Statement of Qualifications
Professional Services for the Utilities Commission, City of New Smyrna Beach
RSQ No. 10-18
“Continuing Professional Services - Civil Engineer”
April 5, 2018

Utilities Commission, City of New Smyrna Beach (UCNSB)
Attn: Maureen Crossman, CPPB, Materials Manager
200 Canal Street
New Smyrna Beach, Florida 32168

Re: Continuing Professional Services – Civil Engineer
RSQ No. 10-18

Dear Selection Committee Members:

CPH, Inc. (CPH) is pleased to respond to Utilities Commission, City of New Smyrna Beach (UCNSB) Request for Statement of Qualifications for the Continuing Professional Services contract for Civil Engineer. It would be our pleasure to continue providing services to the UCNSB. We are certain that CPH exceeds the UCNSB’s qualification requirements for the following reasons:

Capabilities: CPH is a multi-disciplinary engineering firm recognized for providing superior quality services to our clients in an efficient and effective manner. CPH has been providing consulting services for over 36 years; we believe that this experience is imperative to successfully execute the wide variety of projects that this contract may bestow. With a nearby office in DeLand and support staff members in Sanford and Palm Coast; CPH is eager and ready to provide services for any project under this contract.

Experience: CPH has assembled a vastly diverse and highly qualified team with experience in all discipline areas requested by the UCNSB. Our team is capable of providing services for every project that will emerge under this contract. CPH realizes and understands that each project has its individual characteristics and will need specialized expertise. Therefore, CPH has assembled a team composed of engineers, environmental scientists, contractors, architects, surveyors, and administrative staff; which will bring a significant assortment of knowledge to the contract. CPH has experience in areas such as: Water, Wastewater, Reuse Water, piping, distribution, transmission, pumping, storage and treatment, miscellaneous site planning, water and wastewater plant upgrades

Experience Working Under Continuing Contracts: We have worked with many of our clients for 30 years. These long-term relationships have afforded us many opportunities to meet our clients’ needs and perform municipal engineering services. Our team has extensive experience in working under continuing contracts and is available for planned projects as well as unplanned emergencies. We are currently serving the municipalities of Eustis, Cape Coral, Casselberry, Clermont, Daytona Beach, DeBary, DeLand, Dunedin, Edgewater, Ft. Myers, Haines City, Homestead, Lake Alfred, Lake Mary, Lake Worth, Longwood, Lakeland, Lauderhill, Marco Island, Mount Dora, North Port, Ocoee, Orange City, Orlando, Ormond Beach, Oviedo, Palm Coast, Palmetto CRA, Port Orange, Punta Gorda, Sanford, Tampa, Tavares, Titusville, Umatilla, Winter Garden, Winter Springs, Eatonville, Fta. Myers Beach, Fernandina Beach, Pensacola, Largo, Maitland, and Palatka; Alachua, Bay, Collier, Desoto, Flagler, Hillsborough, Lee, Manatee, Orange, Putnam, Sarasota, Seminole, and Volusia Counties; and the Bay, Clay, Lake, Leon, Martin, St. Johns, Volusia, Polk, Osceola, and Brevard County School Districts, as their Continuing Services Engineer. We are very proud of our continuing relationships.

We appreciate the opportunity to submit our qualifications and look forward to continuing our existing relationship with the UCNSB.

Sincerely,

CPH, Inc.

David A. Gierach, P.E./President
TABLE OF CONTENTS

1. Qualifications Data
2. Consultant’s Understanding
3. Staffing Requirements
4. Location
5. Financial Stability
6. Insurance
7. Occupational License
8. References
9. Other Information
1. QUALIFICATIONS DATA

UCNSB CUP 10-YEAR COMPLIANCE REPORT

CPH prepared the St Johns River Water management District Consumptive Use Permit Condition 34 Compliance Report. CPH provided the following tasks to ensure compliance with condition 34 of the current CUP as issued by the District:

- Compilation and analysis of the EN50 data and meter calibration reports.
- Hydrogeologist update of groundwater model to verify that the source waters are still capable of supplying the needs authorized in the permit without causing harm to water resources, wetlands, or other legal users. The hydrogeologist also coordinated with the utility staff to document if any saltwater intrusion is occurring in the water supply wells.
- Review of policies outlined in Water Conservation Plan and verification of the policies implementation. Provided summary of Existing Reclaimed water system including current and future reclaimed usage.

Client Contact: Utilites Commission New Smyrna Beach, FL, Derek Wainscott, P.E., Director of Engineering, 200 Canal Street, New Smyrna Beach, FL 32168, Phone: 386.424.3019, E-Mail: dwainscott@ucnsb.org

Completion Date: January 2016
UCNSB TRIENNIAL REPORT UPDATE

CPH Team performed the analysis of infrastructure and financial reports for the purposes of preparing the required Triennial Report Update. CPH staff reviewed existing data with regards to the electric, water, wastewater and reuse infrastructure. CPH’s subconsultant, reviewed the financial requirements for the triennial report. CPH staff conducted site visits to observe the overall condition of the existing facilities. The overall review of the following documents and facility conditions were compiled in the updated final Triennial Report in accordance with UCNSB Requirements.

CPH reviewed the following pertinent documents:
- Electric and water supplies
- Wastewater and reuse discharge requirements
- Operations and maintenance records provided by staff
- Any known violations or complaints for all utilities
- 5yr Capital Improvement Plan for each utility
- Individual electric, chemical, labor (operators and maintenance) expenses at all water, wastewater, and reuse facilities
- Existing and any proposed loan agreements and/or notes payable
- Wastewater permits
- Water permits
- Record drawings of all owned utilities
- Capital Improvement Plan for each utility
- Financial documentation for each utility
- Debt services, loans, or notes payable
- Revenues for each utility

CPH’s financial subconsultant, provided the following analysis:
- Analyzed trends in customer base and usage for each utility
- Analyzed operating revenues and expenses for each utility
- Analyzed debt service coverage

Client Contact: Utilities Commission New Smyrna Beach, FL, Derek Wainscott, P.E., Director of Engineering, 200 Canal Street, New Smyrna Beach, FL 32168, Phone: 386.424.3019, E-Mail: dwainscott@ucnsb.org
Completion Date: June 2017

UCNSB BIOSOLIDS MANAGEMENT IMPROVEMENTS

CPH is providing engineering services for the design, permitting and construction of a “New” Biosolids Dewatering System, and associated improvements at the Utilities Commission, City of New Smyrna Beach Water Reclamation Facility to include the following tasks:
• Design of a Dewatering facility/Canopy shelter
• “Proposed” dewatering equipment to include new volute screw presses, electrical controls, associated sludge transfer piping, filtrate piping and other ancillary systems as may be necessary for required operation of the equipment.
• “Proposed” polymer system to include storage tank, metering pumps, electrical controls and associated feed piping, valves and accessories.
• “Proposed” dewatered sludge transfer / conveying system from the dewatering equipment to the loading station.
• “Proposed” loading station to include sheltered canopy area. Sludge will be conveyed to either containers or truck trailers within the loading station for proper off-site disposal.
• Design of the New Replacement Sludge Thickening System
• “Proposed” thickening equipment to include new volute thickeners, electrical controls, associated sludge transfer piping, filtrate piping and other ancillary systems as may be necessary for required operation of the equipment.
• “Proposed” polymer system to include additional metering pumps, electrical controls and associated feed piping, valves and accessories.
• “Proposed” sludge holding tank rehabilitation to include new sludge stabilization mixer, electrical controls, tank liner and other ancillary systems as may be necessary for required operation of the equipment.
• “Proposed” thickened sludge transfer pump station from the sludge holding tanks to the proposed dewatering equipment. Pump station to include new sludge pumps, electrical controls and associated feed piping, valves and accessories.
• Electrical, Controls, Instrumentation and SCADA system modifications.
• FDEP Permitting of the proposed infrastructure improvements.
• Full PLC System Replacement

Client Contact: Utilities Commission New Smyrna Beach, FL, Derek Wainscott, P.E., Director of Engineering, 200 Canal Street, New Smyrna Beach, FL 32168, Phone: 386.424.3019, E-Mail: dwainscott@ucnsb.org
Completion Date: Ongoing

CHICKASAW TRAIL UTILITY RELOCATIONS

Chickasaw Trail (County Road) was being modified to add a turn lane to Liberty Middle School. This corridor included 8-inch, 12-inch, 16-inch, and 36-inch water mains; 6-inch, 18-inch, and 24-inch force mains; and a small section of gravity sewer main. After evaluation of the roadway improvement plans, we identified conflicts with the existing 8-inch, 12-inch, and 16-inch water mains and the 6-inch and 18-inch force mains. CPH was responsible for the design, permitting, and bidding assistance for the relocation/installation of 1,700 linear feet (LF) of 24-inch force main and 1,500 LF of 16-inch water main. The design included connections to the existing water mains and force mains within the corridor, and the removal of the existing 6-inch and 18-inch force main and the 8-inch and sections of the 16-inch water mains. The design for the relocations and removal utilized the roadway plans.

Client Contact: Orange County Utilities, Ms. Claudia Paz, 9150 Curry Ford Road, Orlando, FL 32825, Phone: 407.254.9707, E-Mail: claudia.paz@ocfl.net
Construction Complete: June 2012
VOLUSIA SW REGIONAL WRF NUTRIENT REDUCTION AND EXPANSION PROJECT

CPH was selected to provide planning, design, permitting, and construction engineering, inspection and management (CEIM) services for upgrades to the Southwest Regional Water Reclamation Facility (SWRWF). The project required the facility to meet Advanced Wastewater Treatment (AWT) standards (CBOD5 < 5 mg/L; TSS < 5 mg/L; TN < 3 mg/L; TP < 1 mg/L) and expansion of the treatment capacity by 1.0 million gallons per day (MGD) based on the State of Florida’s established TMDL for nitrate (NO3-). Nitrogen and phosphorus reductions, required to meet the TMDL, required significant treatment facility modifications, including the addition of various unit operations and processes, as well as both biological and chemical treatment systems. The treatment facility was utilizing two different biological treatment systems to treat the raw wastewater from the service area: a 1.2 MGD AADF Orbal System and a 0.50 MGD USBF System. To meet the new TMDL requirements and AWT standards, a 5-Stage Bardenpho BNR system was proposed with significant modifications to each treatment system required as well as additional upstream and downstream infrastructure. CPH was responsible for the review of the existing conditions at the SW Regional WRF, evaluation of upgrading existing treatment facilities to AWT Standards, evaluation of nutrient removal alternatives, development of alternative costs, identification of the selected plan for upgrading the Southwest Regional WRF, development of an implementation schedule for the “selected plan”, generation of an abbreviated nutrient removal feasibility report, surveying and geotechnical services, grant and appropriations funding assistance, and bidding and CEIM services. The SW Regional WRF BNR improvements consist of the following infrastructure: (1) new flow metering systems; (2) a new mechanical barscreen system; (3) an anoxic flow equalization basin; (4) conversion of the USBF treatment trains and the Orbal Treatment Trains into fourstage BNR treatment systems (anaerobic basins, primary anoxic basins, aerobic basins, deoxygenation basins, secondary anoxic basins and reaeration basins); (5) a common reaeration basin; (6) two new secondary clarifiers and RAS/WAS pumping systems; (7) Addition of one turbo blower; (8) Fine bubble aeration/bubble mixing systems; (9) Internal recycle pumping; (10) chemical and supplemental carbon storage/handling facilities; (11) disc filtration system expansion; (12) electrical, controls, instrumentation and SCADA improvements; (13) roadway improvements; and (14) various buildings.

