



ADD-CHANGE FORM

New Project or Budget Change?

Assigned Project #

Requested by:
Project Manager / Area Manager

Date:

Project Name:

Company: Lake Utility Services Inc

Business Unit: LUSI South W

BU Type:

Project Owner:

Budget Owner / RVP:

Project Manager:

Region:

Start Date:

State:

Estimated End Date:

Project Type:

Will project replace/retire any assets:

Previously Requested:

This Request:	\$330,832
Still to be Requested:	\$0
Total Project Budget:	\$330,832

Description:

Design services, permitting and pilot testing of complete membrane treatment system at the Lake Groves water treatment plant to reduce TTHM/HAA5 values and meet regulatory requirements as dictated by a Consent Order issued by FDEP.

Timeline Considerations:

The Utility is required under the Consent Order to hire an engineering consultant to initiate the design of treatment plant modifications within 60 days of the Department's approval of the engineering analysis report that was submitted on 10/12/16 and approved on 10/24/16. This leaves 12/24/16 as the due date to engage the services of an engineering consultant.

Inter-dependant Project Project Number: Project Name (If applicable)

Have engineering evaluations been performed? Engineering project number (If applicable)



JUSTIFICATION / ALTERNATIVES

Justification and Benefits:

On 9/12/16 FDEP issued a Consent Order (C.O.) for the Lake Utility Services North and South systems for exceeding the LRAA for TTHM. Under the terms of the C.O. the Utility was required to conduct a treatment study and submit an engineering analysis report outlining various treatment alternatives that would lower the TTHM values and return to compliance with the rule. The final engineering report identified four treatment technologies that would reduce TTHM values; ozone, granular activated carbon, ion exchange and membrane filtration. The report included the effectiveness of each option as well as capital investment costs and operation and maintenance costs. Of these treatment options, membrane filtration was selected as the most appropriate technology based upon effectiveness, capital costs, maintenance costs, complexity, consistency, reliability, ease of future expansion, safety and required Operator skill set.

The design phase is expected to be complete within 180 days. During this time there will be a pilot test conducted to insure that membrane filtration can in fact achieve the required TTHM reduction. While the pilot test is underway, design work will be performed in parallel to meet the deadline requirement under the C.O. The project will first be permitted through FDEP then through Lake County for site plan and a building permit.

Risk Evaluation

This design project is necessary to implement in a timely manner in order to meet two deadlines within the C.O., 1) the 60 day requirement to select a design engineer and 2) to meet the 180 design and permitting deadline. Failure to do so will generate a violation including fines that are not recoverable. Being that the first step in the design process will be to conduct a pilot test and verify that the chosen treatment technology best suits the need, the risk associated with selecting membrane technology will be omitted up front.

Alternatives Considered:

The Utility has considered permanent use of Lake Groves upper floridan wells #1 and #2 as the primary source; however, the St. John's Water Management District has mandated, within the Consumptive Use Permit, that the Utility use lower floridan well #3 as the primary source.

Four alternative treatment technologies were evaluated with membrane treatment determined to be the least capital cost and maintenance expense.

Technical Review Summary:

Project was presented to the CPRT on 12/1/2016 and approved without the need for revision.



Financial and Regulatory Implications

Capital Plan

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Proposed Project Spend	330,832				
Project Spend in Current Plan	500,000				
Variance	169,168	-	-	-	-
CIAC Collected					
Net Rate Base	330,832	330,832	330,832	330,832	330,832

(if applicable)

O&M Cost Impact B/(W)

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Financial Justification

This project is an engineering study ordered by the FDEP to reduce the LRAA for TTHM. There is no impact on O&M as a result of the project.

Estimated Revenue Impact per Customer:

Number of Customers Impacted:

Served	Rate Payers
(3.46)	(3.16)
10,914	11,930

Utility Financial Impact

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
O&M Impact on EBITDA B/(W)					
Depreciation Impact on EBIT B/(W)	(9,925)				
Under-recovery on capital B/(W)	(27,832)				
Net EBIT Impact B/(W)	(37,757)				

Timing and Supporting Information on Rate Recovery

This project's estimated completion is June of 2017 and rate recovery should begin in Sep of 2017

Regulatory Plan Implications

This is a proforma project included in the 2016 UIF consolidated rate case filed in 3Q16

Assumptions

ROE: 10.25%, Cost of Debt: 6%, Equity Percentage: 50%, Tax Rate: 37.63%, Depreciation Rate: 1.5%
 After Tax Return on Rate Base = $10.25\% \times 50\% + 6\% \times 50\% \times (1 - 37.63\%) = 6.9961\%$
 Pretax Return on Rate Base = $6.9961\% / (1 - 37.63\%) = 11.217\%$
 Total Revenue Required = Pretax Return on Rate Base + Depreciation Rate = $11.217\% + 1.5\% = 12.717\%$
 Please note the under-recovery on capital includes equity, taxes, and debt portions



Approvals

EAM Prime Review

Review Completed by Date:
Does project align with utility plan and meet technical requirements? Yes No

Comments

This project aligns with the utility plan and meets UIF technical requirements.

Technical Peer Review

Review Sponsored by Date Held
Approval to proceed Yes No

Comments (note if feedback received in review incorporated)

None.

FP&A Review

Review Completed by Date:
Does Project comply with current Utility Rate and Regulatory Plan? Yes No

Comments

Approvals

Applicable?

Regional Manager:	<input type="text" value="Bryan K. Gongre"/>	Date: <input type="text" value="12/5/2016"/>	<input checked="" type="checkbox"/>
VP Operations:	<input type="text" value="Patrick C. Flynn"/>	Date: <input type="text" value="12/5/2016"/>	<input checked="" type="checkbox"/>
President:	<input type="text" value="John Hoy"/>	Date: <input type="text" value="12/6/2016"/>	<input checked="" type="checkbox"/>

Approval or Re-Direction Comments

Lake Groves

Advanced Water Treatment Improvements



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Lake Groves

Advanced Water Treatment Improvements



Kimley»Horn

November 18, 2016

Mr. Bryan Gongre
Regional Manager
Utilities Inc. of Florida
200 Weathersfield Avenue
Altamonte Springs, FL 32714

Re: Lake Groves Water Treatment Facility Improvements

Dear Mr. Gongre and Members of the Selection Committee:

Utilities Inc. of Florida in their Lake Utility Services (LUSI) service area has requested a qualifications package for the proposed improvements to their Lake Groves Water Treatment Facility in south Lake County. The LUSI service area has had elevated levels of TTHMs in the distribution system in recent years. The service area has been studied to determine the wells which have the largest impact on the system. Based on the completed analyses, it has been determined to provide advanced treatment to the Lake Groves facility as a means of reducing the overall TTHM levels in the LUSI service area. The analysis further determined low pressure membrane filtration is the best overall option for this site. While the facility is currently rated at six million gallons per day (MGD) of maximum day capacity, the improvements will provide 4 MGD of treatment capacity. This will provide sufficient water treated to an advanced degree to keep the TTHM levels within compliance throughout the system.

Kimley-Horn has significant experience as a leader in the membrane industry and has continued to expand its leadership and with that expansion a renewed commitment to the relationships these additions bring to the team. Our designated team provides the most knowledgeable staff for the leadership of your project. Having previously provided the designs for this facility for nearly 20 years, I know and understand the intricacies of this facility and the effort this expansion requires to be successful.

Project Understanding. The project scope of work encompasses a need for a specialty engineering skillset to achieve success. Specifically, this expansion will require an intricate knowledge of the necessary technology coupled with a knowledge of the site and the co-located wastewater facility to provide the most technically sound and economical solution. Our team brings a complete knowledge of the technology needed for this project coupled with an unsurpassed knowledge of the site. This knowledge will allow the design and piloting to proceed smoothly through a very tight design and construction schedule.

Schedule Importance. This project is under a very tight schedule through the consent order issued by FDEP. The facility needs to be completely designed within six months of authorization. The construction schedule will also need to be maintained which will require the FDEP and County permitting be maintained on a strict schedule as well. Our team understands the importance of schedule, the steps needed to ensure timely delivery, and will complete the design efforts quickly and efficiently.

Technical Expertise. Your staff does not currently understand the process well. As such, the engineering firm selected for this expansion must be knowledgeable of the MF equipment, experienced and prepared to address the intricate details of the operation, troubleshooting and field startup services. I can ensure our staff will be standing side by side with your staff to work through any challenges or bugs that surface from this expansion. You'll want to have that service by your side through the design, construction and long into the future. We believe our team offers the best customer service and availability combined with hands-on experience to support you through this project and the decades ahead.



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Full-Service Project Team. We have assembled the best possible team to successfully execute the services outlined in your SOQ. With **Steve Romano, P.E.** as Project Manager, along with **Lance Littrell, P.E.** as our technical lead, we have developed a team with the most experience on site with an industry design leader in the membrane filtration. In addition, we have added the necessary electrical expertise of Bailey Engineering Consultants. **Steve Bailey, P.E.** brings the electrical experience and knowledge of the existing system and SCADA system which is essential to our Kimley-Horn team. Together, we will guide your expansion from design through construction in a smooth, efficient manner, with a goal of minimizing operational impacts. With our team's experience in the industry, you can be confident we are the right choice for Utilities Inc.

As your historical project manager for your projects, I understand your intentions for this expansion and the future needs of the facility. Having been 'on-call' with this facility since 1997, I can assure you that I will remain dedicated to the responsive service and prompt turnaround on your requests for support. Kimley-Horn is committed to broadening your services with the right team, the continuity of a project manager you know well, and the continuation of our service to you for this very important project.

Sincerely,

KIMLEY-HORN

Steve Romano, P.E.
Project Manager



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Tab 1. Firm Experience

Kimley-Horn was founded in 1967 in Raleigh, North Carolina by Bob Kimley and John Horn—two senior engineering professors at North Carolina State University. The expertise of the firm was initially focused on traffic planning and public transportation projects. In the ensuing 49 years, the firm has expanded both geographically and in the variety of planning, engineering, and environmental services that it provides.

Today, Kimley-Horn has more than 2,700 employees in 79 offices in 23 states offering a full range of consulting services to local, regional, national, and international clients. In Florida alone, there are more than 500 employees in 14 offices. Kimley-Horn offers their clients the individual, personal service they would expect from a local firm combined with the manpower and technical resources of a nationally-ranked engineering firm.

Additionally, many employees are former municipal engineers and planners who have been on our clients' side of the table and are familiar with local government procedures.

In 2016, our firm was ranked #7 on the Fortune 100 Best Companies to Work For and named Southeast Design Firm of the Year in 2015 by Engineering News Record. We are proud to be recognized for our ability to provide prompt and responsive client service. We operate as a single business unit, meaning the full range of our firm's resources

Engineering News-Record (ENR) annually compiles and publishes the rankings of the 500 largest U.S. design firms (architectural and engineering firms), measured by gross revenues. Kimley-Horn's growth over the years is reflected in its steady rise on ENR's top 500 list. **The firm first appeared on the list in 1981, when it ranked 421st.**

Today, Kimley-Horn ranks **28th overall and 12th among the top 100 "pure design firms."**



can be applied to complete your projects efficiently without barriers or corporate limitations. Kimley-Horn is recognized nationwide for the quality of its work environment, for its stature as a business enterprise, and for the outstanding work of its consulting staff. In 2016, Engineering News-Record (ENR) ranked Kimley-Horn 28th for overall Design Firms; 12th among top 100 "Pure Design Firms," and 10 of 50 for Transportation. In addition, in 2015, ENR selected Kimley-Horn as the Southeast Design Firm of the Year. Fortune magazine ranked us #7 on the Fortune 100 Best Companies to Work For in 2016. This growth and success have been accompanied by a commitment to providing responsive client service, pursuing continuous quality improvement, and operating as a business-based practice.

We are proud to be recognized by the industry and by our clients for our ability to provide prompt and responsive client service. We operate as a single business unit, meaning the full range of our firm's resources can be applied to complete your projects efficiently without barriers or corporate limitations.

Kimley-Horn has all the ingredients of a successful consultant firm—a proven record of client service, adaptability, versatility, and responsiveness. Kimley-Horn's approach gives our clients the best of both worlds—the resources of a large, nationally-ranked firm and the personal attention and response of a small dedicated professional team.



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Water Resources Expertise

For nearly 50 years, Kimley-Horn has demonstrated a passion for water resources. Our team of engineers has expertise in water treatment facility design ranging from systems as simple as aeration/chlorination to reverse osmosis, membrane softening, ion exchange, and distillation. Our capabilities encompass all planning, design, permitting, and construction observation services, including the design of wells, master pumping stations, and water storage facilities. You can be confident in our proven ability for every facet of water wells and water treatment services, encompassing all planning, design, permitting, and construction observation services for designing new plants or expanding existing ones. Kimley-Horn can also provide assistance with the following water resources services:

- Water supply, treatment, and distribution
- Water plant and system design
- Water system modeling
- Water and sewer utility design
- Water/Wastewater/reclaimed water transmission
- Stormwater management
- Stormwater modeling
- Flood control and floodplain management
- Alternative water supply strategies
- Groundwater modeling
- Aquifer storage and recovery
- Well design and construction
- Wellfield development
- Water resources permitting
- Grant funding assistance



Kimley-Horn has a distinguished history of successfully completing projects. Our success is due to a combination of effective project management, strong technical expertise, and a steadfast quality control program. In addition, our subconsultant partners **Bailey Engineering** and **Borelli + Partners** complement our expertise. The following is a sampling of similar projects; we believe these projects best illustrate our team's qualifications and relevant experience for this project.

Site Experience

Lake Groves Water Treatment Plant

Since 1997, Steve Romano, PE has been providing design for the Lake Groves Water Treatment Plant. The designs have included both storage tanks, Well 3, the degasifiers, the high service pumping, and the chemical systems. His experience in the service area included master planning the area for the integration of Lake Groves with the LUSI North system. This led to an interconnection of the two utilities into a combined service area allowing the Lake Groves facility to supplement the northern service area. Over the years advanced modeling was performed to help balance the system through this interconnect. When the Disinfection By-Product Rules (DBP) were promulgated, Steve helped model the system to determine how to best balance the water plants to keep the water compliant. Subsequent to these efforts the SCADA system was implemented to allow for greater control of each well site and facility. With the implementation of the Stage 2 DBP Rule, Steve brought on Lance Littrell, PE to assist with the advanced water treatment analysis necessary to determine the most cost effective solution to meet this new challenge. Together they worked with the Utility to chart a path forward for continued, reliable compliance for the service area.



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Treatment Experience

17.14-MGD Hobart Membrane WTP Utilities Membrane Replacement and Water Treatment Plant (WTP) Improvements

Indian River County, FL

Kimley-Horn is providing technical support and oversight of membrane replacement and improvements to Indian River County Utilities (IRCU) North Hobart membrane treatment plant. Several of the membranes have lost their useful life and IRCU chose our team to oversee membrane replacement and explore methods of improving efficiency and water quality. Our team is working on reviewing membrane replacement options which will reduce fouling potential, improve water quality, and increase recovery while lowering overall operating costs. A significant amount of raw water bypass is used, which has contributed to an increase in disinfection byproducts. Through better membrane selection, our intent is to improve overall finish water quality without requiring major equipment changes and an increase in overall operating costs. **Total Project Cost:** N/A; **Construction Completed:** On-going; **Client:** Indian River County Utility Services, Vero Beach, FL, (772) 770-5300

South Martin Region Utility, Membrane Bioreactor Facility

Hobe Sound, FL

Kimley-Horn conducted a preliminary investigation for South Martin Region Utility to determine space requirements, land requirements, and planning level construction cost estimates for construction of a 2.0 MGD membrane bioreactor (MBR) facility that would serve a potential large new customer of the Utility. The MBR treatment process was selected since the UF/MF membranes deployed in a facility of this nature leads to the lowest space requirements and highest water quality



which would assist the utility in their treated wastewater reuse program. The MBR treatment facility was adopted as a part of the Utility's master plan. **Client:** South Martin Regional Utility, Hobe Sound, FL, (772) 542-6259

Utilities and Solid Waste North Jensen Energy Recovery Implementation

Martin County FL

Martin County Utilities owns and operates the North Jensen Water Treatment Plant, a low pressure brackish reverse osmosis (RO) water treatment facility. A combination of 10 year old membranes and declining raw water quality from the Floridan aquifer led to difficulties meeting the rated treatment capacity. In order to address these deficiencies and improve operating efficiencies of the RO skids, the Kimley-Horn team developed bid documents for membrane replacement along with implementation of energy recovery turbines which utilize interstage boost. In addition, it is estimated that the ROI (return on investment) for these improvements is less than 6 years and will save nearly \$150,000 per year in operating costs. Kimley-Horn permitted, designed, and is currently overseeing the construction of these improvements for Martin County Utilities. **Client:** Martin County Utilities and Solid Waste, Stuart, FL, (772) 221-1442



Lake Groves Advanced Water Treatment Improvements



Town of Smithfield, Water Treatment Plant Operational Improvement Evaluations

Smithfield, VA

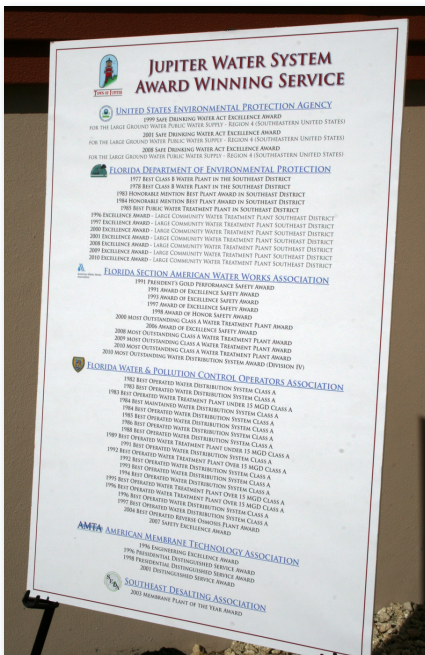
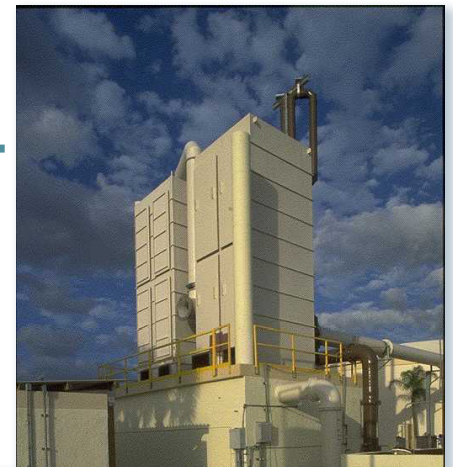
The Town of Smithfield water treatment plant (WTP) uses reverse osmosis (RO) for removal of fluoride in its drinking water. Silica scaling in the treatment trains was causing membrane fouling and inefficient operations. The plant has a metered concentrate discharge to Hampton Roads Sanitation District (HRSD) because of high phosphorus levels in the waste stream that were costing nearly \$250,000 per year. The original design concept was to discharge concentrate into a nearby creek, however, the presence of phosphorus in the raw water precluded them from obtaining permitting to discharge to the creek. Kimley-Horn was tasked with investigating phosphorus removal methods to obtain the necessary permitting. The full scope of services included the evaluation of silica scaling, phosphorus removal, concentrate discharge, and a variety of plant operational improvement evaluations. Kimley-Horn also prepared a preliminary engineering report (PER) that provided investigation summaries along with recommendations for design, permitting, and construction of improvements that included an opinion of probable construction costs. **Project Cost:** \$43,000; **Construction Completed:** On-going; **Client:** Town of Smithfield (VA), Smithfield, VA

Nanofiltration Water Treatment Facility (WTF)

Town of Jupiter, Jupiter, FL

Kimley-Horn was selected by the Town of Jupiter to provide engineering services during the construction of a new 18.5-MGD nanofiltration water treatment facility. The membrane configuration on this project was unique and ground breaking because it employed center feed membrane vessels to significantly reduce operating costs. Other unique features included the requirement of the project be constructed on an existing water treatment plant site which is very densely developed. Space

was extremely limited and the existing water treatment plant needed to remain in operation at all times during construction of the nanofiltration plant. Kimley-Horn provided all programming, an integration of the new plant control system, and updated the existing 12.5-MGD reverse osmosis (RO) water treatment plant control system. Upon completion of this project, both nanofiltration and RO plants—along with an exchange treatment facility, lime softening facility, lime sludge recovery system, two hydrogen sulfide stripping systems, and a concentrate treatment facility—integrated into a single control system operated at a single control station. **Total Project Cost:** \$37,000,000; **Construction Completed:** 2010; **Client:** Amanda Barnes, Assistant Utility Director, Utility Department, Jupiter, FL, (561) 741-2537





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5.5-MGD Jensen Beach Brackish Water Reverse Osmosis Water Plant

Martin County, FL

In 2003, Kimley-Horn completed the design, permitting, and construction of the North Martin County membrane water treatment plant final expansion to 5.5-MGD rated capacity. The expansion included a 1.8-MGD membrane train, a spare feedwater pump (including piping and valving to allow on-line service to existing membrane trains), degasification, replacement of the existing scrubber system with a two-stage caustic wet-scrubber, high-service pumping modifications (including retrofit of two horizontal split-case pumps to two 3,200-GPM vertical turbine pumps with soft start/stop motor starters), and bulk chemical storage. The firm completed design of the initial water plant facility in 1992 and the first 1.8-MGD expansion in 1998.

