While developing this scope of work, it was evident that key decisions for the proper equipment selection were needed before doing a detailed design. This two step approach (study, then design) will allow the City to make decisions efficiently and effectively to stay on schedule and meet the designated budget.

The City of Pembroke Pines WTP Lime Feed System Evaluation require not just a conventional approach, but innovative thinking to develop an approach that incorporates the latest in available, proven technologies and out-of-the-box ideas that are fiscally responsible and easy to operate and maintain. We've always believed that this creativity and innovation is not a process, but rather the natural outcome of the enthusiasm of each and every Carollo employee to challenge themselves to "think differently" when solving our client's needs. We look forward to work with the City of Pembroke Pines staff to **"THINK DIFFERENTLY"** and solve your needs.

Sincerely,

CAROLLO ENGINEERS, INC.

A handwritten signature in blue ink, appearing to read 'C. T. Sinclair', with a stylized flourish at the end.

Charles T. Sinclair, P.E.
Senior Vice President

What Do Our Clients Say?

"The Evaluation of Long-Range Treatment Options: Nano filtration versus Lime Softening study that Carollo provided was excellent. The report provided very good data and financial detail in which the Utility will be able to make decisions on future treatment methods and repair and replacement projects (R&R). We now can make plans for financing the work that we need to accomplish. The executive summary clearly communicated the path we needed to progress on. Our team enjoyed working with Carollo Engineers on this study. We look forward to working with them in the future."

*— Randy Brown, Utilities
Director City of
Pompano Beach, FL*

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