Client Contact: Volusia County, Michael Ulrich, Director, 123 W. Indiana Ave., DeLand, FL 32720, Phone: 386.736.5965, E-Mail: mulrich@volusia.org
Completion Date: April 2018

NORTHWEST WRF RECLAIMED WATER STORAGE & PUMPING SYSTEM

This project was an improvement at the Orange County Northwest Water Reclamation Facility. The Project consists of the installation of a new reclaimed water storage and pumping system consisting of a new 2 million gallon ground storage tank, three new vertical turbine pumps with provisions to expand up to 5 pumps, variable frequency drive units, electrical and control building, and all associated pipes, conduits, wires, clearing, grading, and installation of storm water swales. In addition to the ground storage tank and pumping station, the project included the installation of approximately 3,800 lineal feet of 24-inch reclaimed water transmission main and all valves and appurtenances. CPH prepared a Preliminary Design Report which included various configurations of the site plans and pump sizing alternatives. Once the concept was agreed CPH prepared the design plans to accommodate the new facility. In addition to the plan and specification preparation CPH provide necessary permitting and bidding services. During construction CPH provided construction observation services as well as conducted all progress meetings for the County.

Client Contact: Orange County Utilities, Gary Morris, P.E., Project Manager, Orange County Utility Division, 9150 Curry Ford Road, Orlando, FL 32825, Phone: 407.254.9711, E-Mail: GMorris@ocfl.net
Construction Completion Date: April 2011
SANFORD NORTH WRF BNR PROJECT

The Sanford North WRF generates a high quality reclaimed water and utilizes a seasonal discharge to Lake Monroe/St. Johns River, limited to 1.0 MGD AADF, during periods of wet weather. However, to meet the State of Florida TMDL’s for the Sanford segment of the St. Johns River, EPA’s Numeric Nutrient Limits and the Wekiva Rule, a “new” Biological Nutrient Removal (BNR) system was required at the Sanford North WRF. The City selected CPH to evaluate the nutrient removal technologies available to meet the low TN (< 3 mg/L) and TP (< 0.6 mg/L) concentrations and recommend a cost-effective, energy-efficient and reliable BNR treatment system. Based on a preliminary screening process (first-level), criteria weighting (pair-wise) analysis and a final screening process (second-level) of over thirty (30) potential BNR alternatives, the Integrated Fixed-Film Activated Sludge (IFAS) Process, an efficient and automated nutrient removal technology was selected as the “preferred” alternative. The technology is reliable in its ability to meet the stringent TN and TP requirements; is energy-efficient, has the potential to reduce electrical costs compared to the current biological treatment system (complete-mix) and could be constructed in the “existing” four aeration basin trains (treatment facility constructed on landfill site and cost of removing trash and bringing in clean fill would have been excessive). The 7.3 MGD IFAS BNR system is currently in the final stages of “phase” construction with two treatment trains operating and two treatment trains under construction. The two “operating” treatment trains were meeting the required effluent TN and TP requirements. CPH has provided all professional engineering services during the design process, bidding services and construction engineering, inspection (full-time) and management services.

The Sanford North WRF IFAS BNR improvements consist of the following infrastructure: (1) new RAS/WAS pumping systems; (2) four treatment trains consisting of primary anoxic basins (2-stage), wastewater step-feed process, aerobic basins, deoxygenation basins, secondary anoxic basins and reaeration basins; (3) Four turbo blowers and aeration systems; (4) chemical and supplemental carbon storage/handling facilities; (5) biosolids system improvements; (6) internal recycle systems; (7) roadway improvements and resurfacing; (8) grit removal system improvements; (9) stormwater system improvements; (10) security system improvements; and (11) various buildings.

Client Contact: City of Sanford, Bilal Iftikhar, P.E., Public Works Director, P.O. Box 1788, Sanford, FL 32772-1788, Phone: 407.688.5000, Ext. 5085, E-Mail: bilal.iftikhar@sanfordfl.gov

Construction Completion Date: March 2017
DUNES COMMUNITY DEVELOPMENT DISTRICT WWTP IMPROVEMENTS

CPH was selected to provide planning, design, permitting, and construction services for the DCDD WWTP improvements. The current Dunes WWTP includes three SBR trains (0.125 MGD, 0.125 MGD, and 0.25 MGD, respectively) for a total capacity of 0.5 MGD. The Dunes desired to add additional SBR process treatment capacities and improve the associated sludge digesting and drying facilities.

CPH was responsible for reviewing the existing conditions and the infrastructures and developing the best approaches for the DCDD WWTP improvements. CPH first conducted a biosolids treatment and disposal study and evaluated seven (7) options to determine the most effective and energy efficient method for the Dunes biosolids treatment. CPH then performed preliminary design of the SBR treatment system followed by FDEP permit modification. Overall the WWTP expansion includes: (1) addition of equalization basins for the existing treatment facility and the new expansion; (2) addition of one 0.21 MGD SBR treatment process; (3) new aerobic digesters; (4) sludge thickening improvements by adding a dewatering box and rehabbing the existing sludge drying beds; (5) demolition of the existing digesters and use the site to build a new storage room; and (6) all the associated electrical and control improvements.

CPH prepared all the bid documents and assisted in the bidding process, including attending the pre-bidding meeting, issuing addenda, tabulating and evaluating the bid results, and making recommendations of the Award. Currently, CPH is assisting the contractor in obtaining the building permit. Construction is expected to start by the end of March 2018. CPH is contracted by DCDD to provide construction services, including but are not limited to attending construction and progress meetings, reviewing payment applications, observing construction, answering RFIs, reviewing change order requests and making recommendations, start-up testing and project close-out, etc. Discussion of construction sequences and schedule is underway to ensure that the existing WWTP will maintain normal operation during construction.

Client Contact: Dunes Community Development District, Tim Sheahan, P.E., Utility Manager, 5000 Palm Coast Parkway SE, Palm Coast, FL 32137, Phone: 386.445.9045, E-mail: tsheahan@dunescdd.org
Completion Date: Ongoing

SIMPSON ROAD 30-INCH WATER MAIN EXTENSION

Toho Water Authority needed to extend a 30” water main from their Parkway Water Treatment Plant north along Simpson Road to just south of Boggy Creek Road. The water main route had significant crossings of both US Highway 192 and the Florida Turnpike. The route had very limited County right-of-way along portions of Simpson Road, so it required close coordination between TOHO, Osceola County, FDOT/ Turnpike Authority and the property owners along the route. This phase of the Project consisted of approximately 5,300 LF of conventionally installed Ductile Iron 30” water main Right of way, 1,080 LF of 30” fusible PVC installed within 1,060 LF of directionally drilled 36” fusible PVC casing pipe across the Florida Turnpike. All work was performed in and along the rights of way of Osceola County and the FDOT. This project was similar to the currently advertised project in that it involved working with multiple roadway jurisdictions, requires crossing of a limited access highway and included large diameter mains with connections to existing active mains.

Client Contact: Toho Water Authority, Ms. Lan Zhou, Phone: 407.944.5027, E-Mail: LZhou@Tohowater.com
Completion Date: September 2016
CPH, Inc. was retained by Orange County Utilities (OCU) Engineering to perform an evaluation of the existing gravity sanitary sewer systems of the Chickasaw Woods subdivision and some outlying neighborhoods. Our services include cleaning and video inspection of the collection system (including main line sewer, laterals, and manholes) and identification of any needed repairs or replacement of sewer mains within the collection system. The National Association for Sewer Service Companies (NASSCO) has developed the Pipeline Assessment and Certification Program (PACP) to provide a standardized and consistent way to evaluate sewer pipes using CCTV inspection. OCU has incorporated these PACP requirements into their Specifications for condition assessment which were used by CPH as the basis for our analysis. The evaluation included a cost analysis for each line segment to determine the best economical solution for each pipe segment.

CPH provided construction drawings and technical specifications for the utility system improvements at the 60%, 90% and final design submittal. The final bid documents included 16,300 lineal feet of 8” CIPP sanitary sewer lining, 1,600 LF of 8” sewer replacement, 2,200 lf of 6” forcemain replacement, replace 7 manholes, seal and recoat 82 manholes, 50 sewer lateral lining or replacements, replacement of 2,500 LF of 4” to 8” water main and the construction of the a new duplex pump station. The project also included roadway replacement due to sewer relocations occurring mostly in paved roadways. CPH was also responsible for completing applications and obtaining Water and Wastewater permits from FDEP and County right-of-way permits for the improvements.

CPH provided construction administration services for this project. Services included modifying bid documents as necessary, attending a pre-construction meeting, review of shop drawings and product submittals, attending construction progress meetings, observing construction of the project, assisted with field adjustments or RFI’s during construction, conduct substantial and final completion inspections and preparing appropriate “punch lists”. CPH also prepared record drawings and appropriate certificates of completion.

Client Contact: Orange County Utilities Department, Pollen Jung, 9150 Curry Ford Road, Orlando, Florida 32825, Phone: 407.254.9779, E-Mail: pjung@ocfl.net
Completion Date: March 2016

SR-50 UTILITY RELOCATION PROJECT, PHASES I-III (FDOT JPA)

CPH has provided improvements to over 13 miles of the water distribution system and wastewater collection and transmission system within the SR-50 Corridor, one of the busiest roads in Central Florida – which was expanded from 4-lanes to 6-lanes. The utility improvements included building new facilities as well as the removal of facilities in conflict with the FDOT roadway design. The utility improvements were constructed under a joint agreement between Orange County and FDOT. The construction documents met FDOT plan preparation standards, FDOT roadway design schedule and coordinated with the FDOT road design and other utilities. The project included the installation of approximately 5.5 miles of 8, 12, 16, 20 and 24-inch diameter water main and 7.7 miles of 4, 8, 12, 16, 20 and 30-inch diameter force main along SR-50 from West SR-436 to Old Cheney Road. Connection of existing services and lateral mains were required while maintaining service to customers.