Our services included design, FDEP permitting, site development permitting, modifications to the SCADA system, and construction phase services. The facility is a critical element to their consolidated system and provides potable water to both Martin County north and south service areas.

The expansion included construction of a fourth Floridan supply well with raw water main, 1.8-MGD reverse osmosis (RO) membrane train to utilize interstage energy recovery, 250-hp feedwater pump, chemical system improvements, degasifier, caustic scrubber system, 5.0-million gallon ground storage tank, two 150-hp high-service pumps, raw water blending, 10,000 gallon hydropneumatic tank, and a 1,000-kw generator set for the lime softening plant. The project also provided SCADA improvements to the existing facility, including optimizing the existing system, enabling the existing system to operate the plant expansion components without any upgrades to the PLC system. **Project Cost:** \$250,000 (fee); **Construction Completed:** On-going; **Client:** Martin County Utilities and Solid Waste, Stuart, FL, (772) 221-1442



Lake Region RO WTP#11 Operational Improvements

Palm Beach County Utilities, FL

Kimley-Horn provided support in restoring lost treatment capacity and improving operations of the 10-MGD Lake Region RO WTP #11, a brackish water treatment facility. The facility had struggled with a rapid decline in raw water quality and the Kimley-Horn team was instrumental in helping restore plant capacity through enhancements to the WTP and operational improvements. The Kimley-Horn team designed energy recovery improvements to the reverse osmosis (RO) system and identified several operational changes to optimize system recovery, including:

- iggy back sulfuric acid contract, which saved more than \$700,000
- Improved acid injection detail, which eliminated costly static mixer replacement
- Improved plant and wellfield operating plan
- Relieved plant operators of “white-knuckled” startups
- Restored treatment capacity with energy recovery devices
- Reduced energy costs by more than 25%
- Mitigated need for membrane cleaning
- Identified flow meter issues with RO trains
- Drastically reduced noise levels in process room through the use of interstage energy recovery devices



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Advanced Water Treatment Improvements



Enhancements to the SCADA system were also implemented, which allowed automatic download of operating data to their Normalization program, greatly reducing staff time in managing operating data. With these improvements, the WTP was not only able to recover nearly 30% reduction in plant capacity, but operate at a higher capacity and efficiency. **Project Cost:** \$2,172,000; **Construction Completed:** On-going; **Client:** Palm Beach County Water Utilities Department (PBCWUD), West Palm Beach, FL (561) 493-6000

Mega Yacht Microfiltration/Ultrafiltration Membranes Design

Kimley-Horn and Associates conducted a preliminary design and analysis for installing a microfiltration (MF), ultrafiltration (UF), UF/MF membranes in the wastewater treatment system on a luxury mega yacht. The UF/MF membrane additional installation was needed in order to meet new United States Coast Guard standards for discharge of wastewater in American ports. The result of the analysis was that flat plate style MF membranes would perform best and allow the system to meet Coast Guard standards. **Client:** CONFIDENTIAL

Dixon Water Treatment Plant Reverse Osmosis Improvements

Jacksonville, NC

Kimley-Horn designed treatment plant improvements to upgrade the plant to achieve the Environmental Protection Agency (EPA) 2012 Disinfection Byproducts Rules, address saltwater intrusion, and eliminate silica from the product water. The team designed several hydraulic improvements, three 1-million gallon per day (MGD) reverse osmosis membrane treatment trains, piping, concentrate (wastewater) treatment processes, and chemical addition and storage facilities for scale inhibitor, caustic, and aeration. As part of this project, extensive analysis and water sampling was done for the product and wastewater streams in advance of renewing the plant's National Pollutant Discharge Elimination System (NPDES) permit. Ultimately, the NPDES permit was renewed 6 months in advance of the DWQ's 5-year cycle, allowing the project to advance to construction phases on time and secure low-interest loan funding through the state and EPA.

Kimley-Horn completed design of an expansion to ONWASA's Dixon WTP. This expansion added 3.0 MGD of treatment using the reverse osmosis process to remove silica, reduce hardness, remove iron, and reduce total organic carbon. The reverse osmosis expansion included three 1.0-MGD trains, and the permeate produced by these trains will be blended with water treated by the existing iron removal process on a 3-to-1 ratio. This project included a number of specific components. The existing raw water delivery pumps are being kept in service; the concentrate stream is being treated



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for iron oxidation/settlement and then being discharged with the existing backwash; and the reverse osmosis trains are being installed in the existing building. To prove that the iron and silica would not scale/foul the membranes, Kimley-Horn designed a pilot unit and then operated the unit for 16 weeks using raw water without pretreatment for iron removal. The plant is under construction with Kimley-Horn serving as the Owner's representative. Services for this project include water treatment design, NPDES permitting, and pilot testing. **Project Cost:** \$3,200,000; **Construction Completed:** 2013 **Client:** Onslow Water & Sewer Authority (ONWASA), Jacksonville, NC, (910) 455-0722



Lake Groves

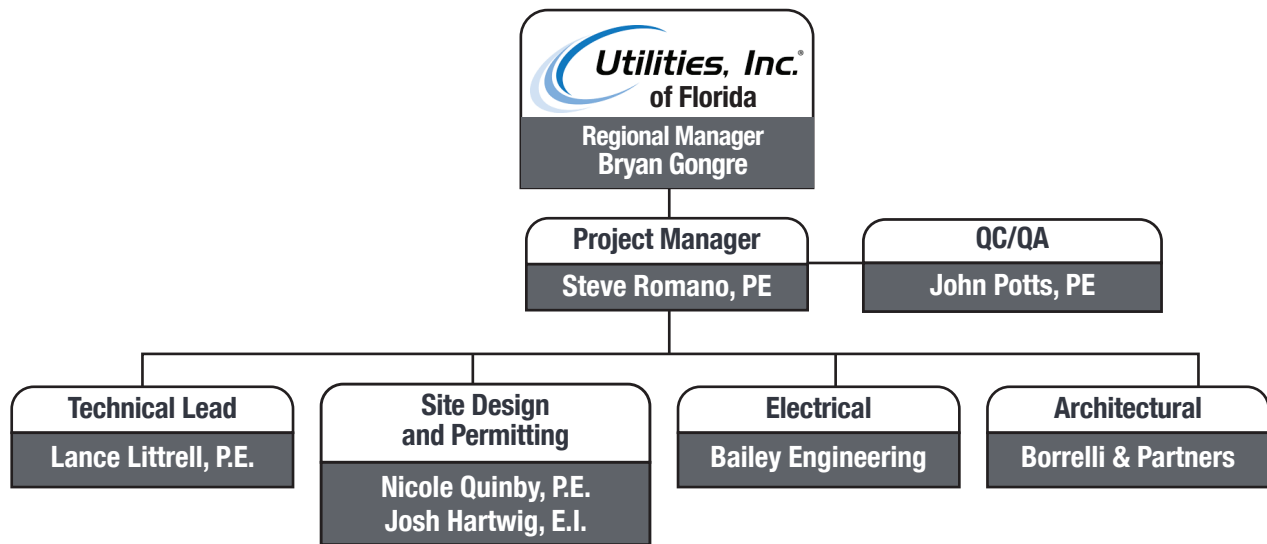
Advanced Water Treatment Improvements



Tab 2. Expertise of Key Personnel and Staff

ORGANIZATION CHART

The organization chart below illustrates our project team structure and defines relationships among disciplines. We have brought together a team of experts based on the needs outlined in the scope of services. We have more than ample staff with relevant experience to make this contract successful for the City. Resume biographies of key personnel are highlighted below. Project team resumes for Kimley-Horn and its subconsultants are provided at the end of this section.



Subconsultants

Bailey Engineering Consultants, Inc. (BEC) is a multidisciplinary consulting engineering firm specializing in electrical, instrumentation, and SCADA system designs for water and wastewater projects. Incorporated in 1992, BEC is a second generation consulting engineering firm with offices in Cooper City, Lake Worth and Orlando. Water treatment plant design experience is diverse and includes electrical and control system designs for ion exchange systems, membrane filtration, reverse osmosis treatment, ultrafiltration, and lime softening.

Electrical distribution system experience covers from low-voltage applications up to medium voltage 13-KV distribution system designs. BEC currently implement “smart” designs” on projects and utilize data highways as a means to communicate to motor starters, variable frequency drives, and motor monitoring equipment. BEC integrates their data highway systems seamlessly and reliably into plant control systems, ensuring the end user of a fully redundant powerful power communication architecture. Instrumentation systems design experience includes SCADA and PC-based systems, This experience encompasses computer/PLC controlled systems utilizing SCADA-based systems for interfacing to remote locations, as well as hard wired relay controlled custom solutions.

Borrelli + Partners, Inc. is a leading architectural, planning, landscape and interior design firm with offices located in Orlando and Coral Gables, Florida. We are a minority-owned business and certified Small Business with a staff as diverse as our work. Established in South Florida since 1968, Borrelli + Partners has developed a reputation for design excellence while maintaining the highest technical quality and an extensive track record of delivering projects within schedule and budget. The firm has been responsible for the development of imaginative design solutions for a multitude of complex programs and project types. These market segments include: education, aviation, transportation, parks and recreation facilities, government, federal and healthcare.

Steve Romano, P.E.

Design & Permitting

Relevant Experience:

Lake Groves Water Treatment Plant Improvements — Steve has designed all of the major improvements at this facility since 1997. This has included both ground storage tanks, the high service pump station, packed tower aerators, chemical systems, and the Lower Floridan well 3. The projects have included all aspects of permitting, design, and construction services as well facility planning for future growth and regulatory needs

CR 561 Water Treatment Plant (WTP), Clermont, FL — Project manager. This project involved the design, permitting and construction services for a new WTP. The WTP was designed to replace three smaller systems for a regional facility with greater control. The WTP included the design of an 800,000-gallon ground storage tank, a new high-service pump station, electrical building, and the associated piping improvements to bring the offsite wells to the new facility. This site was co-located with a new elementary school and required rezoning, planning, and additional coordination to satisfy the site and access requirements of the Lake County School Board.

Wekiva Hunt Club Headworks Improvements, Longwood, FL — Project manager. This project entailed the design, permitting, and construction services for a new headworks and equalization basin for a 2.9-MGD water reclamation facility. A new mechanical bar screen installed in a new channel and splitter box was designed for the facility. The flow running through this structure allowing average flows to proceed on the three treatment trains and excess flows are diverted into the 900,000-gallon equalization basin. During periods of low flow submersible pumps in the equalization basin, pump flow backs up to the splitter structure for distribution to the treatment trains. Since completion of construction, the peaking factor of the influent has dropped to less than 2.0 from a preconstruction value of 3.5–4.0.

Sanlando Utilities – Apopka Reclaimed Interconnect, Apopka, FL — Project manager. This project consisted of approximately 4 miles of 16-inch reclaimed water main interconnecting the Sanlando Utilities reclaimed system with the City of Apopka water reclamation facility storage tanks. The pipeline was constructed through congested rights-of-way and through residential areas. This interconnect transfers 1-2 million gallons per day of reclaimed water from the Sanlando system to the City of Apopka.

Lake Grove Odor Control Improvements, Lake County, FL — Project manager. This project was initiated due to odor complaints from neighboring homeowners. An odor survey of the site was completed to determine the source and severity of the odors at the facility. The primary source of the odors was determined to be the headworks of the facility. An odor control system was designed to draw the air out of the headworks structure. Further, a screenings washer/compactor was installed to minimize odors in the screenings dumpster.

Southwest Regional Water Reclamation Facility Expansion, Deland, FL — This project included the design for the addition of a new treatment train to the facility. The new treatment train is designed to ultimately handle 6.0 MGD. This phase adds a new headworks structure, master lift station, biological treatment unit, tertiary filters, chlorine contact chamber, transfer pump station, electrical buildings, generator, and all associated site improvements. The permitted capacity of the facility was increased from 1.2 to 1.7; however, the headworks, master pump station, tertiary filters, and chlorine contact chamber are all designed to meet flows up to 3 MGD, minimizing future expansion costs. Ultimate expansions will double this treatment train to the ultimate capacity of 6.0 MGD.



Special Qualifications:

- Professional engineer with 20 years of experience as a consultant working in the water and wastewater industry
- Preparation of utility plans, including water plans, wastewater plans, reclaimed water plans, process studies, distribution studies, collection/transmission studies, and DBP studies
- Water system design varying from simple chlorination facilities with wells, storage, and high-service pumping; design of advanced treatment facilities using ion exchange systems, GAC, ozonation, forced draft aeration, and odor control systems; design of facility rehabilitations and replacements; greenfield facilities design; utility acquisitions; and facility phasing from a well with a hydro tank, to adding ground storage and high-service pumping, through to advanced treatment for things such as organics removal, sulfur removal, or 4 log analysis and contaminant removal
- Pipeline design from 2 inches to 36 inches for water, sewer, and reclaimed systems involving rights-of-way and easements across railroads, water bodies, interstates, and local roads
- Design and rehabilitation/replacement of lift stations, including master pumping stations, and conversions of old can style lift stations to standard submersible lift stations
- Preparation of master plans for water, wastewater, and reclaimed water
- Review of development plans for municipalities
- Preparation of funding applications for grants and loans through various state agencies such as the Florida Department of Environmental Protection and the water management districts
- Master Modeler using Bentley's WaterCAD software
- Proficient using SewerCAD

Professional Credentials:

- Bachelor of Science, Environmental Engineering, University of Central Florida
- Professional Engineer in Florida
- Water Environment Federation (WEF)

John Potts, P.E.

Design & Permitting, Start up and Commissioning

Relevant Experience:

South Martin Region Utility, Membrane Bioreactor Facility, Hobe Sound, FL — Project Engineer. Kimley-Horn conducted a preliminary investigation for South Martin Region Utility to determine space requirements, land requirements, and planning level construction cost estimates for construction of a 2.0 MGD membrane bioreactor (MBR) facility that would serve a potential large new customer of the Utility. The MBR treatment process was selected since the UF/MF membranes deployed in a facility of this nature leads to the lowest space requirements and highest water quality which would assist the utility in their treated wastewater reuse program. The MBR treatment facility was adopted as a part of the Utility's master plan.

Mega Yacht Microfiltration/Ultrafiltration Membranes Design — Project Engineer. Kimley-Horn and Associates conducted a preliminary design and analysis for installing a microfiltration (MF), ultrafiltration (UF), UF/MF membranes in the wastewater treatment system on a luxury mega yacht. The UF/MF membrane additional installation was needed in order to meet new United States Coast Guard standards for discharge of wastewater in American ports. The result of the analysis was that flat plate style MF membranes would perform best and allow the system to meet Coast Guard standards.

Indian River County Utilities Membrane Replacement and Water Treatment Plant (WTP) Improvements - 17.14-MGD Hobart Membrane WTP, FL — QA/QC reviewer. Kimley-Horn is providing technical support and oversight of membrane replacement and improvements to IRCU's North Hobart membrane treatment plant. Several of the membranes have lost their useful life and IRCU chose our team to oversee membrane replacement and explore methods of improving efficiency and water quality. Our team is working on reviewing membrane replacement options which will reduce fouling potential, improve water quality, and increase recovery while lowering overall operating costs. A significant amount of raw water bypass is used, which has contributed to an increase in disinfection byproducts. Through better membrane selection, our intent is to improve overall finish water quality without requiring major equipment changes and an increase in overall operating costs.

Fort Myers Membrane Water Treatment Plant (aka Conversion of 12.0-MGD Nanofiltration Plant to 12.0-MGD Brackish Water Reverse Osmosis Desalting Treatment Plant), Fort Myers, FL — Project manager for the investigation of operational and construction issues. Provided consultation and design services for the conversion of the City of Fort Myers' three-stage 12.0 MGD nanofiltration plant to a brackish water two-stage 12.0 MGD Reverse Osmosis process. Replacement and reconfiguration of the membranes included using ultra low-pressure RO membranes. Also, several additional engineering tasks essential in the WTP conversion included construction of an 80,000-gallon clearwell, the relocation of the existing degasifiers, installation and implementation of a new automated brackish raw water supply system, and integration of independent concentrate control valves on each of the three process trains; all while maintaining operation of this facility.

Emergency Generator for a 12.0 MGD Membrane Treatment Plant, Plantation, FL — Project manager for design, construction and startup of a 1250 KW diesel driven generator which provides power for 100% operation of the 12.0 MGD Membrane Treatment Plant. Installation of this generator allowed the City of Plantation Water Treatment Plant to substantially reduce electrical costs by using an interruptible rate from the power company.



Special Qualifications:

- More than 40 years of water treatment plant design experience
- More than 40 years of water treatment plant design and utility system design, operation, and start-up experience
- Served as project director of one of the largest operating brackish water reverse osmosis plants in the country
- Served for eight years on board of directors for the American Desalination Association; Chairman of the American Water Works Association Desalting Committee for three years; board member of the Southeast Desalting Association
- Directed more than 15 large-scale drainage study and design projects.
- Recipient of 2015 Special Recognition Award from the Southeast Desalting Association "In recognition of your exemplary and faithful dedication to the Southeast Desalting Association and its Members."

Professional Credentials:

- Bachelor of Science, Mechanical Engineering, University of S. Alabama
- Professional Engineer in Florida
- Professional Engineer in Louisiana
- American Membrane Technology Association
- American Water Works Association
- Florida Engineering Society
- International Desalination Association
- Southeast Desalting Association

Lance Littrell, P.E.

Project Manager

Relevant Experience:

Integrated Microfiltration (MF)/Reverse Osmosis (RO) Water Treatment Plant (WTP) Addition, Bowling Green, OH — Project engineer for designing an expansion of its existing water treatment plant by using an integrated membrane system (IMS) to treat the reservoir water fed by the Maumee River. The viability of this new treatment process, as well as development of design criteria for the expansion of the WTP, was demonstrated in the Pilot Study Report.