Client Contact: Orange County, Mr. Jose E. Hernandez, P.E., Engineer III, Orange County Utilities Engineering Division, 9150 Curry Ford Road, Orlando, FL 32825, Phone: 407.254.9718, E-Mail: Jose.Hernandez2@ocfl.net
Construction Completion Date: July 2015
PALM COAST WRF NO. 2 MBR BNR

CPH was selected by the City of Palm Coast to provide planning, design, permitting, and construction engineering, inspection and management (CEIM) services for the new WRF No. 2 project. CPH systematically evaluated more than twenty (20) BNR treatment methodologies to determine the most cost-effective and energy efficient BNR system for the City, their operational staff and the limitations of the project site. The BNR technology selected was the flat panel Membrane Bioreactor (MBR) process in conjunction with a 5-Stage Bardenpho treatment system (anaerobic, pre-anoxic, aerobic, post-anoxic and reaeration basins) to achieve the advanced wastewater treatment (AWT) standards required. The MBR/BNR process required a much smaller footprint than that of a conventional BNR system as secondary clarifiers, tertiary filters and all associated infrastructure are not required with MBR systems.

The Palm Coast WRF No. 2 MBR/BNR improvements consist of the following infrastructure: (1) flow metering systems; (2) Influent headworks structure with mechanical drum screens and grit removal; (3) a 5-Stage MBR/BNR treatment system (2 trains) - anaerobic basins, primary anoxic basins, aerobic basins, deoxygenation basins, secondary anoxic basins and reaeration basins; (4) process control equipment; (5) flow equalization to reduce the required membrane surface area and enhance the effectiveness the biological processes (6) fine and coarse bubble aeration systems; (7) internal recycle pumping systems; (8) submersible mixing systems; (9) membrane modules with flat plate membrane panels for the MBR tanks as well as cleaning and backwashing systems; (10) chlorine contact chambers; (11) a transfer pump station; (12) a 2.0 MG ground storage tank; (13) a reject/percolation pond; (14) chemical and supplemental carbon storage/handling facilities; (15) sludge holding/treatment tanks; (16) sludge dewatering facilities; (17) electrical, controls, instrumentation and SCADA improvements; (18) yard piping; (19) stormwater management system improvements; (20) roadway improvements; (21) reclaimed water distribution pump station; and (22) various buildings and miscellaneous infrastructure.

Client Contact: City of Palm Coast, Mr. Richard Adams, Public Works Director, 2 Utility Dr., Palm Coast, FL 32137, Phone: 386.986.2351, E-Mail: radams@palmcoastgov.com
Completion Date: Estimated April 2018

SR 46 UTILITY RELOCATIONS

CPH provided design, permitting, and CEI services for the relocation of existing utilities along a 2.7 mile stretch of SR 46 between Mellonville Ave. and SR 415. The City’s utilities were required to be relocated to accommodate widening of SR 46 by the Florida Dept. of Transportation (FDOT). The Work included Gopher Tortoise permitting and relocations, permitting through the Florida Dept. of Environmental Protection (FDEP water and sewer permits), coordination with FDOT and Florida Power and Light (FPL), and preparation of the FDOT required Utility Work Schedule (UWS). At CPH’s recommendation, a portion of the new construction included construction on Orlando Sanford International Airport (OSIA) property in order to place the new utilities outside FDOT Right-of-Way (R/W). CPH spearheaded the effort to obtain OSIA approval and coordinate construction requirements and timing.

Client Contact: Orange County Utilities Department, Ms. Elizabeth O’Reilly, 9150 Curry Ford Road, Orlando, FL 32825, Phone: 407.254.9900, E-Mail: Elizabeth.oreilly@ocfl.net
Completion Date: April 2017
SANFORD WATER TREATMENT PLANT NO. 2 – DISINFECTION BY-PRODUCT REDUCTION IMPROVEMENTS

CPH provided the design of improvements to the City of Sanford’s Water Treatment Plant No. 2. The improvements were part of an overall project being funded through FDEP # DW590120, to comply with the stage 2 of the Disinfection By-Products Rule. Water Plant No. 2 is rated for 4.6 MGD of distribution, and furnishes conventional aeration and disinfection treatment prior to distribution to Sanford’s water customers. The improvements were designed to remove the organics from the raw water, which were identified as precursors of disinfection by-products (TTHM’s).

The project included:
- Add ozone treatment to reduce hydrogen sulfide levels thereby increasing the performance of the granular activated carbon (GAC)
- Design the six (6) 40,000 lb. GAC cylinders required to remove total organic carbon from the raw water. (Pilot testing was performed with the GAC units in biological mode (BAC) and was found to be successful. The current design can be operated in both adsorption or biological modes.
- Demolish the existing cascading aerators
- Construct a new chemical storage and pump building
- Perform onsite piping improvements to meet the increased flow demands
- Construct a new ozone / operations building to accommodate the operations staff and to house the ozone generator and other related equipment
- Connect the City’s main water plant SCADA system with the Auxiliary water plant to allow one operator to monitor both facilities simultaneously, through the County wide fiber network
- Work with the City to increase their ASR well CUP to supplement the raw water supply during times of peak demands

**Client Contact:** City of Sanford, Bilal Iftikhar, P.E., Public Works Director, P.O. Box 1788, Sanford, FL 32772-1788, Phone: 407.688.5000, Ext. 5085, E-Mail: bilal.iftikhar@sanfordfl.gov

**Construction Completion Date:** March 2015
MOSELLE AVENUE AND CORRINE TERRACE PUMP STATIONS AND FORCE MAIN REPLACEMENTS

CPH was responsible for the construction of approximately 7,470 LF of 8 and 10-inch PVC gravity sewer, 28 sanitary manholes, reconnection of 99 service laterals, 5,165 LF of 6-inch force main, two new duplex pump stations and site plans, two existing pump stations abandonments, existing sewer removal or abandonments, and easement acquisitions. The project work involved working within a residential neighborhood within the Rights-Of-Way of Orange County. CPH collected and reviewed available data from the County and other jurisdictional agencies that had a bearing on the project. CPH had a closed circuit television (CCTV) inspection performed on the gravity collection system. Based upon the gathered information CPH prepared a preliminary layout of the proposed alignment of the new gravity sewer and presented the repair and replacement methods for the sanitary sewer system as well as any other pertinent information for the County’s evaluation. A preliminary estimate of probable construction costs was prepared and included in the Design Memorandum. The preliminary design included locating potential sites for two new pump stations and coordinating future utility easements. CPH coordinated the survey, geotechnical and CCTV investigations which were used for the final design of the project. CPH provided specifications and plans for bidding of the project. Beyond general design issues, CPH prepared a general phasing of work as needed to take into consideration maintaining service to all customers in the work area and minimize impacts. To assist the County with public awareness, CPH assisted County staff at a public meeting with and reviewed the scope of the work with residents impacted by the project. CPH was responsible for completing applications and obtaining a wastewater collection system permit. Additionally, CPH also obtained the Orange County Building permits for the pump station sites. CPH also coordinated with the Orange County Public Works to facilitate the successful completion of needed project easements. During construction, CPH provided part time project observations, attended monthly meetings, reviewed shop drawings, replied to requests for information, and reviewed change orders as needed. During construction CPH maintained a close relationship with the County’s inspectors and we were able to quickly assist with construction issues as they arose which helped the construction team maintain the schedule for the project.

Client Contact: Orange County, Mr. Pierre Cadely, Orange County Utilities Division, 9150 Curry Ford Road, Orlando, FL 32825, Phone: 407.254.9733, Fax: 407.254.9999, E-Mail: Pierre.cadely@ocfl.net

Construction Completion Date: April 2011
2. CONSULTANT’S UNDERSTANDING

CPH’s approach to providing services to the UCNSB will be a collaborative effort between the consultant team, the UCNSB staff, departments, officials and the public. Excellent communication protocols will be established between all parties to develop an understanding of the UCNSB’s goals and budget to assist in the development of specific scopes and schedules to complete projects assigned through the continuing professional services contract. Critical attention will be focused on the planning, conceptual design, implementation, maintenance, quality assurance, communication and management of each assignment assuring that completed projects exceed expectations.

CPH has the staff, technical ability and resources to provide professional services to plan, design and implement facilities of any scale that may be assigned through this contract. Projects assigned by the UCNSB through this contract will require approach language to be drafted specific to each assignment. The following lists and discusses items which our team considers key when developing approach language for continuing contract projects.

Implementing projects comes from knowing how to create master plans, design development and construction documents, and then seeing that the project gets built according to plan, budget and schedule. CPH is known for our ability to get projects built.

Innovative design methods are critical to creating environments that are safe and attractive. Our team staff’s Crime Prevention through Environmental Design (CPTED) specialists understand crime-to-environment relationships and know how to integrate environmental security and defensible space strategies and tactics into the designs of facilities to improve security and reduce the opportunity for crime to occur. As detailed design documents are prepared, our team can perform CPTED assessments to ensure public spaces are not only visually exciting but safe.

Community participation programs are an important element in any assignment. Our team has a proven record in the development and implementation of community information and participatory programs. We are familiar with directing public projects and can identify potential conflicts before they occur. The personnel assigned to this project are trained in conflict resolution and consensus building techniques and can assist to develop public involvement plans for specific projects as assigned.

Design capability is an intangible characteristic that is difficult to measure. It calls for a subjective evaluation of a team’s abilities and its importance should not be overlooked. Our team has developed very specific design criteria for any facility and understands how to extrapolate the criteria to create aesthetically pleasing, unique and functional designs.
Maintenance is a topic rarely mentioned, but of paramount importance. The cost of operating and maintaining a facility will be considered throughout the design process for all projects assigned. By being aware of the conditions which impact maintenance operations including the expertise of staff, available equipment and the location of facilities, maintenance programs can be developed to achieve the desired results.

CPH provides the UCNSB with inherent cost savings through the accumulated knowledge and location of the firm and staff. Our team has the data, availability, and resources to provide the UCNSB with cost savings solutions. Our team has proven our ability to routinely meet budget and schedule needs for our clients. CPH thoroughly understands the scope of work requested and the challenges associated with delivering projects with high standards of safety and quality, in a cost-effective and timely manner. CPH’s selection brings the following strengths to the execution of this contract:

- Relevant design and construction experience in Central Florida
- Extensive accumulated knowledge of the UCNSB’s design standards, needs, and past improvements
- The CPH team members are high on the learning curve and can hit the ground running
- In-house capacity and capability to self-perform a majority of the critical path activities for each item in the scope of work

CPH understands that the UCNSB is seeking a qualified architectural/engineering consulting firm to provide ongoing professional services for Civil Engineering Services. CPH will provide the UCNSB with unmatched expertise and resources for projects under this contract. CPH can provide the UCNSB with services required for the design/construction/repair of identified project(s) which may include, but not limited to, conferences, consultation and preparation of studies, working drawings, preliminary design, specifications, estimates, drawings, modeling, design, drafting of bids/proposals, construction administration, cost planning, inspection, testing, site analysis, bidding/selection recommendation, presentation/ recommendation to Staff and/or Commission, etc. Our resumes and the professional histories of the various team members clearly demonstrate a vast and broad background of experience which will be effectively applied to the UCNSB’s benefit. CPH is highly qualified to provide continuing services for the UCNSB’s projects.
The following outlines our past successful approach that has been implemented on continuing contract projects. Each project is unique, and this approach would be refined per project requirements.

**Phase I – Initiation**
- Initial request – The UCNSB provides CPH with a request for professional services for a specific project.
- Project team assembled – based upon project requirements, the Project Manager will assemble the appropriate professional disciplines and staff.
- Proposal Meeting – The project manager will schedule a Proposal Meeting to meet the UCNSB staff to review the project scope of work, goals, design criteria and constraints.
- Definition of Scope and Notice to Proceed - Based upon the information gathered during the proposal meeting, a defined scope of work and proposal with a time and fee schedule will be prepared. This proposal will be submitted to the UCNSB for review, comment, and execution. Work will begin immediately upon a written notice to proceed.

**Phase II – Analysis and Due Diligence**
- Collected Data - review and study the collected drawings and documents supplied by the UCNSB and others for incorporation into the design process.
- Codes and Standards - Review and study related jurisdictional codes and standards as they pertain to the project classification.
- Site Survey - Pursuant to project requirements, obtain boundary and/or topographic survey information and prepare a survey based on State Plane, NAD 83 and vertical coordinates based on NGVD.
- Utilities - Obtain utility services information for inclusion on the site survey drawing.
- Tree Survey - Obtain tree survey information when required.
- Wetlands - Establish and survey jurisdictional wetland boundaries when required.
- Soils Analysis - Review and study available soils maps and data.
- Hydrology Study - Prepare existing condition hydrology study when required.
- Environmental Impact Study - Prepare phase 1 Environmental Impact Study when required.
- Space/Needs Analysis – Meet with the UCNSB staff to determine space/needs requirements for building improvements and prepare a written report for review and comment.
- Program Development – Meet with the UCNSB staff and other interested parties such as athletic associations or leagues, user groups, seniors, etc. to gather and prioritize project program elements.
- Site Analysis Documents – Prepare drawings and/or reports summarizing the investigative findings.
- Presentation – The Site Analysis Documents, Space/Needs Analysis and/or Program Development priority list will be submitted and presented to the UCNSB for review and comment.
Phase III – Conceptual Design Services
• Based upon the UCNSB’s response to the presentation element, CPH will prepare design concepts for the proposed project.
• Based on the UCNSB’s comments and input from any required public meetings, CPH will prepare a final conceptual plan for acceptance by the UCNSB.

Phase IV – Design Development
• Based on the approved conceptual design, CPH will prepare project drawings and documents that will be approximately, 60% complete. Drawings will be as required by the project type and may include, architectural, structural, civil, mechanical, electrical, plumbing, and/or landscape packages. CPH will compile a Project Status Report, based on the accomplishments of the preliminary services. The drawings will be submitted to the UCNSB for review and comment.
• When appropriate to the project, CPH will prepare a drawing indicating soil boring locations for geotechnical testing. This information will be submitted with the preliminary plan for review and authorization to proceed with geotechnical testing.
• CPH will customize our construction cost-estimating documents for the project and will prepare a preliminary cost estimate. The cost documents will be used throughout the project to monitor construction cost and to attach costs to various alternatives.
• CPH will meet with the necessary regulatory agencies and conduct a “pre-submittal” presentation. The project alternatives will be presented and we will gain knowledge of the agencies’ concerns and expectations.
• CPH will prepare and submit a preliminary technical specifications package based on the 60% package.

Phase V – Construction Documents Services
• CPH will incorporate comments obtained from the UCNSB’s review, the public involvement process, our internal review and regulatory agencies into the project design to finalize the construction drawings.
• CPH will refine the design and the Project Status Report will be revised to include progress of the project and delineate issues of concern, and decisions that need to be made.
• The cost estimate will be updated and revised to reflect changes to the plan.
• A permitting package will be prepared and sent to all of the regulatory agencies. Meetings will be conducted with the regulatory agencies and their comments will be addressed and incorporated into the drawings.
• 90% construction drawings, specifications and cost estimate, will be submitted to the UCNSB for a second review.
• Upon approval of the 90% per construction documents and receipt of the comments from the UCNSB, the public, our internal review and the regulatory agencies, the 100% construction documents will be finalized and submitted to the UCNSB for bidding.
• The cost estimate will be updated based on unit price bid quantities.

Phase VI – Bidding Services
• CPH will assist the UCNSB in preparing bid advertisements and packages.
• CPH will provide the UCNSB with the interpretation of the intent of the construction documents throughout the bidding process. All responses to questions will be recorded in writing and distributed to the UCNSB and prospective bidders.
During the bid process, if requested by the UCNSB, a pre-bid meeting will be conducted with prospective bidders to receive questions and comments. CPH will respond to all questions and comments in writing via the issuance of an addendum.

CPH will revise the bid documents and prepare bid addenda as required.

CPH will be present for the bid opening and will assist the UCNSB in evaluating all bids submitted, including compliance with the construction documents, project budget, ability of the contractor to perform the work, etc.

Based on the review of the bids and contractor qualifications, CPH will recommend the lowest qualified bidder to the UCNSB.

Phase VII – Construction Administration Services - During construction, CPH can provide construction administration services to represent the UCNSB as its Contract Administrator for projects as agreed upon with the UCNSB. Specific services typically include:

- The interpretation of drawings and specifications and issuance of instructions to the contractor performing the work.
- The review and approval of contractor's submittals.
- Periodic construction reports, based upon site inspections. Construction observation forms will be completed by the CPH representatives and will be included in the reports. Issues of special concern will be promptly identified and the Project Manager and the UCNSB will be notified. The frequency of inspections will be based on project requirements and determined in the scope of work specific to each project.
- Issue field directives, respond to contractor’s request for information (RFI), issue supplementary instructions and clarifications and negotiate change orders as required.
- Review monthly contractor pay requests and supporting data, based on field observation visits, review of test results and contractors performance and recommend approval or disapproval to the UCNSB. Record construction drawings will also be reviewed with pay requests to insure the contractor is keeping up with recording modifications to the drawings.
- Make a substantial completion inspection and develop a punch list of items that the contractor is to complete in order to receive final payment.
- Make a final inspection to insure the punch list items have been completed to the satisfaction of the UCNSB. Upon the successful completion of the punch list items by the contractor, CPH team members will review the final pay request and support data for recommendation to the UCNSB.
- CPH will receive the record construction drawings from the contractor and incorporate the information provided into record as-built drawings.
- CPH will conduct a warranty inspection after eleven months from final acceptance of the project, and submit a written report and/or punch list of items needing attention.
3. STAFFING REQUIREMENTS

KEY PERSONNEL OVERVIEW

We have carefully evaluated the RSQ document, available information, and have assembled a team that has the expertise and background to work on the Civil Engineer Contract. CPH has the ability to pull from over 240 staff members to assist in design and construction services. Our total level of in-house resources consists of engineers, designers, environmental scientists, contractors, architects, surveyors, planners, GIS analysts, and landscape architects. The chart below identifies our project team and their qualifications.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Years of Exp.</th>
<th>Education/Licenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>David A. Gierach, P.E., CGC</td>
<td>Principal-in-Charge</td>
<td>34</td>
<td>B.S. in Environmental Engineering, University of Florida Professional Engineer – FL (No. 38642) General Contractor License – FL (No. 060789)</td>
</tr>
<tr>
<td>Rocco R. Nasso, P.E.</td>
<td>Project Manager</td>
<td>17</td>
<td>B.S. in Civil Engineering, University of Central Florida Professional Engineer - FL (No. 64727) Qualified Stormwater Management Inspector</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Advanced Maintenance of Traffic Certification OSHA Construction Safety and Health Certification CTQP Asphalt Paving Technician- Level I &amp; II</td>
</tr>
<tr>
<td>Benjamin M. Fries</td>
<td>Project Designer</td>
<td>31</td>
<td>M.S. in Environmental Engineering, University of Central Florida B.S. in Environmental Engineering, University of Central Florida Adjunct Professor, University of Central Florida (1986 – present), Civil, Environmental &amp; Const. Engineering Certified FE / PE Review Instructor</td>
</tr>
<tr>
<td>Dave Refling, P.E., BCEE</td>
<td>Project Engineer</td>
<td>42</td>
<td>B.S. in Physics, University of Wisconsin M.S. in Environmental Engineering, Johns Hopkins University Professional Engineer- FL (No. 31107)</td>
</tr>
<tr>
<td>David E. Mahler, P.E.</td>
<td>Project Engineer</td>
<td>27</td>
<td>B.S. in Environmental Engineering, University of Central Florida Professional Engineer – FL (No. 50041)</td>
</tr>
<tr>
<td>Roberto &quot;Robbie&quot; Gonzalez, P.E.</td>
<td>Project Engineer</td>
<td>22</td>
<td>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 Engineer- FL (No. 56875)</td>
</tr>
<tr>
<td>Scott A. Breitenstein, P.E.</td>
<td>Project Engineer</td>
<td>26</td>
<td>B.S. in Environmental Engineering, University of Central Florida Professional Engineer – FL (No. 57402)</td>
</tr>
<tr>
<td>James R. Morris, Jr., P.E.</td>
<td>Project Engineer</td>
<td>17</td>
<td>B.S. in Environmental Engineering, University of Central Florida Professional Engineer – FL (No. 62384) Commercial Pilot License (No. 266577109)</td>
</tr>
<tr>
<td>Terry M. Zaudtke, P.E.</td>
<td>Project Engineer</td>
<td>41</td>
<td>M.S. in Civil Engineering, University of Minnesota B.S. in Civil Engineering, University of Minnesota Professional Engineer – FL (No. 32928)</td>
</tr>
<tr>
<td>Gerald M. Cox, CGC, CUC</td>
<td>QA/QC</td>
<td>42</td>
<td>B.S. in Building Construction, University of Florida Certified General Contractor – FL (No. 010771) Certified Utility Contractor – FL (No. 051667)</td>
</tr>
</tbody>
</table>
David A. Gierach, P.E., CGC
Principal-in-Charge

34 Total Years of Experience • 30 Years with CPH

Similar Project Experience

Palm Coast Water Treatment Plant No. 3
- CPH provided complete design and construction management services for a new water treatment facility and administration offices on a twenty-four acre campus located adjacent to US 1. CPH prepared the initial project scope, budgets, surveys, preliminary and final design, permitted the project with FDEP, FDOT, Army Corp Engineers, Flagler County, City of Palm Coast, and the St. Johns River Water Management District and provided full construction engineering and inspection Services for the project.
- The new water system consists of the following components: 3.0 MGD Low Pressure Reverse Osmosis skids (RO 1.5 MGD), well field system to supply raw water to the Water Treatment Plant, concentrate treatment & disposal system, finished water distribution system to connect to existing distribution system.

City of Sanford’s Water Treatment Plant No. 2 – Disinfection By-Product Reduction Improvements
- CPH provided the design of improvements to the City of Sanford’s Water Treatment Plant No. 2. The improvements were part of an overall project being funded through FDEP # DW590120, to comply with the stage 2 of the Disinfection By-Products Rule.
- Water Plant No. 2 is rated for 4.6 MGD ADF and furnishes conventional aeration and disinfection treatment prior to distribution to Sanford’s water customers.
- The improvements were designed to remove the organics from the raw water, which were identified as precursors of disinfection by-products (TTHM’s).