The project approach first developed pre-selection specifications for the MF system and the LPRO system for bidding by the City. The LPRO and MF systems were competitively bid to qualified and experienced system suppliers. A set of construction bid documents were prepared for the installation of the City's pre-selected equipment, to furnish and construct the other station improvements. Permitting included NPDES permit for surface water discharge of LPRO concentrate and construction permits for the facilities.

Reverse Osmosis Water Treatment Plant (WTP) Redundancy and Expansion Project, St. Lucie West Services District, St. Lucie, FL — Project engineer for analyzing and evaluating the existing treatment processes of a 3.4-MGD WTP to improve the redundancy of the facility while allowing for expansion of the facility. The study evaluated raw and finished water quality, chemical feed systems, reverse osmosis skid, post-stabilization treatment, and clean-in-place system.

0.5-MGD Hybrid Ultrafiltration and Reverse Osmosis (RO) Water Treatment Facility, Spanish Lakes Community, Fort Pierce, FL — Project manager responsible for the progressive membrane system design of ultrafiltration paralleled by RO. To support the design, QA/QC management, construction oversight, and technical manuals were created. This project used a proven technology in RO and combined with a newer ultrafiltration technology to produce low cost, compliant product water while reducing post-treatment process and equipment.

Water Quality Evaluation of a Reverse Osmosis (RO) Water Treatment Facility (WTF) Expansion and Upgrade, Vero Beach, FL — Project engineer for performing and evaluation of the raw water quality for the design and operation of the membrane, and established finished water quality goals to minimize re-equilibration effects in the distribution system. Further studies focused on the projected water quality of RO permeate from different membrane manufacturers, the blending of RO permeate and lime softened water at various ratios, and the evaluation of alternatives to the existing post treatment process.

Big Cypress Reverse Osmosis (RO) Train Upgrades Design, Seminole Tribe, FL — Project manager and project engineer responsible for completing the design, permitting, and construction of the RO system improvements for both RO trains, clean-in-place system, and control system upgrades. The project was constructed and started up, resulting in precise train control, automated data collection, and data reporting for the Tribe.

Water Treatment Plant #2 Reverse Osmosis (RO) Expansion, Clearwater, FL — Project engineer responsible for providing technical design of the membrane, ozone, and iron treatment systems and all facilities on the treatment plant site for the preliminary design, final design, and permitting efforts. The design included iron removal through oxidation and filtration, as well as TDS removal through RO followed by hydrogen sulfide removal through ozone treatment. Other facilities included a new treatment building, administration offices, several off-site wells and transmission mains, all new chemical systems, multiple ground storage tanks, concentrate disposal through deep well injection, electrical, instrumentation and controls, stormwater, and security design. All new facilities were designed to be shoehorned into the existing site preselected by the City.



Special Qualifications:

- Has 15 years of experience successfully delivering water, wastewater, and reclaimed water utility projects
- Experience includes the design, project management, construction oversight, and fabrication of reverse osmosis and ultrafiltration water treatment plants for municipal utilities
- Municipal experience includes a well-rounded portfolio of planning, design, construction inspection, and start-up services, as well as operations assistance; significant experience in design and hands-on construction of membrane treatment systems in the U.S. and abroad
- Serves as the Region III Chair for FSAWWA, as well as on the Board of Directors of the Southeast Desalting Association

Professional Credentials:

- Master of Business Administration, University of Central Florida
- Bachelor of Science, Mechanical Engineering, Old Dominion University
- Professional Engineer in Florida
- Professional Engineer in Ohio
- American Membrane Technology Association
- American Water Works Association
- Southeast Desalting Association (Board of Directors, 2011-2017)

Nicole Quinby, P.E.

Design & Permitting

Relevant Experience:

Utilities Inc. of Florida, Shadow Hills Wastewater Improvements, Longwood, FL

Project engineer. Acted as engineer of record for the design of two master lift stations, approximately 15,000 lineal feet of 12-inch forcemain, and wastewater facility upgrades, including pumping, screening, and equalization. Responsible for design, permitting, subconsultant management, bidding, and construction services.

Utilities Inc. of Florida, Church Avenue Forcemain Replacement, Longwood, FL

Project engineer. Acted as engineer of record for the design of 2,300 lineal feet of 4 and 6" inch forcemain. The forcemain is to be installed via horizontal directional drilling. Responsible for design, permitting, bidding, and construction services.

Florida Governmental Utility Authority, Fairways WWTF Replacement, Mt Plymouth, FL

Project engineer. Responsible for preliminary design, treatment technology evaluation, and SRF loan funding for the replacement of the existing 75,000 gpd Fairways WWTF. The three treatment technologies evaluated for the project were Marolf, Aeromod, and Fluidyne SBR.

Florida Governmental Utility Authority, Pasco County Lift Station Rehabilitation, Pasco County, FL

Project engineer. Acted as engineer of record, responsible for design, bidding, and construction services for rehabilitating twenty-eight lift stations. Upgrades included pump and valve replacement, piping replacement, and electrical upgrades.

Orange County Utilities, South Water Reclamation Facility, Orlando, FL

Project engineer. Acted as project engineer during design and bidding phases for the estimated \$78-million expansion of an existing water reclamation facility. The expansion included increasing the overall capacity from 43 MGD to 56 MGD treatment process; constructing a new 165-foot clarifier and associated return and waste sludge pumping stations; and adding screening and grit removal, filters, chlorine contact volume, effluent storage, and biosolids thickening and dewatering units. Primary role included the design of disc filters, chlorine contact basin expansion, internal recycling pumping, and solids handling facilities.

Orange County Northwest Water Reclamation Facility Pretreatment Facility Odor Control

Upgrades, Apopka, FL — Project engineer. Acted as engineer of record for the design of a biotrickling filter and carbon adsorption system. Responsible for design, permitting, subconsultant management, bidding, and construction services.

City of Orlando Lift Station 143 Odor Control Improvements, Orlando, FL — Project engineer. Acted as engineer of record for the design of a modular biofilter odor control unit. Additional work on site included an 8-foot block wall along the property and rehabilitation of the existing wetwell. Responsible for design, subconsultant management, bidding, and construction services.

Orange County Northwest Water Reclamation Facility Phase IIIA Expansion, Apopka, FL

Project engineer during construction phase of a \$32-million expansion and retrofit of an existing water reclamation facility. The expansion included increasing capacity from 7.5 MGD to 11.25 MGD; addition of new screening and grit removal equipment; conversion of existing MLE process with Carrousel oxidation ditches to 5-stage Bardenpho process for biological nutrient removal (BNR); and new BNR tankage, turbo gearless blowers, and solids handling equipment. Responsible for acting as the engineer's point of contact for the contractor and the client, responding to RFIs,



Special Qualifications:

- Has more than 10 years of experience as an environmental engineer specializing in wastewater treatment plant and pipeline design
- Technical engineering skills include wastewater treatment plant design, pipeline design, reuse feasibility planning, master planning, construction management, and permitting

Professional Credentials:

- Bachelor of Science, Environmental Engineering, Rensselaer Polytechnic Institute
- Professional Engineer in Florida
- Member, Water Environment Federation
- Secretary, Florida Water Environment Association Central Florida Chapter, 2010-2011
- Treasurer, Florida Water Environment Association Central Florida Chapter, 2011-2012
- Vice Chair, Florida Water Environment Association, Central Florida Chapter, 2012-2013
- Chair, Florida Water Environment Association, Central Florida Chapter, 2013-2014
- State Awards Chair, Florida Water Environment Association, 2014-present
- President, Central Florida Engineers' Week Committee, 2011-2013
- Florida Water Environment Association

reviewing and expediting shop drawings, periodic site visits and meetings to monitor progress, helping with interpretation and clarification of the contract documents, and initiating change orders.

City of Franklin Integrated Water Resources Plan Phase II, Franklin, TN — Project engineer. Provided technical support for the integrated water resources plan, which examined projects in stormwater, drinking water, wastewater, reclaimed water, stream restoration, and conservation. Duties included conceptual design of the proposed wastewater treatment plant.

Environmental Protection Agency 2012 EPA Guidelines for Water Reuse Update — Project engineer. Served on the Project Management Committee responsible for technical support for update of the EPA Guidelines for Water Reuse (2012, previously completed in 1992 and 2004). The resulting document was intended for worldwide distribution so that water reuse becomes a more implementable component of any water resources planning program.

City of Winter Garden Wastewater Treatment Facility Permit Renewal, Winter Garden, FL — Project engineer. Engineer of record for the FDEP operating permit renewal for the City of Winter Garden Crest Avenue Wastewater Treatment Facility. Responsible for completing the Operations and Maintenance Performance Report (OMPR), Capacity Analysis Report, and the permit renewal forms.

Orange County Lake Eve Pump Station; Orlando, FL — Project engineer. Responsible for the odor control system design at the Orange County Lake Eve Pump Station. Role included design of the odor control system components, including biotrickling filter units and associated piping.

Seminole County Heathrow Wellfield Redirect to Markham Regional Water Treatment Plant, Lake Mary, FL — Project engineer. Provided technical support for the completion of the 100% drawings for the Heathrow Wellfield Redirect Pipeline. Worked with regulatory agencies to determine permitting requirements for pipeline installation. This project encompassed raw water pipeline installation from the well to the Markham Regional Water Treatment Plant. The total pipe length was 12,000 lineal feet and included trenchless technologies.

City of Casselberry Utilities Improvement Project; Casselberry, FL — Project manager. The Utilities Improvement Project included replacement of two secondary clarifiers at the City's wastewater treatment plant, electrical upgrades to a reclaimed water booster pump station, and conversion of a can lift station to a submersible lift station.

City of Orlando Odor Control Equipment Evaluation, Iron Bridge Wastewater Treatment Facility; Orlando, FL — Project engineer. Served as project engineer for the odor control equipment evaluation project at the City of Orlando Iron Bridge Wastewater Treatment Facility. Duties included on-site odor control sampling, technology evaluation, and treatment unit sizing. This project included an evaluation of the master pump station and screening structure odor control units.

St. John's River Water Management District Aquifer Storage and Recovery Interconnect, Sanford, FL — Project engineer. Provided technical support for the completion of the preliminary design report (PDR) and development of the 30% drawings for the SJRWMD aquifer storage and recovery (ASR) interconnect. Worked with regulatory agencies in order to determine permitting requirements for pipeline installation. This project encompassed pipeline installation from the ASR well into an existing off-site reclaimed water storage tank. The total pipe length was 1,200 lineal feet and included trenchless technologies.

City of Valdosta Mud Creek Wastewater Treatment Plant Outfall, Valdosta, GA — Project engineer. Assisted with the design of the outfall pipeline from the Mud Creek Wastewater Treatment Plant into Mud Creek. Duties included pipeline design and coordination of the drawings and specifications. This project encompassed pipeline installation for a total pipe length of 1,250 lineal feet.

Confidential Client, Environmental Compliance Program, Nationwide — Project engineer. Participated in multimedia compliance assessments for a confidential federal agency and the U.S. Army Corps of Engineers. Assessed facilities in nine states across the nation for federal and state regulatory compliance with air emissions, hazardous materials, hazardous waste, solid waste, wastewater, and water quality. Coordinated the field effort, reviewed facility plans, provided quality assurance for daily findings (as well as the final report) and wrote programmatic findings for the agency-wide environmental management system.

City of Orlando Asset Management Study, Iron Bridge Wastewater Treatment Facility, Orlando FL — Project engineer. Served as project engineer to conduct an asset management study at the City of Orlando Iron Bridge Wastewater Treatment Facility. Duties included equipment assessment and identification, field visits and discussions with on-site operators, and database population for the final report.

Josh Hartwig

Design & Permitting, Construction

Relevant Experience:

Myrtle Lake Hills Water Main Improvements, Longwood, FL — Project Analyst. Acted as project analyst during design phase. Assisted with design and drafting of water main extension to the Myrtle Lake Hills area of the Utilities Inc. Sanlando Service Area. Designed pipe sizes ranging from two inches to eight inches. Total length of pipe around 3,000 feet.

Utilities Inc. of Florida Mapping Services, FL — Project Analyst. Acted as drafter for Utilities Inc. service area maps. Updated twenty-one service area maps, including water and wastewater utilities, for rate case submission.

CORIX Gillem Enclave Utilities Map, Atlanta, GA — Project Analyst. Assisted with identifying and drafting existing utilities located the at the Gillem Enclave base.

Church Avenue Force Main Relocation, Longwood, FL — Project Analyst. Assisted with designing and drafting 2300 feet of force main improvements along Church Avenue within the Utilities Inc. Longwood Service Area. Pipeline ranged from 4 inch force main to six inch force main, designed to be installed by directional drill.

Shadow Hills Wastewater Improvements, Longwood, FL — Project Analyst. Assisted with design and drafting of 8,000 linear feet of 12 inch force main along EE Williamson Road in Longwood, FL. Assisted with design of two master lift stations, and wastewater system improvements including headworks, equalization, and mixing systems.

Pasco County Lift Station Rehabilitation, FL — Project Analyst. Assisted with design and drafting of twenty-eight lift stations in the Pasco County Service Area for the Florida Governmental Utility Authority. Assisted with writing project specifications including piping, valves, lift station rehab, coating, and general conditions.



Special Qualifications:

- Proficient in MS Office, ArcGIS, and AutoCAD Civil 3D.
- Working knowledge of Solidworks, Mathcad, Matlab, Labview, and Pro Log.
- Construction management experience in project scheduling, as-built drawings, project documentation, submittal review, equipment procurement, project closeout, safety regulation compliance, purchasing negotiation

Professional Credentials:

- Bachelor, Mechanical Engineering, University of Central Florida
- Engineer Intern in Florida
- Member, Water Environment Federation
- Member, Florida Water Environment Association



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Tab 3. Approach

The improvements to the Lake Groves facility need to be completed on a very aggressive schedule per the Consent Order with FDEP. Once the contract is executed, we will need to complete the design within 180 days in order to be ready for permitting, bidding and into construction. Due to the aggressive schedule put forth by FDEP, you need a firm that can hit the ground running. Not only have we completed the preliminary study work for this facility, we have already begun the planning of the treatment plant knowing the criticality of compliance. The following draft schedule illustrates the milestones necessary to get this project completed.

PROJECT SCHEDULE		
Task	Start	Finish
Contract Authorization	12/5/2016	
Kickoff and Preliminary Design	12/15/2016	
Pilot Testing	1/15/2017	4/15/2017
Pilot Analysis	4/16/2017	4/30/2017
Membrane Facility Design	12/15/2016	5/31/2017
Concentrate/Wastewater Improvements Design	3/1/2017	5/31/2017
Lake County Site Permitting	5/1/2017	8/31/2017
FDEP Water Permitting	6/1/2017	7/31/2017
FDEP Wastewater Permitting	6/1/2017	7/31/2017
Bidding	6/1/2017	7/1/2017
Construction	8/1/2017	7/31/2018

Our intimate knowledge of the facility offers a running start to put this project on the fast track to completion. As you know, we have an in-depth knowledge of the site and preliminary configurations of the design, already approved by FDEP and planned for this facility. However, to provide the most effective design, we will need to perform parallel piloting efforts to confirm the membrane process parameters while developing the facility design. The process specifics will be finessed into the design as the pilot efforts are completed. We have identified piloting equipment and have made preliminary agreements to mobilize quickly. Immediately after authorization we will engage those agreements to get the pilot testing started within a few short weeks. We have already had conversations with membrane manufacturers to select the membrane models for this application and accessing availability for the specific elements for pilot testing. In the first month, we will mobilize pilot equipment while developing a brief plan to obtain FDEP approval of the pilot testing. Process wise, we have the plan ready to implement quickly for this facility.

The physical location, electrical and water connections of piloting equipment often becomes a delay for piloting projects. With our familiarity of the site, we anticipate the pilot unit being placed just east of the existing electrical building yielding an easy power supply for the unit. The water supply will be achieved by installing a 2-inch tap on the raw water line ahead of the existing sulfuric acid injection point. It is critical to have this connection prior to chemical addition to simulate the actual water quality for the FDEP approved treatment process. To simplify the FDEP approval process, the discharge will be placed either back into the transfer pump station or will be sent to the rapid infiltration basins depending on FDEP's approval. This configuration for piloting will be completed in early January so we piloting efforts can get underway quickly. Lance Littrell, as technical lead for this facility, will lead this process to make sure the piloting program is developed to provide the data necessary for the ultimate membrane selection and specific operational parameters.

While the process parameters are being confirmed through the piloting efforts, the site design team will be developing



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the layout for the site improvements. Preliminarily, we believe the best location for the membrane process building will be east of the electrical building. We will size and integrate the building facilities to account for the proposed and future membrane skids needed for the site buildout. Once the building footprint is developed, our architects will develop the building plans and exterior facade. Placing the building to the east of the electrical building will allow for easy access from the driveway and is close to the current process piping and controls. The piping configuration will divert the flow from well 3 to be processed through the membranes prior to any degasification and disinfection. The finished water (permeate) will then be piped back to the existing degasifiers for hydrogen sulfide removal, followed by disinfection and storage. Depending on how we configure the piping it may be necessary to relocate the sulfuric acid injection station used for pH adjustment. The site design will proceed in parallel with the piloting process and the details identified in the pilot will only affect the pump size, membrane elements, and skid specific design components. The improvements outside of the building and can include the preliminary design for the proposed concentrate disposal piping, flow monitoring and controls. Previous water quality testing showed very low levels of chlorides in the water. Because we are primarily removing organics from the raw water, we do not expect any obstacles to using the concentrate as a reclaimed water supplement. It is our understanding the current reclaimed system can no longer connect new users due to lack of reclaimed water availability and the concentrate offers additional reclaimed augmentation. While it is a waste stream from the membrane process, the concentrate becomes an alternative water source to offer expansion to the Utility's reclaimed water customers. To accomplish this, we are anticipating running the concentrate pipeline directly to the chlorine contact chamber for disinfection prior to storage and distribution. This will need to be manifolded to allow for TSS monitoring ahead of the chlorination of the combined effluent.

As the pilot testing completes we will implement the findings within the membrane skid design to optimize your capital and operational expense specific to your needs. These refinements will affect the last 20% of design efforts and will be completed in the last month of design. These refinements will likely be more along the lines of operational modifications to assist with the controls and instrumentation needed for efficient operation.

Permitting for the project will include water and wastewater permitting through the Florida Department of Environmental Protection and Lake County. The FDEP water permitting will need to begin with the piloting notification. FDEP typically requires a pilot program to be submitted for approval only if the finished water is being returned to the potable water supply or distribution. Given our anticipated discharge to the wastewater treatment facility, a permit is not necessary however, it is an opportunity to engage the regulators within the intended process. This FDEP notification process involves describing the volume of water that will be tested, how it will be drawn from the raw water system, as well as how and where the effluent will be discharged. As noted earlier, the withdrawal is expected to be a 2-inch tap on the raw water main from well 3. The water will be processed through the membrane skid with the data collected being analyzed for the full-scale process design. The finished water and concentrate will then be combined again and sent to the percolation ponds for disposal. This method will be the most efficient method to gain FDEP support and eliminate the potential for detrimental impacts to the wastewater treatment effluent water quality throughout the piloting period. The permitting for the water improvements will be a standard construction permit. We will need to show FDEP the piloting data that provides the operational efficiency and proposed blending ratios for the membrane skids. This will entail producing an engineering report summarizing the pilot as well as including details for the membrane skids, pumping and chemical systems associated with the treatment improvements, and how the equipment integration with the existing treatment system.