JEA – Otter Run Water Treatment Plant Renewal & Replacement
- CPH is providing engineering services to JEA for the Otter Run Water Treatment Plant Renewal and Replacement. This work include evaluating the existing water treatment facility and make recommendations for upgrading the existing plant to include a removal and replacement of the high service pumps, above ground storage tanks, aerator, sodium hypochlorite system and the electrical equipment.
- CPH will review the site constraints, available plans, record drawing, operation manuals and research existing permits to determine the existing facility characteristics and further facility needs, CPH will be responsible for preparing a report to summarize the findings and recommendations as well as preparing a scope of work to be used in project specifications. CPH will also be responsible for preparing an Opinion of Probable Cost for the recommended upgrades.

JEA Ponce de Leon WTP Pump Building & Reservoir Replacement
- CPH is providing engineering services to JEA for the Ponce de Leon Water Treatment Plant Pump Building and Reservoir Replacement. CPH has provided the preliminary and final design services as well as the permitting services. We are also providing limited construction administrative services.
- The existing facility has a permitted capacity of 0.865 mgd. The Ponce De Leon WTP is located 600 ft off of the Atlantic Ocean, and the above grade metallic equipment and piping has subsequently corroded due to the marine environment. The goal of our project is to replace the corroded items with materials suitable for the marine environment.

Sanford Regional Water/Wastewater/Reclaimed Master Plan and Tri-Party System
- CPH provided master planning and design services for the City of Sanford’s utility system.
- The service area and planning effort included water supply, water quality, and distribution system analysis for the water system and collection, treatment, disposal for the wastewater system, and a regional reclaimed water system.
- The ability to service the utility service area was determined based on existing population data and projections.
- CPH examined the capability of all the existing facilities and described recommended improvements over the planning period. Information from these plans was utilized to formulate the comprehensive plan utility elements.

Town of Oakland Water System Improvements Project
- The Town authorized services for CPH to design, permit, bid and provide construction administration for improvements to their existing water system.
- The improvements were originally recommended in the master plan effort by CPH previously performed for the Town.
- In addition, CPH assisted the Town with obtaining a FDEP SRF loan for $1.973 Million to install the water system improvements.
ROCCO R. NASSO, P.E.
Project Manager

17 Total Years of Experience • 17 Years with CPH

Similar Project Experience

Utilities Commission of New Smyrna Beach CUP 10-Year Compliance Report
- CPH prepared the St Johns River Water management District Consumptive Use Permit Condition 34 Compliance Report.
- CPH provided the following tasks to ensure compliance with condition 34 of the current CUP as issued by the District: 1) Compilation and analysis of the EN50 data and meter calibration reports; 2) Hydrogeologist update of groundwater model to verify that the source waters are still capable of supplying the needs authorized in the permit without causing harm to water resources, wetlands, or other legal users. The hydrogeologist also coordinated with the utility staff to document if any saltwater intrusion is occurring in the water supply wells; and 3) Review of policies outlined in Water Conservation Plan and verification of the policies implementation. Provided summary of Existing Reclaimed water system including current and future reclaimed usage.

Utilities Commission of New Smyrna Beach Biosolids Management Improvements
- CPH is providing engineering services for the design, permitting and construction of a “New” Biosolids Dewatering System, and associated improvements at the Utilities Commission, City of New Smyrna Beach Water Reclamation Facility.

Seminole County Regional Water Treatment Facility at Yankee Lake
- 10 MGD (expandable to 25 MGD) water treatment facility is being constructed, as part of this overall effort, Reiss Engineering, partnered with the team to serve as the Construction Management (CM) team
- Offsite piping included the opened cut installation of approximately 40,000 LF of dual 42” HDPE raw water pipeline with 36” ductile iron pig stations.
- Onsite yard piping consisted of approximately 12,000 LF of process piping ranging from 4” to 36” diameter.
- Installation of offsite large diameter piping, conduits for electric power and fiber optic cable from the raw water pump station to the treatment facility site
- Construction of a raw water pump station and intake structure to be located on the St. Johns River

Midway Utilities Replacement, Phase I
- Performed limited inspection services, shop drawing review, post design services, attendance at progress meetings, as-built drawings, clearance letter, certification of completion of construction, substantial completion and final inspections, review of change orders, and negotiation assistance for changes in the work
- Construction of approximately 9,600 ft of 4-inch to 10-inch water lines to replace the existing substandard and undersized water mains, water services, and fire hydrants

Area IV Well Outfitting and Raw Water Transmission Main - Phase I and II
- Phase I- Drilling of 5 water supply production wells, 3 saline water monitoring wells, outfitting of 6 production wells, and construction of approximately 72,000 ft. of new raw water transmission main (16-20-inch diameter pipeline) from the City’s Mourning Dove Water Treatment Plant to the Area IV well field
- Phase II- Well drilling of 8 production wells and 1 saline water monitoring well, conversion of 1 test well to a production well, and well outfitting of 9 production wells
- Additionally, the project included the construction of approximately 18,975 linear feet of raw water transmission main from the north end of the existing Area IV Phase 1 Wellfield (near well 408) to each of the Area IV Phase 2 production wells (Wells WR-1 through WR-9)

Seminole County Water Treatment Plant Facilities
- Seminole County constructed improvements to the Southeast Regional, Country Club, and Lynwood Water Treatment Facilities to achieve compliance for the Stage 2 Disinfection By-Product regulations.
- As part of this overall effort, CPH was selected as part of the Engineering Team to serve as the Engineers of Record (EOR) for these major projects.
- CPH was responsible for Site Civil design, yard piping and the finished water storage design for all three sites, as well as partial EOR inspection services on SER WTP and full EOR inspection services on both CC WTP and Lynwood WTP.
- Project included improvements to existing groundwater wells, Construction of ozone treatment systems, Granular Activated Carbon Systems, chemical feed facilities, (3) Ground Storage Tanks, High Service Pump Stations, electrical buildings, ozone generation buildings, and chemical analyzer buildings, aeration system, Complete Electrical and Process Instrumentation and Controls Systems and demolition of the existing facilities that included removal of the existing ground storage tank, chemical facility, high service pump station, yard piping.
Ben serves CPH as a Vice-President and Senior Project Manager. He has extensive experience in the planning, design, permitting, construction and management of water, wastewater, water reclamation, biosolids management, wastewater collection/transmission and reclaimed water distribution systems. Ben has special expertise in the design of water reclamation processes, Biological Nutrient Removal (BNR) and innovative/alternative treatment systems, facility optimization, master planning, permitting, O&M and eO&M manuals and construction administration. He has worked on over 75 wastewater treatment facility projects for municipal and private clients and the DOD.

**Education**

M.S.E. in Environmental Engineering, University of Central Florida  
B.S.E. in Environmental Engineering, University of Central Florida  
Adjunct Professor, UCF (1986 – present), Civil, Environmental and Construction Engineering.

**Licenses / Certifications**

Engineering Intern (No. 1083ET281)  
Certified FE / PE Exam Review Instructor  
WEF Member (1984 – present)  
APWA Member (2005-present)

**Key Strengths**

• WWTP, WRF and Advanced/ Tertiary Treatment  
• Biological Nutrient Removal design and facility optimization and modeling  
• Water Reclamation/Reuse Systems  
• Wastewater Collection/ Transmission Systems  
• Biosolids Stabilization and Residuals Management

**Similar Project Experience**

**Utilities Commission of New Smyrna Beach Biosolids Management Improvements**

- CPH is providing engineering services for the design, permitting and construction of a “New” Biosolids Dewatering System, and associated improvements at the Utilities Commission, City of New Smyrna Beach Water Reclamation Facility.

**Sanford North WRF - BNR Improvements**

- Master Lift Station Rehabilitation and headworks modifications to accommodate the new BNR system hydraulically and to minimize oxygenation prior to the influent entering the primary anoxic zone  
- “Dynamic” influent analysis  
- The interior of each of the four (4) “existing” biological treatment trains (aeration basins) will be reconfigured to accommodate the new BNR sequence: Primary Anoxic Basins No. 1 and No. 2, IFAS (Hybas) Basin, De-Oxygenation Basin, Secondary (Post) Anoxic Basin and Reaeration Basin  

**Sanford South Water Resource Center – Phase I**

- Selected by the City to provide professional engineering services for the planning, design, permitting and construction engineering, inspection and management (CEIM) of a new 2.0 MGD biological nutrient removal facility on the south side of the City.  
- The Sanford South WRC BNR project consisted of the design and construction of the following infrastructure: (1) flow metering systems; (2) an Influent Structure with an automatic, self-cleaning barscreen (1mm); (3) grit removal/dewatering system; (4) submersible master lift station; (5) odor control systems; (6) BIODENITRO biological treatment (BNR) system - a pair of oxidation ditches providing advanced secondary treatment/ nutrient removal; (7) high-rate secondary clarifiers; (8) tertiary disc filtration system; (9) “covered” chlorine contact chambers (25% less disinfectant required); (10) sodium hypochlorite storage/handling facilities; (11) submersible effluent transfer pump station; (12) 3.0 MG reclaimed water ground storage tank; (13) 2.0 MG reject water ground storage tank; (14) reclaimed water distribution pump station; (15) biosolids holding tank; (16) biosolids dewatering system; (17) office/laboratory, maintenance and electrical/generator buildings; (18) electrical/controls/instrumentation and SCADA systems; (19) biosolids receiving stations; and (20) Class “AA” biosolids drying system.

**Sanford South Water Resource Center – Phase II Improvements**

- Selected by the City to provide professional engineering services for the planning, design, permitting and construction engineering, inspection and management (CEIM) for the expansion of the Sanford South WRC BNR facility to 3.0 MGD AADF.  
- The Phase II improvements involved a 1.0 MGD AADF increase in the treatment capacity and the addition of the following infrastructure: (1) tertiary filtration system expansion (third Hydrotech disc filtration unit); (2) chlorine contact chamber expansion; (3) addition of a fourth transfer pump to the “existing” Transfer Pump Station; (4) chemical feed system modification; (5) an “advanced” BNR tuning and control system to provide “enhanced” nutrient removal and reduce power consumption; (6) electrical, controls, instrumentation and SCADA system improvements; (7) stormwater management system improvements; and (8) expansion of the “existing” Operations Building.

**Palm Coast WWTP No. 2 MBR/BNR Project**

- Selected by the City to provide professional engineering services for the planning, design, permitting and construction engineering, inspection and management (CEIM) of a new 2.0 MGD MBR/BNR treatment facility, expandable to 6.0 MGD.  
- The new BNR facility utilizes the MBR process in conjunction with anaerobic, pre-anoxic, nitrification and post-anoxic biological processes to achieve AWT standards. The MBR process requires a much smaller footprint than that of a conventional 5-stage BNR process; a single MBR process tank replaces the re-aeration, secondary clarifier and tertiary filtration processes.

**Benjamin M. Fries**  
Project Engineer  

31 Total Years of Experience • 31 Years with CPH
DAVE REFLING, P.E., BCEE

Project Engineer

42 Total Years of Experience - 4 Years with CPH

Similar Project Experience

City of Palm Coast WWTP No. 2 MBR BNR Project
- The proposed Palm Coast WWTP No. 2 will utilize the flat panel MBR process in conjunction with anaerobic, pre-anoxic, nitrification and post-anoxic biological processes to achieve the advanced wastewater treatment standards
- The MBR process requires a much smaller footprint than that of a conventional 5-stage Bardenpho process utilizing re-aeration, secondary clarifier and tertiary filtration following the biological processes. Basically, a single MBR process tank replaces the re-aeration, secondary clarifier and tertiary filtration processes

Sanford South Water Resource Center
- Design, permitting and construction services associated with a new 6.0 MGD BNR facility
- Influent Structure (1 mm screening system, master lift station, odor control system and grit removal)
- Oxidation Ditch biological treatment system (BIO DENITRO/BIODENIPHO)
- Secondary clarification system (high efficiency) and RAS/WAS pumping systems
- Disinfection System with ORP control, Reclaimed Water Distribution Pump Station, Sludge Holding Tank and aeration systems, Biosolids dewatering system, Complex self-monitoring process controls, and Electronic O&M (eO&M) Manual Generation – iPad Platform

Sanford North WRF - BNR Improvements
- Master Lift Station Rehabilitation and headworks modifications to accommodate the new BNR system hydraulically and to minimize oxygenation prior to the influent entering the primary anoxic zone
- “Dynamic” influent analysis
- The interior of each of the four (4) “existing” biological treatment trains (aeration basins) will be reconfigured to accommodate the new BNR sequence: Primary Anoxic Basins No. 1 and No. 2, IFAS (Hybas) Basin, De-Oxidation Basin, Secondary (Post) Anoxic Basin and Reaeration Basin

Palm Coast Biosolids Management Alternatives Evaluation
- The City currently produces approximately 16.5 wet tons of sludge cake and contracts with the Florida N-Viro for hauling, treatment, and disposal of the biosolids, the team is contracted by the City to evaluate the possible alternatives
- The purpose of the work order is to evaluate the sustainability of the current biosolids disposal method utilizing the Florida N-Viro advanced alkaline stabilization process, evaluate alternatives for disposal other than the Florida N-Viro service, and, evaluate the viability of the BCR CleanB and/or CleanB-AC or similar processes for Palm Coast

Village of Islamorada Centralized Wastewater System
- Design, construction and operation of Village-wide Wastewater Facilities for a centralized wastewater system including low pressure and vacuum collection systems, vacuum pump stations, lift stations, master pump stations and transmission lines
- Preliminary assessment of reuse potential on Upper Matecumbe Key

Palm Coast WTP No. 2 ZLD
- 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

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.

Mr. Refling serves CPH as a Project Manager/Project Designer. His qualifications include extensive experience in the planning, design, and management of water, wastewater, and water reclamation/reuse systems. Mr. Refling’s broad knowledge covers water and wastewater treatment, distribution, and collection systems, effluent reuse and disposal, biosolids management, facility master planning, and water quality. He has special expertise in water reclamation process design, including advanced treatment, biological nutrient removal (BNR) and membrane bioreactor (MBR) systems. He has co-authored more than 25 articles on innovative treatment systems involving BNR, MBR, and water reclamation/reuse.

Education
M.S. in Environmental Engineering, Johns Hopkins University
B.S. in Physics, University of Wisconsin

Licenses / Certifications
Professional Engineer – FL (No. 31107)

Key Strengths
- WWTP and Advanced/Tertiary Treatment
- Water Reclamation/Reuse
- Integrated Water Resource Management
- Water/Wastewater/Reuse Master Planning
- Biosolids Stabilization/Residuals Management
Key Strengths
- Large Diameter Pressurized Pipeline Design in Urbanized Areas
- Utility System Relocations, including several projects due to FDOT roadway widening
- Water Supply, Treatment, Pumping, Storage and Distribution
- Wastewater Collection, Treatment and Pumping
- Reclaimed Water Storage, Pumping and Distribution
- Utility Systems Hydraulic Modeling

Project Engineer

Mr. Mahler serves CPH as Senior Vice President and Branch Manager of the Orlando Office. He is a Project Manager/Project Engineer for municipal and private clients. Mr. Mahler has been involved with numerous utility system installation, rehabilitation and relocation projects for both municipal and private clients. He has also been involved with the evaluation of utility systems from small service lines to major collection and transmission systems. In addition, he specializes in relocation of existing utilities associated with roadway projects. He has also been involved with land development and roadway design and permitting for private clients.

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

Licenses / Certifications
Professional Engineer - FL (No. 56875)

Similar Project Experience

S.R. 50 Utility Relocation Project (Phase 1, 2, and 3)
- Improvements to over 13 miles of the water distribution system and wastewater collection and transmission system within the SR-50 Corridor, which is being expanded from 4-lanes to 6-lanes, including building new facilities and the removal of facilities in conflict with the FDOT roadway design
- Installation of 5.5 miles of 8" diameter water main and 5.7 miles of 4", 8", 12", 16", and 24" diameter water main along SR-50 from West SR-436 to Old Cheney Road

Osceloa Parkway- Toho Water Authority
- 10,900 LF of 24" ductile iron water main with multiple service connections, one jack and bore and one directional drill
- The County designed the roadway improvements to go from a 2-lane road to a 4-lane road
- New 24-inch water main installed as a replacement to an existing water main
- The new water main was designed to be constructed along active travel lanes requiring significant MOT.

Martin Luther King Reclaimed Water Main
- Reclaimed water main service for Toho Water Authority’s new Administration facility on Martin Luther King Blvd (MLK) with a new 12" service line
- Project included a 110 LF of 8" HDPE pipe installed by directional bore.
- The project included two separate segments; the first segment included a connection to TWA’s existing 30” reclaimed water main (RWM) located on the Kissimmee Airport Property and extended 1,500 LF to connect to entire system.
- The second phase was 650 LF which required a significant open cut of John Young Parkway and work within a congested right of way.

International Dr. and Universal Blvd. – Orange County
- 10,100 LF of 24-inch force main
- Approximately 2,300 LF of 24-inch force main were installed by directional drill and 330 LF of 42-inch jack and bore were needed
- Project included jack and bore, and directional drill of the force main

North Side Area Reclaimed Water Main Extensions- City of Ocoee
- Phase I includes the installation of approximately 8,100 feet of 16” polyvinyl chloride (PVC) reclaimed water main by open cut and approximately 888 LF of 18” high density polyethylene (HDPE) reclaimed water main by directional drill, 555 LF of 8” PVC and 68 LF of 6” HDPE reclaimed water main, connection to an existing 16-inch reclaimed water main, valves, fittings, pressure testing, and restoration
- Phase II of the project is in two segments and will includes approximately 1,730 LF of 16-inch, 3,676 LF of 12-inch, 8 LF of 8-inch and 71 LF of 6-inch PVC reclaimed water main by open cut, connections to existing reclaimed water mains, valves, fittings, pressure testing, and restoration.

Highland Avenue Gravity Sewer and Water Main Replacement Project
- Replacement of approximately 9,500 ft. each of aged gravity sewer and small diameter water main
- Also included a sewer and roadway repair
- Over 240 service connections within the projects residential streets that required both new water and sewer connections
- Responsible for the reconstruction of existing streets, including construction of stormwater inlets and storm sewers, replacement of sanitary sewers and laterals, installation of new water mains, construction of new concrete curb, and roadway reconstruction.

Lake Underhill Utility Relocations
- Relocation or replacement of 1,810 LF of 16" PVC force main; and, 1,650 LF of 20"; 650 LF of 12" and 400 LF of 8" ductile iron water mains, plus smaller segments of water and force main connecting to the existing water mains and force mains
- In addition, there was approximately 2,300 LF of 8" gravity main replacement and installation of a temporary bypass system for a 740 LF segment of the 12" water main
- Within FDOT and Orange County right-of-way
ROBERTO “ROBBIE” GONZALEZ, P.E.

Project Engineer

22 Total Years of Experience • 4 Years with CPH

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: Aeration and Odor Control; Ozone; Granular Activated Carbon; Ion-Exchange; Lime-Softening; Coagulation; Filtration; Reverse Osmosis; Disinfection; and Stabilization/Corrosion Control.

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

Licenses / Certifications
Professional Engineer – FL (No. 56875)

Key Strengths
• Desktop, Pile 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

Similar Project Experience

Palm Coast WTP No. 2 ZLD
• 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.

Winter Springs Potable Water System Treatment Upgrades Meet Stage 2 DBP Compliance
• Developed Treatment Alternative Evaluation to select cost effective process to Meet Stage 2 DBP Compliance for 5-mgd groundwater treatment plant
• Conducted pilot-scale ion-exchange testing to confirm design criteria assumptions for TOC removal and regeneration salt impacts to reclaimed water system.
• Prepared Preliminary Design Report (PDR) which included site layout, process flow diagram and I&C SCADA for anionic ion-exchange system to optimize treatment DBP control and will be master planned to include Forced Draft Aeration to remove H2S.

JEA – Otter Run Water Treatment Plant Renewal & Replacement
• CPH is providing engineering services to JEA for the Otter Run Water Treatment Plant Renewal and Replacement. This work includes evaluating the existing water treatment facility and recommendations for upgrading the existing plant to include a removal and replacement of the high service pumps, above ground storage tanks, aerator, sodium hypochlorite system and the electrical equipment.
• CPH will review the site constraints, available plans, record drawing, operation manuals and research existing permits to determine the existing facility characteristics and further facility needs, CPH will be responsible for preparing a report to summarize the findings and recommendations as well as preparing a scope of work to be used in project specifications. CPH will also be responsible for preparing an Opinion of Probable Cost for the recommended upgrades.

Town of Oakland Water System Improvements Project
• The Town authorized services for the team to design, permit, bid and provide construction administration for improvements to their existing water system. The improvements were originally recommended in the master plan effort by the team previously performed for the Town. In addition, the team assisted the Town with obtaining a FDEP SRF loan for $1.973 Million to install the water system improvements
• Improvements included: 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, 350 square-foot electrical / pump building, Extensive landscape architecture to help screen the ground storage tank, Conversion of the existing passive park to an active park including future splash pad, and SCADA upgrade and Improvements.

Haines City New Mechanical Bar Screen and Grit Removal System
• Designed the installation of the new mechanical bar screen and grit removal system for the WWTF
• The new headworks will be capable of handling 6.0 MGD of influent domestic wastewater
• This project also includes architectural and roof improvements to the WWTF administration building, as well as laser scan surveying services of the site.