Additionally, the proposed configuration will be adding flow to the reclaimed system and will require a modification to the wastewater permit. This modification will need to show the proposed volume of the concentrate that will be discharged to the wastewater system and the anticipated water quality of the added supply. Due to the low levels of chlorides in the water we expect to be able to discharge the water directly to the chlorine contact chamber for disinfection. Through the piloting program we will identify the concentrate water quality and provide this data to FDEP within the permit modification. The most critical criterion will be the TSS levels in the concentrate. This will determine if we can discharge directly to the chlorine contact chamber or if we will need to go through the tertiary filters first. A brief engineering report



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will be prepared to describe how the concentrate will be delivered to the wastewater facility and the overall impacts to the treatment and disposal system. Sending the concentrate to the wastewater facility will impact the capacities of the impacted treatment units and the overall disposal system and will need to be carefully planned and permitted to accurately track the current and future needs of the wastewater facility.

The last piece of the permitting puzzle will be Lake County site plan permitting. This site is well set up for improvements to easily meet Lake County requirements. Through previous improvements we are well set up for landscaping and visual screening. The site is currently zoned for the improvements and there is plenty of space for any minor stormwater improvements necessary to account for any impermeable area requirements. We do not expect any major roadblocks in Lake County site plan permitting.

Due to the potential for the supplementation of the reclaimed water system, there may be potential grant monies available through the St. Johns River Water Management District. Being able to recover the concentrate stream for beneficial use can be categorized as an alternative water source. The wastewater facility currently has reached its reclaimed capacity in terms of connected users. This is limiting the connection of new residential reclaimed users for the utility. There are a significant number of potential reclaimed users that have the infrastructure in place and can be connected once we have additional reclaimed water supply. The concentrate stream will constitute a significant addition to the reclaimed water available for use. This effort will make the water plant a zero-discharge facility with all the water pumped out of the aquifer being beneficially used.

Project Management

The team we have assembled to put this together for this project is uniquely qualified to complete this project on schedule. As the lead designer for most of the improvements at both the water and wastewater facilities, Steve Romano has the site knowledge to hit the ground running. He is intimately familiar with the history of the site with regards to design and permitting. His relationships with you and your staff allow for a rapid start to the project and an ability to coordinate the design efforts with your staff that cannot be matched by any other team.

The addition of Lance Littrell to the team provides the technical expertise with vast membrane design and piloting experience to support your needs under this project. It is critical to properly manage the pilot process so the data obtained is effective in optimizing your long term operational expenses. Having completed six pilot studies and treatment plant designs specifically geared towards Stage 2 DBPR compliance over the last few years, Lance brings the intimate knowledge of this process and ability to deliver on your expectations for this project.

This will be a new facility with new treatment technologies for you and your operations staff. Lance's expertise will also be used as a resource to assist you and your staff to gain a better operational understanding of the effort that will be required to operate a membrane facility. As a membrane operator certification instructor for the Southeast Desalting Association, Florida Water Pollution Control and Operator Association, and other organizations, he has trained many of the membrane plant operators throughout Florida and the southeast region over the last decade. Supporting Lance, we have a team of our membrane design experts in South Florida who are some of the leaders in the membrane design industry.

The critical component for this project will be the membrane skid design within the proposed facility. Prior to joining a consulting firm, Lance led a membrane equipment supplier in the design, physical construction, startup and troubleshooting of all aspects around membrane treatment systems. Having this experience, Lance knows the ins and outs of the membrane system design, fabrication and delivery. He'll bring this expertise to you and your facility to ensure your system not only provides the process that fits best for Lake Groves, but also the first-hand practical experience of working with contractors to build the systems; operators to operate the systems; and utility managers to anticipate future costs for planning and budgeting purposes. These skills are often missed by traditional consultants as they are



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exposed to the treatment theory rather than the physical construction and hands-on operation of membrane facilities. The knowledge Lance brings will mitigate challenges for your operations staff as well as costly improvements in the far term.

The design depth the Kimley Horn team brings can provide the resources necessary to guarantee this design in completed on schedule while exceeding your expectations. As a national design firm, we can draw from resources across the State and Country to provide quality reviews from a fresh perspective to ensure your expectations are achieved. Our team is ready to immediately start on this important project for you and we thank you for this opportunity to be of service.



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Tab 4. Cost

LAKE GROVES ADVANCED WATER TREATMENT IMPROVEMENTS PROPOSED DESIGN AND PERMITTING COSTS

PROPOSED DESIGN AND PERMITTING COSTS

Task	Civil	Pilot Unit	Electrical	Arch/MEP	Total
Pilot Analysis	\$13,364.00	\$25,000.00			\$38,364.00
Site Improvements Design	\$79,395.00			\$25,000	\$104,395.00
Membrane Facility Design	\$81,073.00		\$68,000.00		\$149,073.00
Lake County Site Permitting	\$10,000.00				\$10,000.00
FDEP Water Permitting	\$10,000.00				\$10,000.00
FDEP Wastewater Permitting	\$10,000.00				\$10,000.00
Bidding	\$5,000.00		\$4,000.00		\$9,000.00
TOTALS	\$208,832.00	\$25,000.00	\$72,000.00	\$25,000.00	\$330,832.00

Statement of Qualifications

Professional Services for Utilities, Inc. of Florida

November 18, 2016

**“Lake Groves Advanced Water Treatment
Improvements”**





1117 East Robinson St.
Orlando, FL 32801
Phone: 407.425.0452
Fax: 407.648.1036

November 18, 2016

Utilities, Inc. of Florida
200 Weathersfield Avenue
Altamonte Springs, FL 32714
Attn: Bryan Gongre
E-Mail: bkgongre@uiwater.com

Re: Lake Groves Advanced Water Treatment Improvements

Dear Selection Committee Members:

CPH, Inc. (CPH) is excited about this opportunity to present our team and qualifications for the Lake Groves Advanced Water Treatment Improvements. CPH is a local Central Florida corporation, multi-disciplined engineering, architectural, and surveying firm with a well-qualified, local and available team to serve Utilities, Inc. of Florida (the Utility) on this project. Our success is the result of an outstanding team of professionals dedicated to providing a high level of engineering expertise and who are devoted to providing our clients with cost-effective and creative solutions. Our proposed team has worked together for many years, and has in-depth experience related to TOC removal and low cost ways to lower DBPs using RO membranes, force draft aeration with odor control, ozone oxidation with granular activated carbon (GAC) and ion-exchange (IEX) along with associated new chemical feed/storage equipment, and electrical upgrades.

CPH has extensive experience providing similar, reliable designs for multiple clients, including preliminary and final design, bidding, construction administration, and operational phase services. **CPH is familiar with the Lake Groves Site as we designed and permitted the forced draft aerator for hydrogen sulfide (H₂S) removal as well as Well No. 3.** Our experienced team has consistently delivered quality projects with cost effective designs, resulting in low capital and operational cost. We take very strong ownership and pride in our work.

We are committed to work with the Utility to establish a successful project and meet your FDEP consent order deadline of June 10, 2017. CPH has active experience working with consent orders for two (2) local utilities for DBP control and has currently completed design, pilot testing, funding requests and bidding services for two (2) separate 5-mgd processes to remove TOC for DBP control. In addition, CPH's engineers have electronic signature capabilities which allows for permits to be submitted electronically resulting in an expedited schedule.

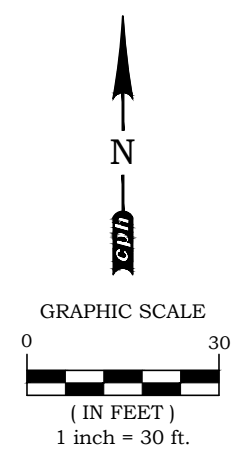
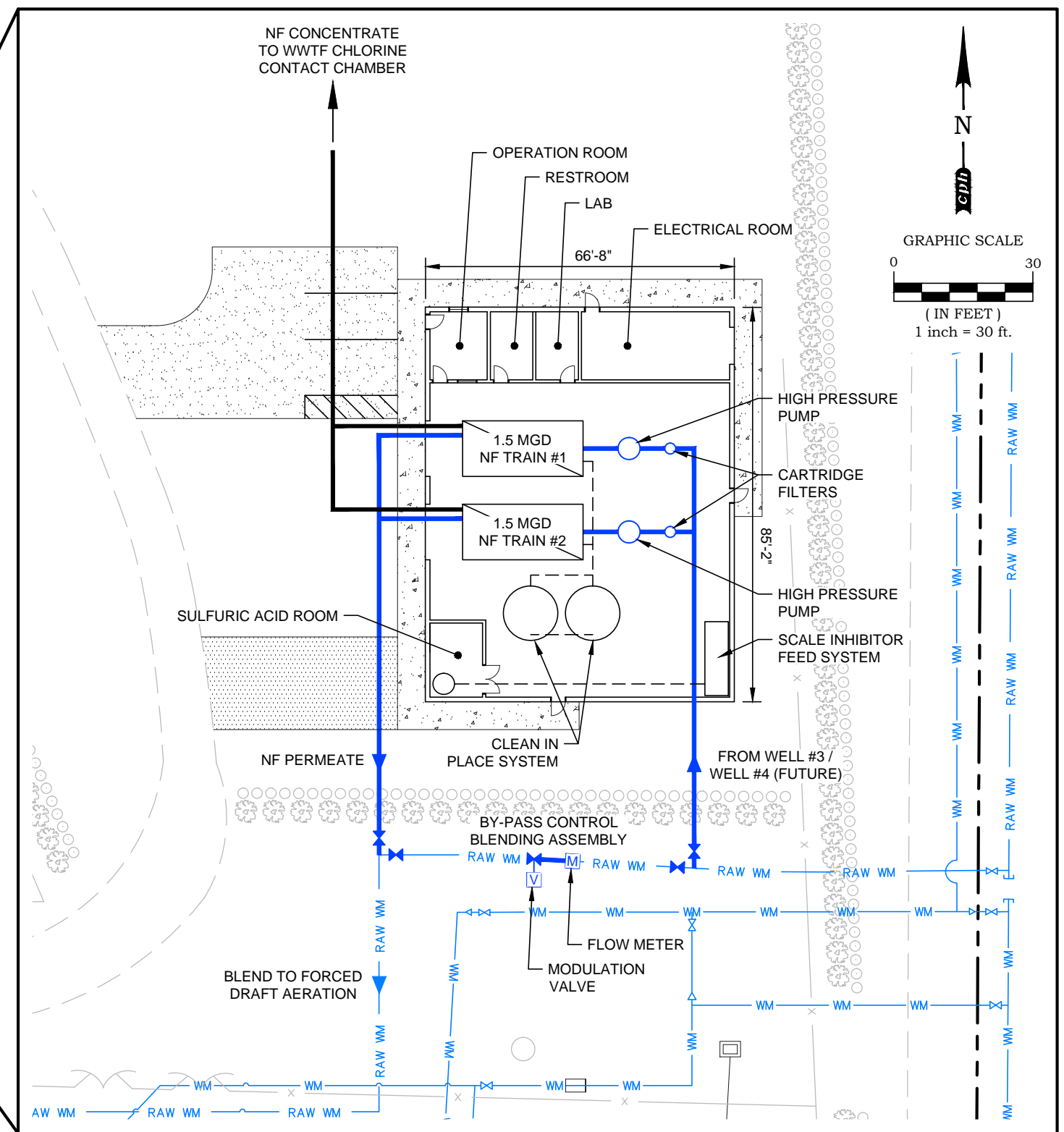
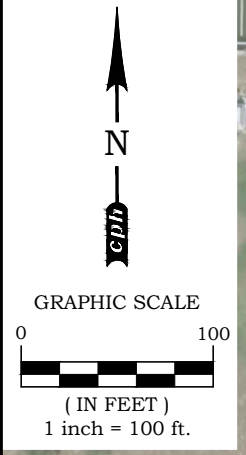
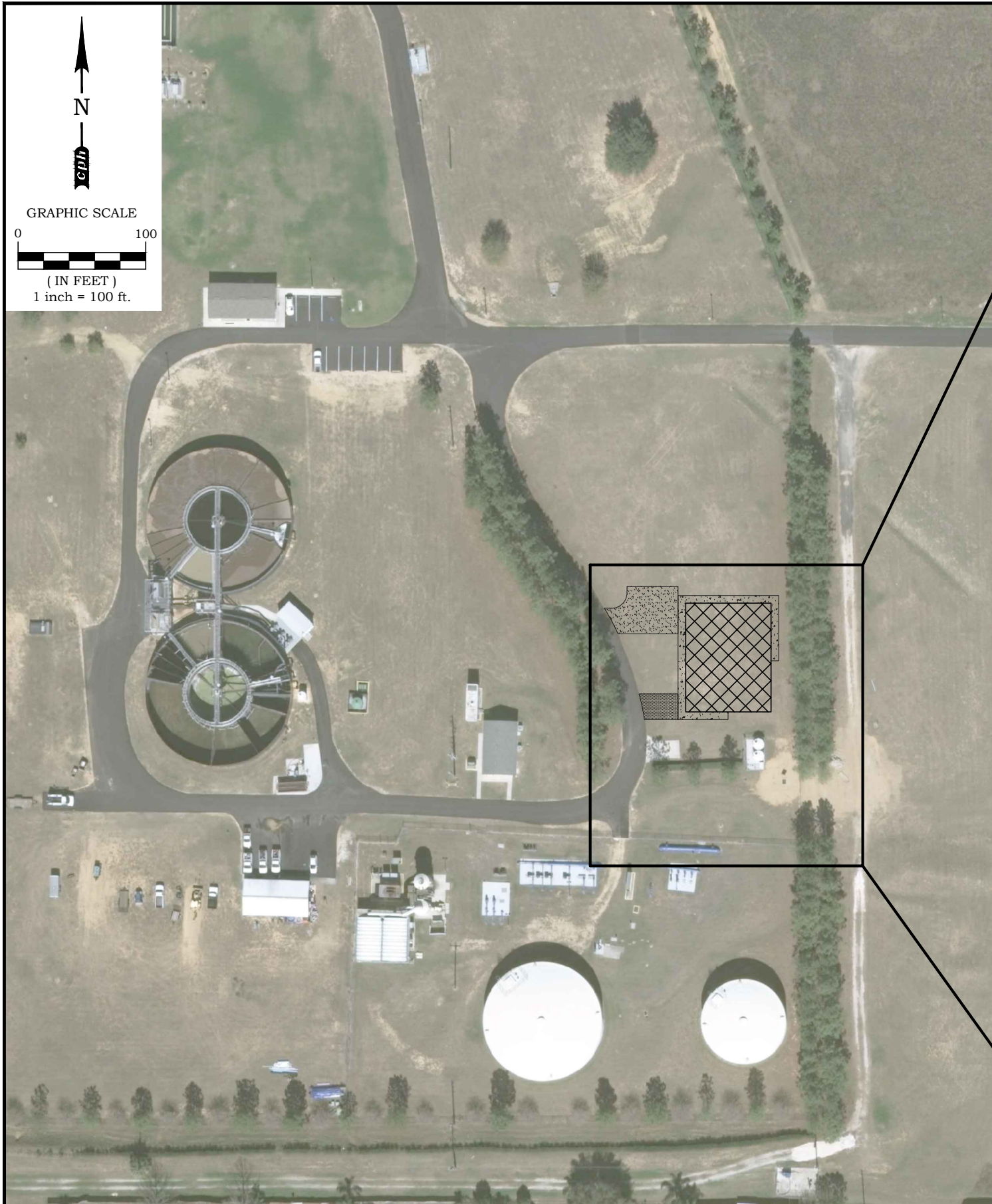
A 10% conceptual site layout and cost estimate will be developed during preliminary engineering for early discussion with the Utility. **Exhibit 1** on the next page is CPH's 10% conceptual site layout. Combined with our past experience at the Lake Groves Site, current experience with similar projects and our dedicated team, CPH is the best choice for this project. We will provide the Utility an expedited schedule, cost-efficient design and a dedicated/available team.

CPH will serve as the prime consultant on this project, along with the following subconsultants, Bailey Engineering Consultants, Inc. (Electrical/Instrumentation and Controls) and Terracon Consultants, Inc. (Geotechnical). We have a long history of working with our subconsultants for the successful completion of similar projects.

CPH proposes a \$352,606 engineering fee to design, pilot, permit and bid the nanofiltration advanced treatment system by June 20, 2017. We are eager and excited to begin this work as soon as our services are needed. Please do not hesitate to contact us should you need any additional information.

Sincerely,
CPH, Inc.

Scott A. Breitenstein, P.E./Vice President



A Full Service A & E Firm

Architects
Engineers
Environmental
Landscape Architects
Traffic/Transportation

M / E / P
Planners
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Surveyors

Offices In:

- Florida
- Puerto Rico
- Connecticut
- Maryland
- Texas

Date: 11/17/2016
Job No. Z6582
File: Lake Groves.dwg
Scale: As Shown
© 2016

Plan Prepared By:
CPH, Inc.
1117 E. Robinson St. - Orlando, Fl.
32801 Ph: 407.425.0452
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

3 MGD NANOFILTER PROCESS

LAKE GROVES ADVANCED WATER TREATMENT IMPROVEMENTS
UTILITIES INC OF FLORIDA

Exhibit No.
1

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1. Firm's Qualifications

2. Qualifications of Project Team, and Availability of Specialty Resources

3. Approach, Demonstrated Skill Set, and Innovative Ideas

4. Proposed Cost



FIRM QUALIFICATIONS

CPH offers a team of water treatment design professionals that have assisted numerous Florida governmental clients' plans for water plant upgrades. Our team provides a range of skills and history of success that will directly apply to the needs of Utilities, Inc. of Florida (The Utility) on the Lake Groves Advanced Water Treatment Improvements. CPH also provides on-staff specialists skilled in permitting, environmental, hydraulic modeling, civil/site design, structural engineering, mechanical and electrical engineering, land survey, construction administration, and construction engineering inspections (CEI)

We have carefully selected our team based upon the depth of their qualifications, reputation for response, recognition for quality work, relevant experience, and past performance. The advantages our team offers the Utility on this project include the following:

- ✓ **The CPH team proposed for the Lake Groves Advanced Water Treatment Improvements has executed water treatment plant projects totaling over 40 successful projects.** This has included projects that have required RO membrane, force draft aeration with odor control, Ozone oxidation GAC, IEX, new ground storage tanks, new high service pumping, new chemical feed/storage equipment, and electrical upgrades. We have experience on past projects which have addressed TOC removal and low cost ways to lower DBPs.
- ✓ **CPH has successfully provided design and construction services for upgrades at existing water treatment plants.** We understand the unique challenges of completing work in a timely manner to meet regulator schedules while maintaining WTP production. We understand the specific design needs for water treatment facilities of this nature and type.
- ✓ **Our proposed team has successfully designed and installed hundreds of pump upgrades for water, reclaimed water, and wastewater projects in Florida.** As a part of these upgrades, our team has performed detailed analysis of pump efficiencies and operations and maintenance costs analysis to successfully select the right pumps that serve our clients' needs for the long term success of their utility system. Many of these projects have included variable frequency drives (VFDs), and our Project team is very familiar with designing pumps with VFDs, including the design of a jockey pump for low demand periods. We understand the Utility's preferred manufacturers and preferred pump station layout.
- ✓ **Complementing our technical resume, the CPH team possesses unique experts recognized as water quality experts.** These individuals have optimized treatment systems, master planned for future treatment enhancements, developed source water feasibility evaluations to assess water resources and impacts related to ground water, surface water, and reclaimed water supplies. CPH has worked with many treatment processes including: Aeration and Odor Control, Ozone, Granular Activated Carbon, Ion-Exchange, Lime-Softening, Coagulation, Filtration, Reverse Osmosis, Disinfection, and Stabilization/Corrosion Control. We have a vast knowledge of water treatment experience in-house. In addition, as a Florida based firm we are local and familiar with Florida water.