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.
Mr. Breitenstein serves the firm of CPH as Vice President/Associate and Project Manager/Engineer. He has over 26 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

**Licenses / Certifications**
Professional Engineer – FL (No. 57402)

**Key Strengths**
- Wastewater treatment plants
- Wastewater master plans
- Water Treatment Plants
- Water Master Plans
- Process piping optimization and design
- FDEP wastewater facilities permitting
- Process pumping systems
- Collection/Transmission systems
- Lift station design and optimization
- Well Design

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**SCOTT A. BREITENSTEIN, P.E.**

**Project Engineer**

26 Total Years of Experience - 17 Years with CPH

**Similar Project Experience**

**City of Lake Alfred Water Facilities Plans**
- The Water Facility Plan was prepared to provide recommendations on improvements needed for the water distribution system
- The Facility Plan was used to obtain SRF Loans from the Florida Department of Environmental Protection
- Developed a 20 year master plan and provided the associated capital improvement plan(s) for the recommended projects

**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
- Extensive landscape architecture to help screen the ground storage tank and conversion of the existing passive park to an active park including future splash pad
- In addition, the team assisted the Town with obtaining a FDEP SRF loan for $1.973 Million to install the water system improvements.

**Haines City New Water Treatment System Upgrades for Control of Disinfection By-Products (DBPs)**
- CPH provided complete design and construction management services for treatment system upgrades at WTP No. 1 and WTP No. 2 to control DBPs for compliance with Stage 2 DBP requirements.
- The goal of the Project is to control DBPs to below a target goal of 60 µg/L for trihalomethanes (THMs) and 40 µg/L for haloacetic acids (HAAs).
- The system upgrades consist of the following components: 1) Construct 3,600 gpm Ion-Exchange (IEX) Treatment System to Remove Total Organic Carbon (TOC); 2) Install Mixers in two (2) 500,000 gallon Ground Storage Tanks (GST) to Reduce On-Site Water Age; 3) Refurbish and Replace Chemical Feed Systems to Control Chlorine Dose Rates and 4) Enhance SCADA Instrumentation & Control Improvements to Balance Distribution System Water Quality.

**Grand Island Shores Booster Station**
- Provided design, permitting, bidding, and construction administration (CA) services for both phases of this project
- Phase I was a booster station design that included a 500,000 gallon reinforce concrete ground storage tank, two 1,500 gallon per minute split-case high service pumps, with 75 horsepower variable frequency drive (VFD) motors, disinfection system that includes two sodium hypochlorite pumps mounted on a skid and solution tanks, and a 400 kilowatt diesel driven generator for emergency power.
- Phase II included two wells with 1,000 gpm submersible pumps, 800+ linear feet of 12-inch raw water mains, meters, fencing, cascade aeration, a pre-engineered chemical building, and fluoridation system

**City of Eustis Master Water Plan**
- Developed a 20 year master water plan to assist the City in planning for their needs related to treatment facilities and upgrades and extensions to the water supply, treatment and distribution systems.
- The plan provides the associated capital improvement plan(s) for the recommended projects
- Prepared to ensure that construction of water facilities would serve existing and new developments for at least a 10-year planning period
- The plan was used to respond to the requirements of the Wekiva Act.

**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
JAMES “JAY” R. MORRIS, JR., P.E.

Project Engineer

17 Total Years of Experience • 12 Years with CPH

Similar Project Experience

I-4 Ultimate Utility Relocation Projects for City of Maitland, Orange County Utilities, Town of Eatonville, City of Altamonte Springs, City of Maitland, and the City of Winter Springs.
• Project Manager for client specific design review of utility relocation plans and/or construction inspections of 21 miles of roadway widening.
• Utility relocations included water mains, gravity sewer, force mains installed by methods such as open cut, horizontal directional drill, and jack and bore. Gravity sewer evaluation and CIPP inspections were also provided.

I-4 Ultimate Utility Relocation Project for City of Orlando
• CPH is providing all design review and construction oversight on behalf of the City of Orlando Wastewater for all system infrastructure impacts associated with the FDOT Ultimate I-4 Project.
• Tasks include serving as the City of Orlando’s representative for reviewing and approving all relocation plans and project specifications prepared by SGL’s design team.
• Additionally, responsible for shop drawing review and approval, permit review, review of all supporting documents, review as-built, reply to RFI’s on the City’s behalf, working with SGL to provide solutions to any conflicts during construction and provide full time CEI services.

S.R. 50 Utility Relocation Project (Phase 1, 2, and 3)
• Improvements to over 13 miles of the water distribution system and wastewater collection and transmission system within the SR-50 Corridor, which is being expanded from 4-lanes to 6-lanes, including building new facilities and the removal of facilities in conflict with the FDOT roadway design
• Installation of 5.5 miles of 8, 12, 16, 20 and 24-inch diameter water main and 7.7 miles of 4, 8, 12, 16, 20 and 30-inch diameter force main along SR-50 from West SR-436 to Old Cheney Road.
• Served as Project Engineer and responsibilities included design, permitting, and construction administration.

Osceola Parkway- Toho Water Authority
• 10,900 LF of 24” ductile iron water main with multiple service connections, one jack and bore and one directional drill
• The County designed the roadway improvements to go from a 2-lane road to a 4-lane road.
• New 24-inch water main installed as a replacement to an existing water main
• The new water main was designed to be constructed along active travel lanes requiring significant MOT.
• Served as Project Engineer and responsibilities included design, permitting, and construction administration.

Boggy Creek Road Intersection Utility Relocation Project
• This project generally consisted of the installation of 2,150 LF of 16-inch ductile iron water main and the relocation of 2,000 LF of PVC 16-inch force main due to conflicts with a roadway intersection improvement project.
• This project also included removal of an existing 16-inch force main and smaller water and sewer mains.
• Served as Project Manager/Engineer of Record. Responsibilities included design, permitting, and construction administration.

International Dr. and Universal Blvd.
• 10,100 LF of 24-inch force main
• Responsible for design, permitting and construction administration for approx. 2,300 LF of 24-inch force main were installed by directional drill and 330 LF of 42-inch jack and bore were needed to facilitate this installation
• Project is adjacent to the high tourism areas including the Orange County Convention Center and along busy International Drive and crossing limited access FDOT right-of-way.

Lake Underhill Utility Relocations
• Project Engineer responsible for design, permitting, and construction administration for the relocation or replacement of 1,810 lineal feet of 16” PVC force main; and, 1,650 lineal feet of 20”; 650 lineal feet of 12” and 400 lineal feet of 8” ductile iron water mains, plus smaller segments of water and force main connecting to the existing water mains and force mains
• In addition, there was approximately 2,300 lineal feet of 8” gravity main replacement and installation of a temporary bypass system for a 740 lineal foot segment of the 12” water main
• Within FDOT and Orange County right-of-way
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

**Licenses / Certifications**
Professional Engineer – FL (No. 32928)

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

**Similar Project Experience**

### Winter Springs Water Treatment Plant
- Our services for this project included design of water plant improvements consisting of the addition of high service pumps at water plants 2 and 3, a new 2,400 GPM well at water plant 3, and associated piping and electrical work.
- This improvement not only upgraded the level of service, but also provided capacity for future connections.

### Winter Springs East Water Reclamation Facility
- Winter Springs East purchased the assets of Seminole Utilities in 1990. CPH has been involved in the project to upgrade this facility to a capacity of 2.012 MGD meeting Class I Reliability Criteria, and providing full public access quality effluent.
- CPH designed, permitted and assisted in numerous projects for this facility including: 1) Disposing of reclaimed water on the adjacent Tuscanwilla Country Club; 2) Adding high level disinfection in 1995; 3) Adding a separate sludge digester; 4) 2 million gallon GST to provide a higher grade of effluent to the reclaimed customer and added storage; 5) New transfer pump station and a new distribution pump station for the reclaimed water; 6) Replacing the aeration blowers and adding a third blower for back-up; and 7) Upgrading emergency power, providing new electrical switch gear, and providing new chlorine handling facilities.

### Winter Springs West Water Reclamation Facility
- The Winter Springs West Water Reclamation Facility is a 2.25 MGD facility that was purchased in 1984. The Facility had a single package plant at the time. CPH has been involved in the project to upgrade this Facility to a capacity of 2.25 MGD to meet Class I Reliability Criteria, and providing public access quality effluent.
- CPH services included: 1) Design; 2) Permitting; 3) Disposal of reclaimed water on the adjacent Winter Springs Golf Club, which did not have filtration capability or high level disinfection until 1986; 4) Adding a new sludge handling facility and a reject storage pond; 5) Adding a 1 million gallon GST to provide a higher grade of effluent to the reclaimed customer; 6) Adding a second package plant to provide full Class I Reliability; 7) Adding a new transfer pump and a new distribution pump station for the reclaimed water; 8) Replacement of the aeration blowers and adding a third blower for back-up; 9) Adding emergency power and later upgrading it; 10) Providing new electrical switch gear; 11) Providing new chlorine handling facilities; 12) Remodeling the office building; and 13) Expanding the lab.

### 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.
- Other work involved with the project included modifications to the plant site piping at each facility and replacement of the electrical equipment at the North plant.

### Sanford Regional Water/Wastewater/Reclaimed Master Plan and Tri-Party System
- CPH provided master planning and design services for the City of Sanford’s utility system.
- The service area and planning effort included water supply, water quality, and distribution system analysis for the water system and collection, treatment, disposal for the wastewater system, and a regional reclaimed water system.
- The ability to service the utility service area was determined based on existing population data and projections.
- CPH examined the capability of all the existing facilities and described recommended improvements over the planning period. Information from these plans was utilized to formulate the comprehensive plan utility elements.
Jerry serves CPH as a lead in construction inspection/observation services and quality control. He is a licensed utility and general contractor with over 42 years of experience in the design and construction of industrial, commercial and utility projects. With his extensive construction experience, Jerry assists CPH in development of design strategies and value engineering. He also serves as a quality control manager to ensure proposed designs are correct and constructable. Jerry is proficient at estimating, scheduling, construction means & methods and construction management.

**Education**

B.S. in Building Construction, University of Florida

**Licenses / Certifications**

Certified General Contractor – FL (No. 010771)
Certified Utility Contractor – FL (No. 051667)

**Key Strengths**

- Licensed General and Underground Utility Contractor
- Expert in conveyance systems and treatment plants
- Extensive scheduling and cost estimation expertise
- Expertise in: Commercial, Industrial, Infrastructure, Construction Management, Utility Systems, and Value Engineering

**Utilities Commission of New Smyrna Beach Biosolids Management Improvements**

- CPH is providing engineering services for the design, permitting and construction of a “New” Biosolids Dewatering System, and associated improvements at the Utilities Commission, City of New Smyrna Beach Water Reclamation Facility.

**Palm Coast Water Treatment Plant No. 3**

- CPH provided complete design and construction management services for a new water treatment facility and administration offices on a twenty-four acre campus located adjacent to US 1. CPH prepared the initial project scope, budgets, surveys, preliminary and final design, permitted the project with FDEP, FDOT, Army Corp Engineers, Flagler County, City of Palm Coast, and the St. Johns River Water Management District and provided full construction engineering and inspection Services for the project.