CPH will serve as the Prime Design Engineering and is supported by the experience of Bailey Engineering Consultants, Inc. (Electrical/SCADA) and Terracon (Geotechnical). Our team members are local and routinely work together as a team on numerous projects throughout Florida.



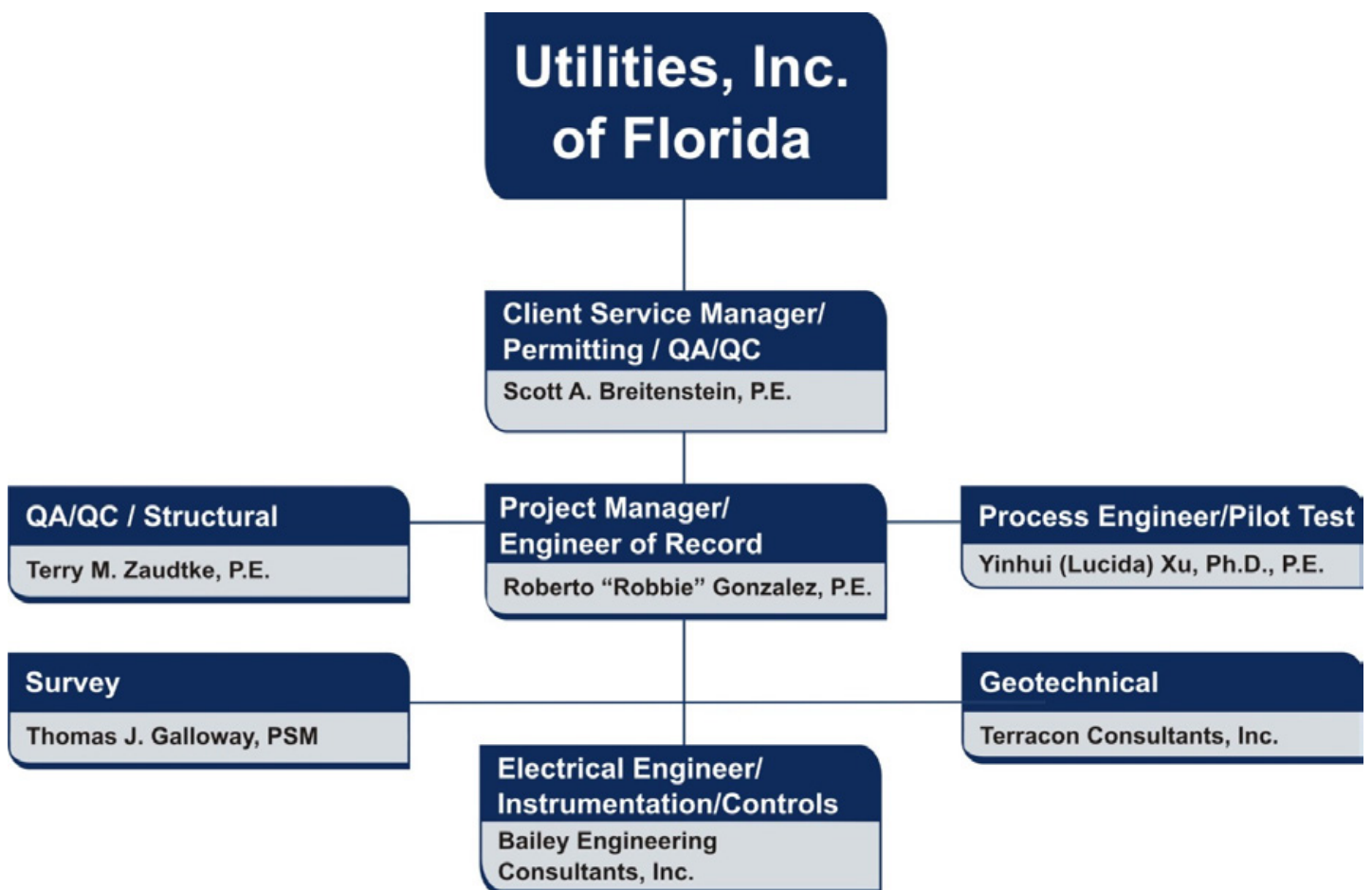
QUALIFICATIONS OF TEAM AND AVAILABILITY OF SPECIALTY RESOURCES

A. Organizational Chart

CPH works as an extension of the Utility's staff. Robbie Gonzalez, P.E. with CPH will serve as the Project Manager/Engineer of Record for this project to ensure that all design elements are delivered to the satisfaction of the Utility. Robbie has over 21 years of experience and his expertise consists of source water feasibility to assess water resources and impacts related to ground water, surface water, and reclaimed water supplies.

We are committed to completing a cost effective project on time and on budget that meets the Utility's standards. We have considered multiple criteria prior to assigning the key members listed below. This criteria includes:

- ✓ Experience with the Lake Groves site
- ✓ Local knowledge
- ✓ WTP rehabilitation experience
- ✓ Current availability and commitment to the Utility
- ✓ Experience with TOC removal for DBP control





Scott A. Breitenstein, P.E.

Client Service Manager/QA/QC

24 Total Years of Experience • 14 Years with CPH

Experience

Mr. Breitenstein serves the firm of CPH as Vice President/Associate and Project Manager/Engineer. He has over 24 years of experience in Engineering, including more than 7 years with the Florida Department of Environmental Protection (FDEP). At the FDEP, he developed an intuitive understanding of permitting/compliance issues related to water and wastewater treatment and infrastructure facilities. Mr. Breitenstein's work at CPH includes water and wastewater facility infrastructure design and permitting, master water/wastewater planning, CUP permitting, treatment facility retrofits, and WWTF operating permits.

Education

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

Professional Registrations, Certifications, Memberships

Professional Engineer – FL (No. 57402)

Key Strengths

- Water and Wastewater Treatment Plant Design
- FDEP Water and Wastewater Facilities Permitting
- CUP Permitting and Water Audits
- Reclaimed Water Systems
- Booster and Water Distribution Systems
- Collection/Transmission Systems and Lift Station Design
- Water and Waste Master Plans

Representative Projects

- Winter Springs WTP Improvements for DBP Control
- Haines City WTP Improvements for DBP Control
- Eustis Grand Island Shores Booster Station
- Eustis CR 44 Water Treatment Plant – Well #3
- Casselberry - Hunterfield Booster Station
- City of Eustis Master Water Plan
- Town of Oakland Water System Improvements Project
- City of Eustis Reclaimed Storage & Pumping Improvements
- City of Lake Alfred Water Facilities Plans
- City of Eustis Water Supply Plan
- Eustis Eastern WTP
- Oviedo WTP

Sample of Relevant Project Descriptions

Haines City Water Treatment Plant No. 1 & No. 2 Treatment System Upgrades

- Principal-in-Charge responsible for upgrading two (2) 5-mgd ground water treatment plants to control DBP formation. Upgrades include 3600-gpm anionic ion-exchange for TOC and H₂S removal; new chlorine, fluoride and corrosion inhibitor chemical feed systems; and SCADA instrumentation and control to balance treatment at both WTPs. Successfully obtained FDEP Drinking Water SRF loan with 85% principle forgiveness on \$6.2-Mil. Completion Date: In Progress.

Town of Oakland Water System Improvements Project

- The improvements were originally recommended in the master plan effort by the team previously performed for the Town
- The improvements include the following: 0.500 million gallon ground storage tank, 3,750 gallon/minute high service pumping (one (1) @750 gpm/two (2) @ 1,500 gpm), 1,415 linear feet of 8-inch replacement raw water main, 217 linear feet of 12-inch new raw water main (on-site piping), 170 linear feet of 16 -inch potable water main for discharge connection, and 350 square-foot electrical / pump building
- In addition, the team assisted the Town with obtaining a FDEP SRF loan for \$1.973 Million to install the water system improvements.

Winter Springs Water Treatment Plant No. Water Quality Improvements

- Principal-in-Charge responsible for upgrading 5-mgd ground water treatment plant to control DBP formation. Upgrades include 1,800-gpm anionic ion-exchange for TOC and H₂S removal; new chlorine, and corrosion inhibitor chemical feed systems; new generator with fuel storage and SCADA instrumentation and control to automate facility. Obtained inclusion on FDEP Drinking Water SRF 2016 Priority List for \$6.8-Mil. Completion Date: In Progress.

Eustis Eastern WTP

- Phase I - Included wells No. 1 and 2, a 15,000 gallons hydropneumatic tank, approximately 1,500 LF of 12-inch raw watermain, approximately 2,000 LF of 20-inch distribution system main, a sodium hypochlorite two pump skid and storage tank disinfection system, diesel generator, electrical and SCADA system improvements, and an electrical/pump operations building
- Phase II - Included expansion of the electrical/pumps operations building, additional site fencing, a 250,000 gallon ground storage tank, and two 1,500 gpm high service pumps



Roberto "Robbie" Gonzalez, P.E.

Project Manager/Engineer of Record

21 Total Years of Experience • 3 Years with CPH

Experience

Mr. Gonzalez has extensive water supply and water design experience. He is recognized as a water quality expert and has developed source water feasibility evaluations to assess water resources and impacts related to ground water, surface water, and reclaimed water supplies. He has worked with many treatment processes including: Nanofiltration; Reverse Osmosis; Aeration and Odor Control; Ozone; Granular Activated Carbon; Ion-Exchange; Lime-Softening; Coagulation; Filtration; Disinfection; and Stabilization/Corrosion Control.

Education

B.S. in Mechanical Engineering, University of Central Florida
B.S. in Environmental Engineering, University of Central Florida
M.S. in Environmental Sciences, University of Central Florida

Professional Registrations, Certifications, Memberships

Professional Engineer – FL (No. 56875)
Florida Section American Water Works Association
Water Environmental Federation

Representative Projects

- Winter Springs WTP Ion Exchange and Upgrades for DBP Control
- Haines City Stage 2 DBP Treatment Alternatives Evaluation, EOR for new Ion Exchange Treatment
- JEA Ponce De Leon WTP Pump Building & Reservoir Replacement, QC and Design
- Palm Coast WTP No. 2 ZLD
- Sanford Water Treatment Plant No. 2 – Disinfection By-Product Reduction Improvements
- Seminole County Ozone GAC and IEX Demonstration Testing for DBP Control for Regional Treatment Facilities
- Markham Regional WTP Well Blending Strategies for Stage 2 DBP Control

Key Strengths

- Engineer of Record and Sr. Project Manager on several advanced treatment Projects
- Desktop, Pilot Scale & Full Scale Treatment Evaluations
- Disinfection Effectiveness
- DBP Control Strategies
- Source Water Feasibility and Optimization
- Facility Characterization
- Hydraulic & Water Quality Distribution System Modeling
- Capital Improvement Program (CIP) Prioritization

Sample of Relevant Project Descriptions

Winter Springs Water Treatment Plant No. Water Quality Improvements

- Engineer-of-Record responsible for upgrading 5-mgd ground water treatment plant to control DBP formation. Upgrades include 1,800-gpm anionic ion-exchange for TOC and H₂S removal; new chlorine, and corrosion inhibitor chemical feed systems; new generator with fuel storage and SCADA instrumentation and control to automate facility. Obtained inclusion on FDEP Drinking Water SRF 2016 Priority List for \$6.8-Mil. Completion Date: In Progress.

Sanford Water Treatment Plant No. 2 – Disinfection By-Product Reduction Improvements

- Design and CEI of improvements at the existing WTP No. 2 to remove organics from the raw water. The improvements include the addition of ozone treatment to reduce hydrogen sulfide levels and six (6) new 40,000 lb. GAC cylinders to removal total organic carbon. The project also included a new chemical storage and pump building, on site piping, new operations building, SCADA/Controls, and demolition of existing cascading aerators.

Haines City Water Treatment Plant No. 1 & No. 2 Treatment System Upgrades

- Engineer-of-Record responsible for upgrading two (2) 5-mgd ground water treatment plants to control DBP formation. Upgrades include 3600-gpm anionic ion-exchange for TOC and H₂S removal; new chlorine, fluoride and corrosion inhibitor chemical feed systems; and SCADA instrumentation and control to balance treatment at both WTPs. Successfully obtained FDEP Drinking Water SRF loan with 85% principle forgiveness on \$6.2-Mil. Completion Date: In Progress.

Seminole County Ozone GAC and IEX Demonstration Testing for DBP Control for Regional Treatment Facilities

- Identified target ozone dosing and GAC column size to develop capital improvement costs to prioritize and schedule treatment plant enhancements.



Yinhui "Lucida" Xu, Ph.D., P.E.

Process Engineer

9 Total Years of Experience • 9 Years with CPH

Experience

Dr. Xu serves CPH in the capacity of Process Engineer. She has been with CPH since 2006. Her areas of expertise includes water chemistry, water and wastewater treatment plant design, water and wastewater permit applications, Water Supply Facilities Work Plan, water and Wastewater Capacity Analysis, and Consumptive Usage Permit application. Dr. Xu has recently served as Process Engineer and Project Manager for a number of reverse osmosis/nanofiltration, ozone, and granulated activated carbon projects.

Education

Ph.D. in Civil Engineering, Auburn University (GPA 4.0)
M. S. and B.S. in Environmental Engineering, Donghua University, Shanghai, China

Professional Registrations, Certifications, Memberships

Professional Engineer – FL (No. 72186), TX (No. 104864)
Water Environmental Federation
Florida Section American Water Works Association

Representative Projects

- City of Sanford's Water Treatment Plant No. 2 – Disinfection By-Product Reduction Improvements
- Palm Coast WTP No. 3- Low Pressure Reverse Osmosis
- Palm Coast WTP No. 2 ZLD- RO Concentrate Recycle
- Palm Coast WTP No. 1 Raw Water and WTP No. 3 Reverse Osmosis Concentrate Blending
- CUP Application from SJRWMD
- Water Supply Facilities Work Plan
- Sanford Surface Water CUP Compliance Report
- City of Palm Coast 6.0 MGD 2.0 MGD Phase I MBR WWTP No. 2
- Sanford South Water Resource Center
- City of Palm Coast - Master Water/Wastewater Planning/CIP

Sample of Relevant Project Descriptions

City of Sanford's Water Treatment Plant No. 2 – Disinfection By-Product Reduction Improvements

- Design and CEI of improvements at the existing WTP No. 2 to remove organics from the raw water. The improvements include the addition of ozone treatment to reduce hydrogen sulfide levels and six (6) new 40,000 lb. GAC cylinders to removal total organic carbon. The project also included a new chemical storage and pump building, on site piping, new operations building, SCADA/Controls, and demolition of existing cascading aerators.

Palm Coast WTP No. 2 ZLD- Reverse Osmosis Concentrate Disposal

- Design, permitting and construction of a 9.0 MGD capacity wellfield system, a concentrate discharge system to Intra-Coastal Waterway, and a new finished water distribution system.
- Project involved the study and development of a treatment process for recovery of concentrate as drinking water to eliminate discharge of concentrate to surface water

Palm Coast WTP No. 3- Low Pressure Reverse Osmosis

- New 3 MGD water treatment plant utilizing the LPRO treatment technology to treat the confined surficial aquifer water and or the upper Floridan aquifer water
- Plant was designed to facilitate expansion from 3 MGD to 9 MG

St. Lucie West Services District RO WTP Plant Odor Control System Rehabilitation/Renovation Study

- Analyzed the existing source water and treatment facilities to determine the volume of hydrogen sulfide gases to be removed and treated from the 3.4 MGD RO WTP
- Identify modifications and/or alternatives treatment options and associated costs.

Key Strengths

- Reverse Osmosis/Nanofiltration
- Water, Reclaimed Water, and Wastewater Treatment Systems Design
- Water Supply Facilities Work Plan

Technical Publications

- Yinhui Xu, Dongye Zhao, and Prabhakar Clement (2008). Journal of Environmental Engineering (ASCE), Vol. 134, No. 4, 238-246.
- Yinhui Xu and Dongye Zhao (2007). Water Research, Vol. 41, 2101-2108.
- Yinhui Xu and Dongye Zhao (2006). Industrial and Engineering Chemistry Research, Vol. 45, No. 22, 7380-7387.
- Yinhui Xu and Dongye Zhao (2006). Industrial and Engineering Chemistry Research. Vol. 45, No. 5, 1758-1765



Terry M. Zaudtke, P.E.

QA/QC / Structural

39 Total Years of Experience • 32 Years with CPH

Experience

Mr. Zaudtke serves the firm of CPH as Project Manager/Engineer for both public and private civil projects in his areas of expertise of Environmental and Civil Engineering. These projects include work in land development, municipal engineering, water and sewer facilities, drainage, waste treatment, and water supply. Mr. Zaudtke has served as the Project Manager and Engineer for the City of Casselberry, U.S. Navy, City of Orlando, City of Winter Springs, City of Lake Alfred, City of Eustis, Seminole County, Orange County, Key Largo Wastewater Treatment District, and Utilities, Inc.

Education

M.S. in Civil Engineering, University of Minnesota
B.S. in Civil Engineering, University of Minnesota

Professional Registrations, Certifications, Memberships

Professional Engineer – FL (No. 32928)

Key Strengths

- Design and Construction of water supply, treatment and distribution systems
- Concrete Structural Design
- Prefabricated Metal Building Design
- Master Water/Wastewater/Reclaimed Water Plans
- Major Wastewater Treatment Plants, Water Reclamation Facilities, Wastewater Collection Systems, and Reclaimed Water System
- Process Design/Analysis
- Advanced Treatment Standards
- Sludge Handling/Disposal Systems
- Stormwater Management

Representative Projects

- Ormond Beach WTP Filter Upgrades
- Manalapan Reverse Osmosis Plant Design/Build Project
- Winter Springs WTP Improvements for DBP Control
- Casselberry Water Treatment Plant
- Eustis Eastern WWTP
- Englewood Industrial Treatment Facility
- Northeran Collection Basin Force Main
- Southern Collection Basin Force Main
- Sunflower Trail Master Pump Station
- S.R. 50 Utility Relocations (Phase I of III)

Sample of Relevant Project Descriptions

Winter Springs Water Treatment Plant No. Water Quality Improvements

- Structural Engineer for 70 x 50 concrete containment area and prefabricated metal building for advanced treatment process
- Project includes upgrading 5-mgd ground water treatment plant to control DBP formation. Upgrades include 1,800-gpm anionic ion-exchange for TOC and H₂S removal; new chlorine, and corrosion inhibitor chemical feed systems; new generator with fuel storage and SCADA instrumentation and control to automate facility. Obtained inclusion on FDEP Drinking Water SRF 2016 Priority List for \$6.8-Mil. Completion Date: In Progress.

Eustis Eastern WTP

- Phase I - Included wells No. 1 and 2, a 15,000 gallons hydropneumatic tank, approximately 1,500 LF of 12-inch raw watermain, approximately 2,000 LF of 20-inch distribution system main, a sodium hypochlorite two pump skid and storage tank disinfection system, diesel generator, electrical and SCADA system improvements, and an electrical/pump operations building
- Phase II - Included expansion of the electrical/pumps operations building, additional site fencing, a 250,000 gallon ground storage tank, and two 1,500 gpm high service pumps

Casselberry Water Treatment Plant

- Provided design services to the City of Casselberry to modify the treatment process at three of their water treatment plants. The project involved the modification of the chlorination facilities for additional flexibility in the point of application of chlorine as well as the addition of ammonia for chloramination to reduce the formation of disinfection by-products. In order to monitor, and regulate the feed rates, the project included the addition of a SCADA control system.

Ormond Beach WTP Filter Upgrades

- The project was a Design/Build project for the replacement of the water treatment plant filters. The design capacity is 6 MGD.
- The filter system consists of four individual filters contained in interconnected concrete basins. The filters are mixed media of anthracite and sand each capable of 1.5 MGD AADF. The Leopold mixed media gravity filters have automatic backwash capability with air scour. Provided complete design based on the conceptual drawings within the Design/Build RFQ. The project included a "tremie" style wet well.

C. Sub-consultants

CPH will serve as the prime on this submittal with support on Electrical and Geotechnical services. CPH recognizes and understands that the Utility will not allow substitution of key project members during the Contract period without the agreement of the Utility. The information below details our sub-consultants.

BAILEY ENGINEERING CONSULTANTS, INC.

Services To Provide: Electrical/Instrumentation/Controls
 6965 Piazza Grande Ave,
 #311, Orlando, FL 32835
 Phone: 407.439.2300



CPH and Bailey have worked together for over 24 years and have completed over 250 projects as CPH’s electrical and instrumentation/controls sub. Bailey is a multi-disciplined consulting engineering firm specializing in electrical, instrumentation and SCADA system design. BEC provides consulting engineering services to the public and private sectors with preferential services for municipal and governmental clients. The following chart details BEC’s team members:

Name	Role	Years of Experience	Education/Licenses
Stephen E. Bailey, P.E.	Electrical Engineer	32 Years	B.S. in Electrical Engineering, Georgia Institute of Technology, 1983 Power and Control Theory Professional Engineer FL (No. 42461)
Jay Libo-on, E.I.	Electrical Engineer	22 Years	Bachelors of Science, Electrical Engineering Florida Atlantic University, 1999 Engineer Intern – Florida No. 1100006452

TERRACON

Services To Provide: Geotechnical
 1675 Lee Rd.
 Winter Park, FL 32789
 Phone: 407.740.6110



CPH has worked with Terracon on over 200 projects including countless water improvement projects. The team has specifically worked for the Utility at the Lake Groves site including the Booster Pump Station Project and the Percolation Pond Expansion. The team has worked together on numerous other Utility projects. The selection of CPH with our subconsultants provides for a cohesive team that can hit the ground running with no learning curve. The chart below details Terracon staff that has relevant utility experience.

Name	Role	Years of Experience	Education/Licenses
Jay Casper, P.E.	Geotechnical Engineer	38 Years	B.S. in Geology, University of Florida B.S. in Civil Engineering, University of Florida M.E. in Civil Engineering (Geotechnical Specialty) University of Florida, Registered Professional Engineer, Florida #36330
Shenna McMaster, P.E.	Geotechnical Engineer	19 Years	B.S., Civil Engineering, University of Central Florida, Registered Professional Engineer, Florida #57537



APPROACH, SKILL SET AND INNOVATIVE IDEAS

PROJECT UNDERSTANDING

We understand that Florida Department of Environmental Protection (FDEP) issued Utilities, Inc. of Florida (Utility) a consent order on September 12, 2016 to design and construct advanced water treatment improvements at Lake Groves (LUSI South WTP) to control disinfectant/disinfection by-products (D/DBPs). On October 12, 2016, a treatment analysis was conducted which recommended Nanofiltration (NF) as the cost effective strategy to remove total organic carbon (TOC) to control DBP formation.

The Utility has until June 10, 2017 to retain an engineering consultant to complete design/permitting of advanced treatment process improvements including a pilot test. Pilot will use LUIS South Well 3 to optimize membrane unit sizing and equipment configuration. **CPH water quality specialist (Robbie Gonzalez, P.E. in Orlando, FL) and our team of engineers will confidently deliver the best local talent in Central Florida to meet your FDEP consent order deadline of June 10, 2017.** Our confidence stems from our current and past experience to address DBP control, most notably in Haines City and Winter Springs.

Currently, CPH has active experience working with consent orders for two (2) local utilities for DBP control. We helped the City of Haines City avoid a consent order in 2015 by readjusting the flushing program and developing a well rotation schedule; whereas, the City of Winter Springs was issued a consent order in July 2016. Therefore, CPH understands the constraints of a consent order to design treatment for DBP control as we have currently completed design, pilot testing, funding requests and bidding services for two (2) separate 5-mgd processes to remove TOC for DBP control. Both projects have 365 day construction periods and we are providing construction administration and on-site inspection services with both processes set to be on-line by their respected consent order deadlines.

The goal for NF treatment will be to meet target levels of 60 µg/L for total trihalomethanes (TTHMs) and 40 µg/L for haloacetic acids (HAAs). The following items include the various design components anticipated as part of the **Lake Groves Advanced Water Treatment Improvements**.

- **Prepare a Preliminary Site Layout** – Develop 10% Design and Cost.
- **Conduct a Pilot Test to Develop Key Design Criteria** – Develop 60% Design and Cost.
- **Inquire/Submit Permit with Regulatory Agencies** – Pilot Test, PWS Construction, NF Concentrate Blending with Reclaimed Water, WWTP Modification, Staffing Requirements.
- **Prepare Construction Plans & Technical Specifications** - Develop 100% Design and Cost:
 - **Develop SCADA Improvements to optimize** NF process blending.
 - **Use LUSI's HMI Infrastructure** to provide cost effective treatment monitoring/control
- **Bidding** – Develop Bid documents
- **Construction Administration Services** - CPH is fully capable to provide if requested.





PROVEN APPROACH

CPH has a proven approach to assist the Utility in developing cost effective treatment strategies to reduce DBPs. **Scott A. Breitenstein, P.E.**, will serve as our Client Services Manager, as he has experience with permitting similar DBP control projects. **Roberto “Robbie” Gonzalez, P.E.**, will serve as our Project Manager as he has designed, pilot tested, permitted and bid advanced water treatment process improvements for several Central Florida utilities.

Every successful project initiates with open lines of communication. We will conduct an initial kick-off meeting and site visit to introduce our key project team members, identify roles of the Project, identify site constraints and define the Utility’s expectations.

PRELIMINARY ENGINEERING

[CPH is familiar with the Lake Groves Site as we designed and permitted the forced draft aerator for hydrogen sulfide \(H₂S\) removal as well as Well No. 3.](#) A 10% conceptual site layout and cost estimate will be developed during preliminary engineering for early discussion with the Utility (See **Exhibit 1 in the Cover Letter**).

It is important to coordinate with the LUSI and gather as much information as possible on existing data and project conditions including record drawings of the site, which allows for an efficient and cost effect design. Good project management starts with understanding your specific needs and requirements for the proposed project.

Also, CPH can conduct meaningful workshops with the local CPH project team technical leaders and the key Utility engineering, operations and maintenance staff. Decisions developed in the workshop would be captured in the preliminary design and serve as a basis of final design. In addition, Site Visits will be conducted along with the workshop to further improve understanding of construction challenges and impacts to the overall delivery schedule.

PILOT TESTING

[The goal of the pilot testing will be to optimize a raw water blend to meet disinfection by-product regulations.](#) Then the size of the NF trains could be slightly reduced and there would be a corresponding reduction in capital cost.

[CPH recommends a 1-month pilot to reduce pilot testing costs.](#) Typically, a 3 month pilot is prescribed. However, if the groundwater is stable and consistent, basic design data such as flux, hydraulic balance, operating pressures, scale inhibitor dosage, recovery and permeate and concentrate quality could be obtained after one month of stable operation. The only parameters which would likely not be established after only one month would be cartridge filter life and estimated NF cleaning frequency.

To further reduce pilot testing costs, a credit for the pilot rental cost could also be provided if the full-scale system were to be procured from the pilot supplier. In addition, the pilot membranes could be offered at no charge if the membrane supplier was pre-selected.



PRELIMINARY DESIGN REPORT (PDR)

To speed up the design/permitting process; the PDR with preliminary site layout will be used to submit the FDEP permit of construction. The PDR will contain recommendations for type of membranes and equipment selected, level of instrumentation and controls desired, incorporation of specialty items such as energy recovery devices, local construction considerations, and degree of redundancy required in equipment.

CPH will meet with the Utility to review the layout, discuss design constraints and offer solutions. **Robbie Gonzalez, P.E.**, has experience in providing DBP control strategies for several Central Florida utilities, including LUSI. Using LUSI input, key design criteria will be established for use in the design phase. Other improvements anticipated for design includes electrical and SCADA improvements. To save on cost, **Stephen Bailey, P.E.**, will serve as both the electrical and instrumentation design engineer for the project. Also, Mr. Bailey is familiar with the site as he provided engineering for the forced draft aerator improvements at the Lake Groves site.

Survey and geotechnical work will commence during preliminary design.

SURVEY

If needed, during preliminary engineering, CPH will work with our in-house surveyor to produce a high-definition laser 3D survey of the site to begin our preliminary layouts and design, **Thomas J. Galloway, P.S.M.** Our 3D laser equipment is state of the art in surveying technology, which allows for a more efficient, detailed, and cost efficient surveying product. The survey costs are similar to a traditional topographic survey at a much higher quality, that will allow the



Utility to use the software for their own future use for viewing of the site and simple measurements. In addition, if used for as-built information, and/or record drawings, the scanner can provide the Utility with precise construction information, including grade elevations, to allow for other project related studies, or follow-up design efforts.

GEOTECHNICAL INVESTIGATIONS

CPH will coordinate with our geotechnical subconsultant (Terracon) to provide geotechnical engineering and the soil analysis that will include recommendations for the foundation design in a design report. The most important items to define in the geotechnical evaluations is the estimated seasonal high groundwater elevation, the suitability of materials to support the concrete pad with the NF Trains and dictate the type of construction required.



The following table lists our understanding of the major improvement options that the Utility should consider as part of this project during the preliminary stages of design. We have provided a brief explanation of the expected goal for each improvement option.

Improvement Option	Expected Goal
Research Various NF Membrane and System Manufacturers	Cost savings , which will include total capital cost from NF supplier plus additional hidden costs associated with each manufacturer (Electrical costs, membrane types, effectiveness of TOC and hardness removal)
Research Various NF Building Configurations	Cost savings on membranes/energy/chlorine, space savings on the site, and reduced concentrate blending with reclaimed water at the WWTF, improved water quality. The Utility owns a large amount of land on the Lake Groves WTP site. However, elevation grade changes lend to certain areas being viable for construction without major grading changes. Various layouts and number of NF trains with future expansion in mind will be considered. Alternate layouts with different type of membranes and number of NF trains may lend itself to lower O&M or capital costs. Also, various configurations may provide reduced concentrate loadings to the WWTF reclaimed water blend.
Only treat the water you need to treat.	Cost savings (capital and O&M). Not all wells are created equal. Some will require less NF treatment to meet the LUSI's DBP goals. CPH will design bypass piping that diverts only a portion of well flow to the NF system based on well raw water quality. The goal is to reduce TOC in the water to achieve TTHM and HAA target levels.
Carefully select the right NF membranes	Cost Savings (O&M), Improved Water Quality, and Reduce Cleaning of Membranes. All NF membranes are not equal; CPH will evaluate the different NF membranes to optimize the NF advanced treatment system at the best cost for Utilities Inc. of Florida.
Consider hybrid membrane system which adds different NF membrane to the 1st and 2nd stage for TOC and hardness removal.	Increase Consumer Confidence, Better water quality and less damage to water fixtures. The LUSI has water hardness that is not regulated, but will improve the taste and quality of the water with regards to eliminating hard water scaling on fixtures and in pipelines.
Confirm Raw Water Wells have adequate pressure to pump through cartridge filters	Cost savings. Avoid cost of adding a booster pump. CPH will check existing well pump curves.
Consider NF concentrate blending with reclaimed water	Alternative Water Supply. Explore funding option for use of NF concentrate as alternative water supply. CPH will prepare an Engineering Report in effort reduce NF concentrate salt loadings to reclaimed water.
Repurpose chlorine injection locations	Save money on disinfectant and reduce TTHMs and HAAs. Lake Groves currently doses chlorine before the ground storage tanks for primary and secondary disinfection. Reduce chlorine to 0.5 mg/LK in GSTs then boost chlorine to 1.5 mg/L after GST storage to shift DBP formation.



PERMITTING

To meet the design schedule the PDR will be used as the basis for conducting permit inquiries and permit submittals. Early permit involvement begins in Preliminary Engineering which helps streamline and define WTP design criteria. Permitting involvement requires effective communication and contractor expertise during design and construction to limit schedule delays. Early permitting involvement limits impacts to construction delays and explains how impacts can be minimized to the greatest extent possible in the design. A permit determination inquiry will be used to define regulatory requirements which must be included in design. We are familiar with regulatory rule requirements and our permitting approach is streamlined to keep the project on schedule. We have identified the regulatory agencies that would most likely impact the Project.

- **FDEP Water** - CPH has recent experience with FDEP consent order process for DBP control. We have experience in preparing permit application for advance water treatment process. We will prepare the permit for Construction of Public Water Supply (PWS) Components. CPH has numerous past projects experience obtaining PWS clearances and partial clearances in a timely manner to keep construction on schedule.
- **FDEP Staffing Reduction** - CPH has been successful in obtaining staffing reduction for advanced treatment processes by inclusion of automatic control systems in the design.
- **FDEP Wastewater Blending NF Concentrate with Reclaimed Water** – The NF process produces concentrate that requires disposal. Concentrate will be disposed of on-site at the WWTF and will require an Engineering Report for blending NF Concentrate with reclaimed water. **Robbie Gonzalez, P.E.** has experience with the Engineering Report as he prepared the first one in the state.
- **FDEP Wastewater WWTF Minor Modification** - CPH has experience in obtaining WWTF permit modifications. We will conduct a permit inquiry to determine permit needs and address appropriately.
- **St. Johns River Water Management District** – CPH does not believe an Environmental Resource Permit (ERP) will be required as the site is site will be less than 1 acre. CPH has prepared and submitted ERP applications, and has worked with SJRWMD on stormwater management projects. We have experience and knowledge to provide the necessary documents and information to obtain an ERP permit in an expeditious manner.
- **Lake County Building Department** - CPH is familiar with Lake County planning and building codes and associated ordinances. We recently facilitated a permit through the Lake County Building Department on the work at the Eustis WTP, so we understand the Building Department requirements. We are confident that we will be able to work with City Staff to ensure permitting requirements are met.
- **Electronic Permitting** - Permits will be submitted electronically to expedite the schedule. CPH Engineers have electronic signature capabilities which allows for a faster permitting process.

FINAL DESIGN

To fast track and reduce cost the design CPH will move from 60% to 100% as final design. CPH has experience with designing advanced WTP upgrades while maintaining treatment production. Final design proceeds faster with a detailed PDR and permit inquiry which define key design criteria. Design phase requires an individual who is detail-oriented. This individual needs to look at the project and visualize how the project can be constructed. **Robbie Gonzalez, P.E.**, has recently completed preliminary and final design for two (2) separate 5-MGD advanced treatment projects for DBP control in Central Florida.



BIDDING SERVICES

CPH will coordinate transparent bidding activities with the Utility. CPH will prepare the bid package for distribution by the Utility. We will attend the pre-bid meeting, answer addendum questions, review bid submittals and references, prepare bid tabulation and provide an Engineer's letter of recommendation to the Utility.

CONSTRUCTION ADMINISTRATION

Construction administration (CA) services may also be added to our scope of work if requested by the Utility.

Typical construction engineering services include the following:

- Coordinate a pre-construction meeting between the Utility and successful bidder
- Prepare conformed documents for construction
- Review shop drawings, test reports, pay requests, schedules
- Prepare change orders and respond to Request for Information
- Attend monthly progress meetings
- Conduct site visits to observe work progress and certify construction activities. Alternatively, CPH has staff to perform construction engineering, and inspection (CEI) services during construction to observe construction quality and can provide similar services to the Utility if requested.
- Conduct substantial and final completion inspections
- Observe start-up of facilities
- Prepare required O&M manuals (eManuals can also be created)
- Prepare Certification of Completion of Construction or Letter Request for Clearance for the Project.
- Prepare Record Drawings
- Help the Utility close-out the Project

PROJECT MANAGEMENT PLAN & QUALITY CONTROL

CPH prides ourselves on developing and managing projects from conception to completion. We have the resources and in-house capabilities to perform Engineering Design Services to provide design strategies to control DBP formation for compliance. CPH will use our proven project approach to expedite the Project identified in the RFP.

With the Utility and CPH working as a team, the Project will be managed to adhere to a reasonable schedule, and be cost conscience, recognizing constraints of the budget. **Terry Zaudtke, P.E.**, will provide constructability QA/QC reviews prior to each submittal. **Jay Morris, P.E.**, will provide overall project QA/QC prior to each submittal to the Utility.



PROPOSED COST

4

TASK	DESCRIPTION	
1 Project Setup & 10% Conceptual Design Layout		
1.1	Prepare Project Work Plan & Schedule	
1.2	Conduct Kickoff Meeting with Utilities Inc. of Florida to Confirm Design Requirements	
1.3	Prepare & Distribute Kickoff Meeting Minutes	
1.4	Prepare 10% Conceptual Design (Preliminary Building Layout, Site Layout, and Yard Piping)	
1.5	Prepare Class 3: 10% Conceptual Cost Estimate	
1.6	Attend 10% Conceptual Design Meeting & Provide Meeting Summary	
Subtotal		\$ 24,138
2 Design Criteria & Schematic Design (60%)		
2.1	Conduct Site Visit & Evaluate Existing Information	
2.2	Prepare Preliminary Design Report (PDR) - Process Description, Site Layout & Key Design Parameters	
2.3	Develop Process Flow Diagrams, Hydraulic Grade Lines, Electrical Single-Line Diagrams, and Process & Instrumentation Diagrams (P&IDs)	
2.4	Prepare 60% Plan Views, Major Elevations, Structural, Electrical, I&C Drawings	
2.5	Prepare List of Specifications	
2.6	Conduct Surveying Services	
2.7	Conduct Geotechnical Investigations & Prepare Geotech Recommendations for Construction	
2.8	Prepare Class 2 60%: Preliminary Cost Estimate	
2.9	Conduct 60% QA/QC	
2.10	Conduct Review Meeting with Utilities Inc. of Florida to Discuss Comments	
Subtotal		\$ 108,625
3 Pilot Testing (Up to One (1) Month with 15 gpm NF Skid)		
3.1	Mobilize Pilot Unit & Set-Up Field Lab	
3.2	Conduct Pilot Test (Includes One (1) Month NF Skid Rental + Lab Costs)	
3.3	Prepare Pilot Test Results & Design Recommendations	
Subtotal		\$ 38,415
4 Permitting Assistance		
4.1	Prepare FDEP Public Water Supply Construction Permit	
4.2	Inquire FDEP Staffing Reduction	
4.3	Prepare FDEP WWTF Modification Permit	
4.4	Prepare FDEP NF Concentrate Blending with Reclaimed Water Engineering Report	
4.5	Inquire FDEP for NF Pilot Testing	
4.6	Inquire SJRWMD ERP Modification	
4.7	Prepare Lake County Building Department Permit	
Subtotal		\$ 33,491
5 Project Design Development Stage (100% Submittal)		
5.1	Prepare 100% Engineering Drawings	
5.2	Prepare 100% Technical Specifications	
5.3	Finalize P&IDs	
5.4	Finalize Electrical Schematics	
5.5	Finalize Design Calculations	
5.6	Prepare Class 1: 100% Opinion of Probable Construction Cost	
5.7	Conduct 100% QA/QC	
5.8	Conduct 100% Review Meeting with Utilities Inc. of Florida to Discuss Comments	
Subtotal		\$ 138,754
6 Bid Phase Services		
6.1	Provide Bid Set Engineering Drawings & Technical Specifications	
6.2	Update Bid Form & Assist Utilities Inc. of Florida with Front Ends	
6.3	Attend Pre-Bid Meeting	
6.4	Assist with Contractor Questions & Issue Addenda for Clarifications	
6.5	Prepare Engineer's Recommendation of Successful Bidder	
Subtotal		\$ 9,183
TOTAL		\$352,606

Subconsultant Costs





November 15th, 2016

Mr. Jay Morris, P.E.
CPH, Inc.
1117 East Robinson Street
Orlando, FL 32801

Re: Lake Groves Water Treatment Plant Scope of Services
Utilities Inc of Florida

Dear Mr. Morris:

We are pleased to submit our revised proposal for final electrical and control system engineering services for the above project. The following serves to provide an overview of the engineering services Bailey Engineering Consultants, Inc. (BEC) intends to furnish on the above referenced project to CPH, Inc. (CPH). This letter contract represents an overview of the work and provides the agreed upon lump sum fee amount. Your signature on this agreement will serve as your letter of intent. We require an executed purchase order as the official notice to proceed. Our services shall include completed drawings for the work, covering all phases of our design in an AutoCAD 2013 format including project specifications and opinion of probable costs for the work performed under this agreement. Our design work scope shall include the following as outlined below:

Preliminary Data Collection and Analysis Phase:

Task 1.5 – Electrical Investigation:

1. Confirm existing electrical system configuration and layout. As built the existing electrical system. Provide conceptual layout of RO electrical equipment.
2. Coordinate Duke Power transformer location and sizing.
3. Design new generator to support new membrane process. Provide conceptual layouts for removing both and providing a new generator in sound attenuated enclosure.
4. Identify all existing PLC product models on site and discuss upgrade possibilities to provide standard PLC design.
5. Identify/confirm the recommended network topology. Discuss alternatives.

6. Quantify computer network hardware and discuss adequacy to accommodate the requirements of this project.
7. Investigate the site electrical and controls arrangement, power supply, feeds, conduits and arrangement. Discuss possible construction impacts to the existing system components.

Design Phase:

Task 1.8 – Permitting:

1. BEC shall provide signed and sealed sets for the building department and assist in answering any comments raised by the permitting agency.

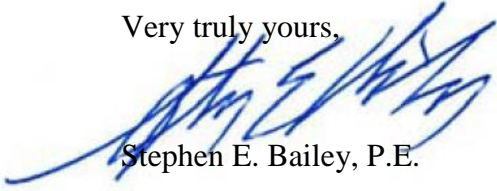
Task 1.9 – Design – Facility/Treatment:

Provide electrical and instrumentation improvements for the associated new process equipment. This shall include:

1. Electrical Engineering Design Services as follows:
 - a. Design new electrical service.
 - b. Coordination with Duke Power to provide required power supply modifications.
 - c. Power to Membrane Skid 1 and 2 electrical devices including all miscellaneous chemical and other power System requirements.
 - d. Emergency generator for the new on site WTP electrical service. A Tier 2 generator is being provided for “emergency” duty.
 - e. Electrical design for degasification tower and blower design.
2. Instrumentation Engineering Services as follows:
 - a. Integration of Skid 1 and 2 PLC systems into existing facility HMI system.
 - b. Design of new M340 PLC and remote I/O. No upgrades to existing facility PLCs are included in the design proposal herein.
 - c. Enhancement to existing SCADAPack RTU system to incorporate additional RTUs at the deep well and remote wellfield.
3. Deliverables:
 - a. 60% Preliminary drawings, specifications and opinion of costs for Owner/Client review – One (1) hard copy and one (1) set of PDF files.
 - b. 100% construction drawings, specifications and opinion of costs for Owner/Client review – One (1) hard copy and one (1) set of PDF files.
 - c. All reproduction shall be completed by others.

Our fee for this work shall \$72,000.00 and shall be billed at monthly intervals.

Very truly yours,



Stephen E. Bailey, P.E.

ACCEPTED _____ DATE _____

CPH-16-024D



HARN R/O SYSTEMS, INC. – 310 CENTER COURT – VENICE, FLORIDA 34285
(P) 941-488-9671 - (F) 941-488-9400

SAMPLE

Harn R/O Systems, Inc. is pleased to provide the following proposal to provide equipment and services for a reverse osmosis (RO) pilot system as follows:

- Provide one (1) nominal 20,000 GPD pilot study reverse osmosis system, configured in a 2:2:1:1 array of 4” diameter three and four element vessels. This unit is designed to replicate a full-scale system and can achieve 85% recovery without the use of concentrate recycle. The unit is self-contained, but it must be installed in a sheltered, weather-protected location, or can be provided in a container per the optional cost below. The R/O unit will be leased for a minimum period of three (3) months. R/O membranes, delivery, installation, start-up and training services are not included in the lease price. Harn R/O Systems can provide installation and startup supervision and operator training for an additional fee, per below. Installation services would consist of connecting the on-skid feed, permeate and concentrate pipes to the yard/well piping installed to the pilot unit by others. The pilot system site should be located and prepared and all electrical and water services brought to the site prior to scheduling delivery and installation of the pilot system. Electrical service shall be provided to the pilot unit site and the owner shall provide a licensed electrician to make the power connection to the pilot unit.

Lease one (1) R/O Pilot Unit for the sum of \$6,500 per month
 Provide container for installation of Pilot \$2,500 per month
Local operation staff and data monitoring is not included

- Provide twenty-one (21) Reverse Osmosis membrane elements (estimated) \$6,500 (plus freight)
- Provide installation, training and start-up assistance (estimated five days)..... \$750 per day plus applicable living and travel expenses billed at cost. Should additional field service be required it will be billed at the above rate.
- R/O expendables, i.e. cartridge filters, scale inhibitor, SDI kit and pads \$500 per month est.
- Provide pilot cleaning system \$850 per month
- Provide membrane autopsy of up to two elements at the conclusion of the pilot study. Autopsy requirements are highly dependent on the performance of the pilot and may vary..... \$4,000.00
- Freight estimate, will be billed at cost \$TBD
- Pilot Report, if desired..... \$3,000

SERVICE PROVIDED BY OTHERS:

Installation of yard/well piping, other equipment, and applicable permits; unloading and setting of container, connection of electrical service to R/O system; pre-treatment and post-treatment chemicals; laboratory analyses and operating personnel to collect data, mix chemicals and operate system.

We Propose hereby to furnish material and labor – complete in accordance with above specifications, for the sum of:

See above, permits, bonds, and taxes not included, payment due Net 30

Payment terms will be 5% with contract execution. Monthly rental fee is billed at the beginning of each month. Delivery cost, Start-up labor, membrane cost, and misc. expenses are billed with the first month’s rent. Autopsies and return freight are billed after completion.

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen’s Compensation Insurance.

Authorized
 Signature **Julia Nemeth-Harn**

NOTE: This proposal may be withdrawn by us if not accepted within 30 days.

Acceptance of Proposal - The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____

Signature: _____

Date of Acceptance: _____



December 5, 2016

Bryan Gongre
Utilities Inc., of Florida
200 Weathersfield Ave.
Altamonte Springs, FL 32714

Re: Lake Groves AWT Improvements
LUSI Service Area

Dear Bryan:

Kimley-Horn and Associates, Inc. ("Kimley-Horn" or "Consultant") is pleased to submit this letter agreement (the "Agreement") to Utilities Inc., of Florida ("Client") for providing services related to the design membrane improvements to the Lake Groves Water Treatment Facility as described in the RFQ.

Project Understanding

The scope of this work is as defined in the DBP Treatment Analysis and will be completed as more fully described in the submittal to the request for qualifications.

Scope of Services

Kimley-Horn will provide the services specifically set forth below.

Task 1 – Pilot Testing

Pilot testing will be conducted to determine the most effective membranes for this facility. Additionally, the piloting period will be used as a pre-selection of membrane skid manufacturers to aid in the design and construction of the facility. Additionally, the concentrate stream will be tested to confirm the ability to send the concentrate to the wastewater facility as a reclaimed water supplement. This process is expected to take up to the 90 days of testing. The pilot will be conducted as a side-stream flow from well 3 and will be discharged to the RIBs at the WWTF. The costs for the pilot testing and analysis are included in this scope.

Task 2 – Design Services

The design services for this project include the membrane skid design, site improvements, membrane building, site piping, concentrate piping to the wastewater facility, electrical instrumentation and controls, geotechnical investigations for the membrane building, and any associated chemical and pumping systems to make the system fully functional. The design will include periodic reviews with your staff to ensure that these services get completed within the six month period required.

Task 3 – Permitting Services

Permitting activities for this project include the following permits: FDEP Water construction permit, FDEP Wastewater permit revision (to accept concentrate), and Lake County Site Planning. Permitting services are anticipated to be started near the end of design in a manner to facilitate the scheduled bidding and construction of the facility. Permitting fees are not currently included in this scope, but can

be provided at the Owner's authorization.

Services Not Included

Any other services, including but not limited to the following, are not included in this Agreement: Construction services, surveying, environmental.

Schedule

We will provide our services as expeditiously as practicable with the goal of meeting the following schedule:

Task	Start	Finish
Contract Authorization	12/5/2016	
Kickoff and Preliminary Design	12/15/2016	
Pilot Testing	1/15/2017	4/15/2017
Pilot Analysis	4/16/2017	4/30/2017
Membrane Facility Design	12/15/2016	5/31/2017
Concentrate/Wastewater Improvements Design	3/1/2017	5/31/2017
Lake County Site Permitting	5/1/2017	8/31/2017
FDEP Water Permitting	6/1/2017	7/31/2017
FDEP Wastewater Permitting	6/1/2017	7/31/2017
Bidding	6/1/2017	7/1/2017
Construction	8/1/2017	7/31/2018

Fee and Expenses

Kimley-Horn will perform these services for the total lump sum fee below. Individual task amounts are informational only. All permitting, application, and similar project fees will be paid directly by the Client.

Total Lump Sum Fee \$330,832.00

Lump sum fees will be invoiced monthly based upon the overall percentage of services performed. Payment will be due within 25 days of your receipt of the invoice and should include the invoice number and Kimley-Horn project number.

Closure

In addition to the matters set forth herein, our Agreement shall include and be subject to, and only to, the attached Standard Provisions, which are incorporated by reference. As used in the Standard Provisions, "Consultant" shall refer to Kimley-Horn and Associates, Inc., and "Client" shall refer to Utilities Inc. of Florida.

Kimley-Horn, in an effort to expedite invoices and reduce paper waste, submits invoices via email in an Adobe PDF format. We can also provide a paper copy via regular mail if requested. include the invoice number and Kimley-Horn project number with all payments.

We appreciate the opportunity to provide these services to you. Please contact me if you have any questions.

Very truly yours,
KIMLEY-HORN AND ASSOCIATES, INC.



By: Steve Romano, PE
Associate



Authorized by: Wayne White, P.E.
Title: Associate

UTILITIES INC., OF FLORIDA

 12/8/2016
Bryan Gongre, Regional Manager

Attachment – Standard Provisions

KIMLEY-HORN AND ASSOCIATES, INC.

STANDARD PROVISIONS

(1) **Consultant's Scope of Services and Additional Services.** The Consultant's undertaking to perform professional services extends only to the services specifically described in this Agreement. However, if requested by the Client and agreed to by the Consultant, the Consultant will perform Additional Services, which shall be governed by these provisions. Unless otherwise agreed to in writing, the Client shall pay the Consultant for any Additional Services an amount based upon the Consultant's then-current hourly rates plus an amount to cover certain direct expenses including telecommunications, in-house reproduction, postage, supplies, project related computer time, and local mileage. Other direct expenses will be billed at 1.15 times cost.

(2) **Client's Responsibilities.** In addition to other responsibilities described herein or imposed by law, the Client shall:

- (a) Designate in writing a person to act as its representative with respect to this Agreement, such person having complete authority to transmit instructions, receive information, and make or interpret the Client's decisions.
- (b) Provide all information and criteria as to the Client's requirements, objectives, and expectations for the project including all numerical criteria that are to be met and all standards of development, design, or construction.
- (c) Provide to the Consultant all previous studies, plans, or other documents pertaining to the project and all new data reasonably necessary in the Consultant's opinion, such as site survey and engineering data, environmental impact assessments or statements, upon all of which the Consultant may rely.
- (d) Arrange for access to the site and other private or public property as required for the Consultant to provide its services.
- (e) Review all documents or oral reports presented by the Consultant and render in writing decisions pertaining thereto within a reasonable time so as not to delay the services of the Consultant.
- (f) Furnish approvals and permits from governmental authorities having jurisdiction over the project and approvals and consents from other parties as may be necessary for completion of the Consultant's services.
- (g) Cause to be provided such independent accounting, legal, insurance, cost estimating and overall feasibility services as the Client may require.
- (h) Give prompt written notice to the Consultant whenever the Client becomes aware of any development that affects the scope, timing, or payment of the Consultant's services or any defect or noncompliance in any aspect of the project.
- (i) Bear all costs incidental to the responsibilities of the Client.

(3) **Period of Services.** Unless otherwise stated herein, the Consultant will begin work timely after receipt of a properly executed copy of this Agreement and any required retainer amount. This Agreement is made in anticipation of conditions permitting continuous and orderly progress through completion of the services. Times for performance shall be extended as necessary for delays or suspensions due to circumstances that the Consultant does not control. If such delay or suspension extends for more than six months (cumulatively), Consultant's compensation shall be renegotiated.

(4) **Method of Payment.** Compensation shall be paid to the Consultant in accordance with the following provisions:

- (a) Invoices will be submitted periodically for services performed and expenses incurred. Payment of each invoice will be due within 25 days of receipt. The Client shall also pay any applicable sales tax. All retainers will be held by the Consultant for the duration of the project and applied against the final invoice. Interest will be added to accounts not paid within 25 days at the maximum rate allowed by law. If the Client fails to make any payment due to the Consultant under this or any other agreement within 30 days after the Consultant's transmittal of its invoice, the Consultant may, after giving notice to the Client, suspend services and withhold deliverables until all amounts due are paid in full and may commence proceedings, including filing liens, to secure its right to payment under this Agreement.
- (b) If the Client relies on payment or proceeds from a third party to pay Consultant and Client does not pay Consultant's invoice within 60 days of receipt, Consultant may communicate directly with such third party to secure payment.
- (c) If the Client objects to an invoice, it must advise the Consultant in writing giving its reasons within 14 days of receipt of the invoice or the Client's objections will be waived, and the invoice shall conclusively be deemed due and owing. If the Client objects to only a portion of the invoice, payment for all other portions remains due within 25 days of receipt.
- (d) The Client agrees that the payment to the Consultant is not subject to any contingency or condition. The Consultant may negotiate payment of any check tendered by the Client, even if the words "in full satisfaction" or words intended to have similar effect appear on the check without such negotiation being an accord and satisfaction of any disputed debt and without prejudicing any right of the Consultant to collect additional amounts from the Client.

(5) **Use of Documents.** All documents, including but not limited to drawings, specifications, reports, and data or programs stored electronically, prepared by the Consultant are related exclusively to the services described in this Agreement, and may be used only if the Client has satisfied all of its obligations under this Agreement. They are not intended or represented to be suitable for use, partial use or reuse by the Client or others on extensions of this project or on any other project. Any modifications made by the Client to any of the Consultant's documents, or any use, partial use or reuse of the documents without written authorization or adaptation by the Consultant will be at the Client's sole risk and without liability to the Consultant, and the Client shall indemnify, defend and hold the Consultant harmless from

all claims, damages, losses and expenses, including but not limited to attorneys' fees, resulting therefrom. The Consultant's electronic files and source code developed in the development of application code remain the property of the Consultant and shall be provided to the Client only if expressly provided for in this Agreement. Any electronic files not containing an electronic seal are provided only for the convenience of the Client, and use of them is at the Client's sole risk. In the case of any defects in the electronic files or any discrepancies between them and the hardcopy of the documents prepared by the Consultant, the hardcopy shall govern. Because data stored in electronic media format can deteriorate or be modified without the Consultant's authorization, the Client has 60 days to perform acceptance tests, after which it shall be deemed to have accepted the data.

(6) **Opinions of Cost.** Because the Consultant does not control the cost of labor, materials, equipment or services furnished by others, methods of determining prices, or competitive bidding or market conditions, any opinions rendered as to costs, including but not limited to opinions as to the costs of construction and materials, shall be made on the basis of its experience and represent its judgment as an experienced and qualified professional, familiar with the industry. The Consultant cannot and does not guarantee that proposals, bids or actual costs will not vary from its opinions of cost. If the Client wishes greater assurance as to the amount of any cost, it shall employ an independent cost estimator. Consultant's services required to bring costs within any limitation established by the Client will be paid for as Additional Services.

(7) **Termination.** The obligation to provide further services under this Agreement may be terminated by either party upon seven days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party, or upon thirty days' written notice for the convenience of the terminating party. If any change occurs in the ownership of the Client, the Consultant shall have the right to immediately terminate this Agreement. In the event of any termination, the Consultant shall be paid for all services rendered and expenses incurred to the effective date of termination, and other reasonable expenses incurred by the Consultant as a result of such termination. If the Consultant's compensation is a fixed fee, the amount payable for services will be a proportional amount of the total fee based on the ratio of the amount of the services performed, as reasonably determined by the Consultant, to the total amount of services which were to have been performed.

(8) **Insurance.** The Consultant carries Workers' Compensation insurance, professional liability insurance in the amount of \$2,000,000 per claim, and general liability insurance. If the Client directs the Consultant to obtain increased insurance coverage, the Consultant will take out such additional insurance, if obtainable, at the Client's expense.

(9) **Standard of Care.** The standard of care applicable to Consultant's services will be the degree of care and skill ordinarily exercised by consultants performing the same or similar services in the same locality at the time the services are provided. No warranty, express or implied, is made or intended by the Consultant's undertaking herein or its performance of services, and it is agreed that the Consultant is not a fiduciary with respect to the Client.

(10) **LIMITATION OF LIABILITY.** In recognition of the relative risks and benefits of the Project to the Client and the Consultant, the risks have been allocated such that the Client agrees, to the fullest extent of the law, and notwithstanding any other provisions of this Agreement or the existence of applicable insurance coverage, that the total liability, in the aggregate, of the Consultant and the Consultant's officers, directors, employees, agents, and subconsultants to the Client or to anyone claiming by, through or under the Client, for any and all claims, losses, costs or damages whatsoever arising out of, resulting from or in any way related to the services under this Agreement from any cause or causes, including but not limited to, the negligence, professional errors or omissions, strict liability or breach of contract or any warranty, express or implied, of the Consultant or the Consultant's officers, directors, employees, agents, and subconsultants, shall not exceed twice the total compensation received by the Consultant under this Agreement or \$50,000, whichever is greater. Higher limits of liability may be negotiated for additional fee. Under no circumstances shall the Consultant be liable for extra costs or other consequences due to changed conditions, or for costs related to the failure of contractors to perform work in accordance with the plans and specifications. This Section 10 is intended solely to limit the remedies available to the Client or those claiming by or through the Client, and nothing in this Section 10 shall require the Client to indemnify the Consultant.

(11) **Mutual Waiver of Consequential Damages.** In no event shall either party be liable to the other for any consequential, incidental, punitive, or indirect damages including but not limited to loss of income or loss of profits.

(12) **Certifications.** The Consultant shall not be required to execute certifications or third-party reliance letters that are inaccurate, that relate to facts of which the Consultant does not have actual knowledge, or that would cause the Consultant to violate applicable rules of professional responsibility.

(13) **Dispute Resolution.** All claims by the Client arising out of this Agreement or its breach shall be submitted first to mediation in accordance with the Construction Industry Mediation Procedures of the American Arbitration Association as a condition precedent to litigation.

(14) **Hazardous Substances and Conditions.** In no event shall Consultant be a custodian, transporter, handler,

arranger, contractor, or remediator with respect to hazardous substances and conditions. Consultant's services will be limited to professional analysis, recommendations, and reporting, including, when agreed to, plans and specifications for isolation, removal, or remediation. The Consultant shall notify the Client of hazardous substances or conditions not contemplated in the scope of services of which the Consultant actually becomes aware. Upon such notice by the Consultant, the Consultant may stop affected portions of its services until the hazardous substance or condition is eliminated.

(15) Construction Phase Services.

(a) If the Consultant's services include the preparation of documents to be used for construction and the Consultant is not retained to make periodic site visits, the Client assumes all responsibility for interpretation of the documents and for construction observation, and the Client waives any claims against the Consultant in any way connected thereto.

(b) If the Consultant provides construction phase services, the Consultant shall have no responsibility for any contractor's means, methods, techniques, equipment choice and usage, sequence, schedule, safety programs, or safety practices, nor shall Consultant have any authority or responsibility to stop or direct the work of any contractor. The Consultant's visits will be for the purpose of endeavoring to provide the Client a greater degree of confidence that the completed work of its contractors will generally conform to the construction documents prepared by the Consultant. Consultant neither guarantees the performance of contractors, nor assumes responsibility for any contractor's failure to perform its work in accordance with the contract documents.

(c) The Consultant is not responsible for any duties assigned to the design professional in the construction contract that are not expressly provided for in this Agreement. The Client agrees that each contract with any contractor shall state that the contractor shall be solely responsible for job site safety and for its means and methods; that the contractor shall indemnify the Client and the Consultant for all claims and liability arising out of job site accidents; and that the Client and the Consultant shall be made additional insureds under the contractor's general liability insurance policy.

(16) No Third-Party Beneficiaries; Assignment and Subcontracting. This Agreement gives no rights or benefits to anyone other than the Client and the Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole benefit of the Client and the Consultant. The Client shall not assign or transfer any rights under or interest in this Agreement, or any claim arising out of the performance of services by Consultant, without the written consent of the Consultant. The Consultant reserves the right to augment its staff with subconsultants as it deems appropriate due to project logistics, schedules, or market conditions. If the Consultant exercises this right, the Consultant will maintain the agreed-upon billing rates for services identified in the contract, regardless of whether the services are provided by in-house employees, contract employees, or independent subconsultants.

(17) Confidentiality. The Client consents to the use and dissemination by the Consultant of photographs of the project and to the use by the Consultant of facts, data and information obtained by the Consultant in the performance of its services. If, however, any facts, data or information are specifically identified in writing by the Client as confidential, the Consultant shall use reasonable care to maintain the confidentiality of that material.

(18) Miscellaneous Provisions. This Agreement is to be governed by the law of the State of Florida. This Agreement contains the entire and fully integrated agreement between the parties and supersedes all prior and contemporaneous negotiations, representations, agreements or understandings, whether written or oral. Except as provided in Section 1, this Agreement can be supplemented or amended only by a written document executed by both parties. Provided, however, that any conflicting or additional terms on any purchase order issued by the Client shall be void and are hereby expressly rejected by the Consultant. Any provision in this Agreement that is unenforceable shall be ineffective to the extent of such unenforceability without invalidating the remaining provisions. The non-enforcement of any provision by either party shall not constitute a waiver of that provision.

(19) PURSUANT TO FS 558.0035, EMPLOYEES OF CONSULTANT MAY NOT BE HELD INDIVIDUALLY LIABLE FOR DAMAGES RESULTING FROM NEGLIGENCE UNDER THIS AGREEMENT.



December 5, 2016

Bryan Gongre
Utilities Inc., of Florida
200 Weathersfield Ave.
Altamonte Springs, FL 32714

Re: Lake Groves AWT Improvements
LUSI Service Area

Dear Bryan:

Kimley-Horn and Associates, Inc. ("Kimley-Horn" or "Consultant") is pleased to submit this letter agreement (the "Agreement") to Utilities Inc., of Florida ("Client") for providing services related to the design membrane improvements to the Lake Groves Water Treatment Facility as described in the RFQ.

Project Understanding

The scope of this work is as defined in the DBP Treatment Analysis and will be completed as more fully described in the submittal to the request for qualifications.

Scope of Services

Kimley-Horn will provide the services specifically set forth below.

Task 1 – Pilot Testing

Pilot testing will be conducted to determine the most effective membranes for this facility. Additionally, the piloting period will be used as a pre-selection of membrane skid manufacturers to aid in the design and construction of the facility. Additionally, the concentrate stream will be tested to confirm the ability to send the concentrate to the wastewater facility as a reclaimed water supplement. This process is expected to take up to the 90 days of testing. The pilot will be conducted as a side-stream flow from well 3 and will be discharged to the RIBs at the WWTF. The costs for the pilot testing and analysis are included in this scope.

Task 2 – Design Services

The design services for this project include the membrane skid design, site improvements, membrane building, site piping, concentrate piping to the wastewater facility, electrical instrumentation and controls, geotechnical investigations for the membrane building, and any associated chemical and pumping systems to make the system fully functional. The design will include periodic reviews with your staff to ensure that these services get completed within the six month period required.

Task 3 – Permitting Services

Permitting activities for this project include the following permits: FDEP Water construction permit, FDEP Wastewater permit revision (to accept concentrate), and Lake County Site Planning. Permitting services are anticipated to be started near the end of design in a manner to facilitate the scheduled bidding and construction of the facility. Permitting fees are not currently included in this scope, but can

be provided at the Owner's authorization.

Services Not Included

Any other services, including but not limited to the following, are not included in this Agreement: Construction services, surveying, environmental.

Schedule

We will provide our services as expeditiously as practicable with the goal of meeting the following schedule:

Task	Start	Finish
Contract Authorization	12/5/2016	
Kickoff and Preliminary Design	12/15/2016	
Pilot Testing	1/15/2017	4/15/2017
Pilot Analysis	4/16/2017	4/30/2017
Membrane Facility Design	12/15/2016	5/31/2017
Concentrate/Wastewater Improvements Design	3/1/2017	5/31/2017
Lake County Site Permitting	5/1/2017	8/31/2017
FDEP Water Permitting	6/1/2017	7/31/2017
FDEP Wastewater Permitting	6/1/2017	7/31/2017
Bidding	6/1/2017	7/1/2017
Construction	8/1/2017	7/31/2018

Fee and Expenses

Kimley-Horn will perform these services for the total lump sum fee below. Individual task amounts are informational only. All permitting, application, and similar project fees will be paid directly by the Client.

Total Lump Sum Fee \$330,832.00

Lump sum fees will be invoiced monthly based upon the overall percentage of services performed. Payment will be due within 25 days of your receipt of the invoice and should include the invoice number and Kimley-Horn project number.

Closure

In addition to the matters set forth herein, our Agreement shall include and be subject to, and only to, the attached Standard Provisions, which are incorporated by reference. As used in the Standard Provisions, "Consultant" shall refer to Kimley-Horn and Associates, Inc., and "Client" shall refer to Utilities Inc. of Florida.

Kimley-Horn, in an effort to expedite invoices and reduce paper waste, submits invoices via email in an Adobe PDF format. We can also provide a paper copy via regular mail if requested. include the invoice number and Kimley-Horn project number with all payments.

We appreciate the opportunity to provide these services to you. Please contact me if you have any questions.

Very truly yours,
KIMLEY-HORN AND ASSOCIATES, INC.



By: Steve Romano, PE
Associate



Authorized by: Wayne White, P.E.
Title: Associate

UTILITIES INC., OF FLORIDA

 12/8/2016
Bryan Gongre, Regional Manager

Attachment – Standard Provisions

KIMLEY-HORN AND ASSOCIATES, INC.

STANDARD PROVISIONS

(1) **Consultant's Scope of Services and Additional Services.** The Consultant's undertaking to perform professional services extends only to the services specifically described in this Agreement. However, if requested by the Client and agreed to by the Consultant, the Consultant will perform Additional Services, which shall be governed by these provisions. Unless otherwise agreed to in writing, the Client shall pay the Consultant for any Additional Services an amount based upon the Consultant's then-current hourly rates plus an amount to cover certain direct expenses including telecommunications, in-house reproduction, postage, supplies, project related computer time, and local mileage. Other direct expenses will be billed at 1.15 times cost.

(2) **Client's Responsibilities.** In addition to other responsibilities described herein or imposed by law, the Client shall:

- (a) Designate in writing a person to act as its representative with respect to this Agreement, such person having complete authority to transmit instructions, receive information, and make or interpret the Client's decisions.
- (b) Provide all information and criteria as to the Client's requirements, objectives, and expectations for the project including all numerical criteria that are to be met and all standards of development, design, or construction.
- (c) Provide to the Consultant all previous studies, plans, or other documents pertaining to the project and all new data reasonably necessary in the Consultant's opinion, such as site survey and engineering data, environmental impact assessments or statements, upon all of which the Consultant may rely.
- (d) Arrange for access to the site and other private or public property as required for the Consultant to provide its services.
- (e) Review all documents or oral reports presented by the Consultant and render in writing decisions pertaining thereto within a reasonable time so as not to delay the services of the Consultant.
- (f) Furnish approvals and permits from governmental authorities having jurisdiction over the project and approvals and consents from other parties as may be necessary for completion of the Consultant's services.
- (g) Cause to be provided such independent accounting, legal, insurance, cost estimating and overall feasibility services as the Client may require.
- (h) Give prompt written notice to the Consultant whenever the Client becomes aware of any development that affects the scope, timing, or payment of the Consultant's services or any defect or noncompliance in any aspect of the project.
- (i) Bear all costs incidental to the responsibilities of the Client.

(3) **Period of Services.** Unless otherwise stated herein, the Consultant will begin work timely after receipt of a properly executed copy of this Agreement and any required retainer amount. This Agreement is made in anticipation of conditions permitting continuous and orderly progress through completion of the services. Times for performance shall be extended as necessary for delays or suspensions due to circumstances that the Consultant does not control. If such delay or suspension extends for more than six months (cumulatively), Consultant's compensation shall be renegotiated.

(4) **Method of Payment.** Compensation shall be paid to the Consultant in accordance with the following provisions:

- (a) Invoices will be submitted periodically for services performed and expenses incurred. Payment of each invoice will be due within 25 days of receipt. The Client shall also pay any applicable sales tax. All retainers will be held by the Consultant for the duration of the project and applied against the final invoice. Interest will be added to accounts not paid within 25 days at the maximum rate allowed by law. If the Client fails to make any payment due to the Consultant under this or any other agreement within 30 days after the Consultant's transmittal of its invoice, the Consultant may, after giving notice to the Client, suspend services and withhold deliverables until all amounts due are paid in full and may commence proceedings, including filing liens, to secure its right to payment under this Agreement.
- (b) If the Client relies on payment or proceeds from a third party to pay Consultant and Client does not pay Consultant's invoice within 60 days of receipt, Consultant may communicate directly with such third party to secure payment.
- (c) If the Client objects to an invoice, it must advise the Consultant in writing giving its reasons within 14 days of receipt of the invoice or the Client's objections will be waived, and the invoice shall conclusively be deemed due and owing. If the Client objects to only a portion of the invoice, payment for all other portions remains due within 25 days of receipt.
- (d) The Client agrees that the payment to the Consultant is not subject to any contingency or condition. The Consultant may negotiate payment of any check tendered by the Client, even if the words "in full satisfaction" or words intended to have similar effect appear on the check without such negotiation being an accord and satisfaction of any disputed debt and without prejudicing any right of the Consultant to collect additional amounts from the Client.

(5) **Use of Documents.** All documents, including but not limited to drawings, specifications, reports, and data or programs stored electronically, prepared by the Consultant are related exclusively to the services described in this Agreement, and may be used only if the Client has satisfied all of its obligations under this Agreement. They are not intended or represented to be suitable for use, partial use or reuse by the Client or others on extensions of this project or on any other project. Any modifications made by the Client to any of the Consultant's documents, or any use, partial use or reuse of the documents without written authorization or adaptation by the Consultant will be at the Client's sole risk and without liability to the Consultant, and the Client shall indemnify, defend and hold the Consultant harmless from

all claims, damages, losses and expenses, including but not limited to attorneys' fees, resulting therefrom. The Consultant's electronic files and source code developed in the development of application code remain the property of the Consultant and shall be provided to the Client only if expressly provided for in this Agreement. Any electronic files not containing an electronic seal are provided only for the convenience of the Client, and use of them is at the Client's sole risk. In the case of any defects in the electronic files or any discrepancies between them and the hardcopy of the documents prepared by the Consultant, the hardcopy shall govern. Because data stored in electronic media format can deteriorate or be modified without the Consultant's authorization, the Client has 60 days to perform acceptance tests, after which it shall be deemed to have accepted the data.

(6) **Opinions of Cost.** Because the Consultant does not control the cost of labor, materials, equipment or services furnished by others, methods of determining prices, or competitive bidding or market conditions, any opinions rendered as to costs, including but not limited to opinions as to the costs of construction and materials, shall be made on the basis of its experience and represent its judgment as an experienced and qualified professional, familiar with the industry. The Consultant cannot and does not guarantee that proposals, bids or actual costs will not vary from its opinions of cost. If the Client wishes greater assurance as to the amount of any cost, it shall employ an independent cost estimator. Consultant's services required to bring costs within any limitation established by the Client will be paid for as Additional Services.

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(10) **LIMITATION OF LIABILITY.** In recognition of the relative risks and benefits of the Project to the Client and the Consultant, the risks have been allocated such that the Client agrees, to the fullest extent of the law, and notwithstanding any other provisions of this Agreement or the existence of applicable insurance coverage, that the total liability, in the aggregate, of the Consultant and the Consultant's officers, directors, employees, agents, and subconsultants to the Client or to anyone claiming by, through or under the Client, for any and all claims, losses, costs or damages whatsoever arising out of, resulting from or in any way related to the services under this Agreement from any cause or causes, including but not limited to, the negligence, professional errors or omissions, strict liability or breach of contract or any warranty, express or implied, of the Consultant or the Consultant's officers, directors, employees, agents, and subconsultants, shall not exceed twice the total compensation received by the Consultant under this Agreement or \$50,000, whichever is greater. Higher limits of liability may be negotiated for additional fee. Under no circumstances shall the Consultant be liable for extra costs or other consequences due to changed conditions, or for costs related to the failure of contractors to perform work in accordance with the plans and specifications. This Section 10 is intended solely to limit the remedies available to the Client or those claiming by or through the Client, and nothing in this Section 10 shall require the Client to indemnify the Consultant.

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(a) If the Consultant's services include the preparation of documents to be used for construction and the Consultant is not retained to make periodic site visits, the Client assumes all responsibility for interpretation of the documents and for construction observation, and the Client waives any claims against the Consultant in any way connected thereto.

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(c) The Consultant is not responsible for any duties assigned to the design professional in the construction contract that are not expressly provided for in this Agreement. The Client agrees that each contract with any contractor shall state that the contractor shall be solely responsible for job site safety and for its means and methods; that the contractor shall indemnify the Client and the Consultant for all claims and liability arising out of job site accidents; and that the Client and the Consultant shall be made additional insureds under the contractor's general liability insurance policy.

(16) No Third-Party Beneficiaries; Assignment and Subcontracting. This Agreement gives no rights or benefits to anyone other than the Client and the Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole benefit of the Client and the Consultant. The Client shall not assign or transfer any rights under or interest in this Agreement, or any claim arising out of the performance of services by Consultant, without the written consent of the Consultant. The Consultant reserves the right to augment its staff with subconsultants as it deems appropriate due to project logistics, schedules, or market conditions. If the Consultant exercises this right, the Consultant will maintain the agreed-upon billing rates for services identified in the contract, regardless of whether the services are provided by in-house employees, contract employees, or independent subconsultants.

(17) Confidentiality. The Client consents to the use and dissemination by the Consultant of photographs of the project and to the use by the Consultant of facts, data and information obtained by the Consultant in the performance of its services. If, however, any facts, data or information are specifically identified in writing by the Client as confidential, the Consultant shall use reasonable care to maintain the confidentiality of that material.

(18) Miscellaneous Provisions. This Agreement is to be governed by the law of the State of Florida. This Agreement contains the entire and fully integrated agreement between the parties and supersedes all prior and contemporaneous negotiations, representations, agreements or understandings, whether written or oral. Except as provided in Section 1, this Agreement can be supplemented or amended only by a written document executed by both parties. Provided, however, that any conflicting or additional terms on any purchase order issued by the Client shall be void and are hereby expressly rejected by the Consultant. Any provision in this Agreement that is unenforceable shall be ineffective to the extent of such unenforceability without invalidating the remaining provisions. The non-enforcement of any provision by either party shall not constitute a waiver of that provision.

(19) PURSUANT TO FS 558.0035, EMPLOYEES OF CONSULTANT MAY NOT BE HELD INDIVIDUALLY LIABLE FOR DAMAGES RESULTING FROM NEGLIGENCE UNDER THIS AGREEMENT.



UTILITIES, INC. OF FLORIDA AND AFFILIATE
ATTN: MR. TONY WIERZBICKI
200 WEATHERSFIELD AVENUE
ALTAMONTE SPRINGS, FL 32714

Invoice No: 8701458
Invoice Date: Dec 31, 2016
Invoice Amount: \$16,541.60
Project No: 149685009.1
Project Name: LAKE GROVES AWT
Project Manager: ROMANO, STEVE
Client Reference:

3008141
PO# 232178
Recpt# 246258

Please send payments to:
KIMLEY-HORN AND ASSOCIATES, INC.
P.O. BOX 932520
ATLANTA, GA 31193-2520

For Services Rendered through Dec 31, 2016

Federal Tax Id: 56-0885615

LUMP SUM

Description	Contract Value	% Complete	Amount Earned to Date	Previous Amount Billed	Current Amount Due
TOTAL LUMP SUM FEE	330,832.00	5.00%	16,541.60	0.00	16,541.60
Subtotal	330,832.00	5.00%	16,541.60	0.00	16,541.60
Total LUMP SUM					16,541.60

DESCRIPTION OF SERVICES PERFORMED:
PILOT COORDINATION AND SITE REVIEW
PRELIMINARY SITE DESIGN
ADDITIONAL WATER QUALITY SAMPLE TESTS

Total Invoice: \$16,541.60



3008141
PO# 232178
Repl# 248410

UTILITIES, INC. OF FLORIDA AND AFFILIATE
ATTN: MR. TONY WIERZBICKI
200 WEATHERSFIELD AVENUE
ALTAMONTE SPRINGS, FL 32714

Invoice No: 8919036
Invoice Date: Jan 31, 2017
Invoice Amount: \$102,557.92
Project No: 149685009.1
Project Name: LAKE GROVES AWT
Project Manager: ROMANO, STEVE
Client Reference:

Please send payments to:
KIMLEY-HORN AND ASSOCIATES, INC.
P.O. BOX 932520
ATLANTA, GA 31193-2520

For Services Rendered through Jan 31, 2017

Federal Tax Id: 56-0885615

LUMP SUM

Description	Contract Value	% Complete	Amount Earned to Date	Previous Amount Billed	Current Amount Due
TOTAL LUMP SUM FEE	330,832.00	36.00%	119,099.52	16,541.60	102,557.92
Subtotal	330,832.00	36.00%	119,099.52	16,541.60	102,557.92
Total LUMP SUM					102,557.92

Total Invoice: \$102,557.92