  - The new water system consists of the following components: 3.0 MGD Low Pressure Reverse Osmosis skids (RO 1.5 MGD), well field system to supply raw water to the Water Treatment Plant, concentrate treatment & disposal system, finished water distribution system to connect to existing distribution system

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

- CPH provided the design of improvements to the City of Sanford’s Water Treatment Plant No. 2. The improvements were part of an overall project being funded through FDEP # DW590120, to comply with the stage 2 of the Disinfection By-Products Rule.

  - Water Plant No. 2 is rated for 4.6 MGD ADF and furnishes conventional aeration and disinfection treatment prior to distribution to Sanford’s water customers.

  - The improvements were designed to remove the organics from the raw water, which were identified as precursors of disinfection by-products (TTHM’s).

**Sanford North WRF - BNR Improvements**

- Master Lift Station Rehabilitation and headworks modifications to accommodate the new BNR system hydraulically and to minimize oxygenation prior to the influent entering the primary anoxic zone

  - “Dynamic” influent analysis

  - The interior of each of the four (4) “existing” biological treatment trains (aeration basins) will be reconfigured to accommodate the new BNR sequence: Primary Anoxic Basins No. 1 and No. 2, IFAS (Hybas) Basin, De-Oxygenation Basin, Secondary (Post) Anoxic Basin and Reaeration Basin


**Palm Coast Cigar Lake Pumping Station**

- Ultimate capacity is designed for 10 MGD ADF

  - Consists of a 40’ x 76’ building including a pump room, an electrical room, and a chemical feed room

  - Included in the pump room are three horizontal split case centrifugal pumps, tumble disk filter system, an air compressor, and a vacuum system for the pump priming

  - Chemical feed room has two 500 gallon storage tanks for sodium hypochlorite and a chemical feed pump skid

**Northern Forcemain and Southern Forcemain Project- Key Largo Wastewater Treatment District**

- Project Engineer for an abandoned 30-inch water main existed within the US-1 corridor, KLWTD was able to obtain the rights to utilize this pipe as their corridor for the forcemain

  - 4,503 l.f. of 4-inch PVC, 4,156 l.f. of 6-inch PVC, 19,846 l.f. of 8-inch PVC, 11,750 l.f. of 10” PVC, 573 l.f. of 10-inch HDPE (slipline), 13,198 l.f. of 12-inch HDPE (slipline), 6,231 l.f. of 14-inch HDPE (slipline), 9,825 l.f. of 16” PVC, and 1,085 l.f. of 18-inch HDPE (slipline) forcemain

  - Project included work within FDOT right of way, an aerial pipe crossing on a bridge, and directional drill of the force main/water main
4. LOCATION

CPH has ten (10) offices in the State of Florida with support of approximately 240 personnel throughout the company to assist in the projects for the UCNSB. The UCNSB will have the direct commitment of the CPH DeLand office located at 101 N. Woodland Blvd., Suite 305, DeLand, FL 32720, supported by staff members in Sanford and Palm Coast. The DeLand office is staffed with employees that include registered personnel, administrative staff, and owners of the firm to accomplish the projects on time and within budget.

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<tr>
<th>Office Location</th>
<th>Approximate Distance From UCNSB Offices</th>
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<tr>
<td>CPH DeLand</td>
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<td>Support Offices</td>
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<tr>
<td>CPH Sanford</td>
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5. FINANCIAL STABILITY

CPH has been in successful operation in Florida since 1981 as a corporation, and was part of a predecessor firm in the area dating back to the 1960’s. Throughout this entire period our firm has been involved in design and development of public and private projects in Florida. In that time period, we are very proud of our client relationships and have never been terminated from a contract. Further, CPH has been in successful operation for 36 years and has never had any license sanctions or bankruptcies or major litigation. CPH has the resources, human and financial, to commit to this contract for the UCNSB, and has personnel, equipment, and facilities to successfully provide services under the Continuing Professional Services Contract.

*CPH has the knowledge, expertise, and financial strength to perform this contract for the UCNSB.*

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<th>FORM OF BUSINESS</th>
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SunTrust  
Contact Person: Lisa Johnson  
200 S. Orange Avenue, Mail Code 2063, Orlando, FL 32801  
Phone: 407.237.4552  
Merrill Lynch  
Contact Person: Edward Wojcik  
400 Winter Park Avenue South, Suite 300, Winter Park, FL 32789  
Phone: 407.646.6768 |
| CREDIT RATINGS | Dunn & Bradstreet Account No. 058232349  
Tax ID# 59-2068806 |
| INSURANCE REFERENCES | The Professional Liability, General Liability, Automobile Liability, and Umbrella Liability carrier is:  
Jackson, Collinsworth, & Johnson Insurance Agency, LLC.  
Contact: Mark Jackson  
Phone: 321.445.1860  
CPH maintains Professional Liability Coverage for all projects.  
The Workers Compensation and Employers’ Liability carrier is:  
Willis of Florida, Inc.  
Contact: Steve Preston  
Phone: 407.562.2500 |
| WORKERS COMPENSATION RATE | .79 |
6. INSURANCE

CERTIFICATE OF LIABILITY INSURANCE

CPCN-1

DATE (MM/DD/YYYY) 03/01/2018

INSURER A: Continental Casualty Company
INSURER B: Valley Forge Insurance Company
INSURER C: Transportation Insurance
INSURER D: RLI Insurance Company

COVERAGES

This is to certify that the policies of insurance listed below have been issued to the named above for the policy period indicated. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies. Limits shown may have been reduced by paid claims.

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Certificate Holder:

For Proposal Purposes

CANCELLATION

Should any of the above described policies be cancelled before the expiration date therefor, notice will be delivered in accordance with the policy provisions.

Authorized Representative:

Mark E. Jackson

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The ACORD name and logo are registered marks of ACORD
7. OCCUPATIONAL LICENSE

Volusia County Business Tax Receipt

2017/2018

Issued pursuant to F.S. 205 and Volusia County Code of Ordinances Chapter 114-1 by:
Volusia County Revenue Division - 123 W Indiana Ave, Room 103, DeLand, FL 32720 - (386) 736-5938

Account #: 199208240001 Expires: September 30, 2018
Business Location: 101 N WOODLAND BLVD

Business Name: CPH INC
Owner Name: DAVID GIERACH
Mailing Address: 500 W FULTON ST
SANFORD, FL 32771

<table>
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- This receipt indicates payment of a tax, which is levied for the privilege of doing the type(s) of business listed above within Volusia County. This receipt is non-regulatory in nature and is not meant to be a certification of the holder's ability to perform the service for which he is registered. This receipt also does not indicate that the business is legal or that it is in compliance with State or local laws and regulations.
- The business must meet all County and/or Municipality planning and zoning requirements or this Business Tax Receipt may be revoked and all taxes paid would be forfeited.
- The information contained on this Business Tax Receipt must be kept up to date. Contact the Volusia County Revenue Division for instructions on making changes to your account.

THIS PORTION OF THE BUSINESS TAX RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS.

Volusia County Business Tax Receipt
Revenue Division - 123 W Indiana Ave, Room 103, DeLand, FL 32720 - (386) 736-5938

DATE PAID: 07/18/2017
RECEIPT #: Lockbox-16-00084086
TOTAL TAX: 30.00
PENALTY: 0.00
TOTAL PAID: 30.00

Account #: 199208240001 Expires: September 30, 2018
Business Location: 101 N WOODLAND BLVD

PLEASE DETACH THIS PORTION OF THE BUSINESS TAX RECEIPT FOR YOUR RECORDS.
8. REFERENCES

CITY OF SANFORD
Mr. Bilal Iftikhar, P.E., Public Works Director
P.O. Box 1788, Sanford, FL 32772-1788
Phone: 407.688.5000 Ext. 5085, E-Mail: bilal.iftikhar@sanfordfl.gov

CPH has been providing continuing design and construction services to the City of Sanford since 1958. Projects have included water, wastewater, stormwater, roadway, parks, and trails. The team has provided services that include engineering, landscape architecture, architecture, planning, surveying, environmental science, and construction administration. Some of the most recent projects for the City include:

**Sanford South Water Resource Center** - CPH provided design and construction of the new Sanford South Water Resource Center. The center uses energy efficient treatment processes and cutting-edge technologies to produce a high quality effluent, reclaimed water to be distributed throughout the City of Sanford service area (150 miles of distribution piping). Construction includes the following: influent structure with odor control system, energy efficient oxidation ditch biological treatment system, office/laboratory building, disk filtration of the secondary effluent, sodium hypochlorite storage and handling facilities, chlorine contact chamber, effluent transfer pump station, solids handling facility and Class A sludge treatment system, reclaimed water distribution pump station, City-wide SCADA control system, 3 MG reclaimed water ground storage tank, 2 MG reject water ground storage tank, internal roadways, fencing, landscaping, yard piping, and storm water management system.
Sanford North Wastewater Treatment Plant Overview - CPH has been involved in the planning, design and construction phases of a $40 million improvement program for the City of Sanford. CPH has provided the design and construction services for the City’s Sanford North Water Reclamation Facility dating back to the 1960’s. Our team has been involved with numerous studies, pilot testing, modeling, design, permitting, and construction activities at the City’s North Wastewater Plant. The design of the original plant includes an advanced secondary system with the capacity to treat 7.3 MGD and will be upgraded to an Advanced Wastewater Treatment Plant (AWTP) for nutrient removal to meet total maximum daily loads for the St. Johns River. Through the years, our team has assisted the City with funding and design of improvements that most recently include the Augmentation System, Actiflo pre-treatment, and the sludge management system.

Sanford North WRF Augmentation System Actiflo - CPH provided design and construction services to assist the City of Sanford in improving the tertiary treatment capabilities of their Sanford North Water Reclamation Facility to provide a higher quality effluent - reclaimed water- product being distributed throughout the City or wet weather discharge to the St. Johns River. This project involved the installation of two 4.0 MGD ACTIFLO® Treatment Units, an above ground secondary effluent pump station, a cast-in-place concrete influent structure including a mechanical bar screen and compactor system, a chemical feed system consisting of three chemical storage tanks, chemical pumping skids and a prefabricated chemical feed system building, and all associated equipment, piping and appurtenances for the above components.

Sanford North WRF - Biological Nutrient Removal Expansion (BNR) - The Sanford North WRF utilizes a seasonal (wet weather) discharge to Lake Monroe/St. Johns River, limited to 1.0 MGD AADF, during periods when the reclaimed water production exceeds the reclaimed water demand in the distribution system. In 2009, the State of Florida developed Total Maximum Daily Loads (TMDL) for the segment of the St. Johns River in Sanford, EPA began developing Numeric Nutrient Limits, and the Wekiva Rule had been developed related to TN concentrations in reclaimed water applied in the Study Area. FDEP eventually issued an Administrative Order stating that the City could still use the seasonal discharge system however, the mass loadings of Total Nitrogen and Total Phosphorus could not exceed 19,342 lb/yr and 2,345 lb/yr, respectively. These loadings correlated to concentrations of 6.35 mg TN /L and 0.77 mg TP/L at the AADF capacity of the seasonal discharge system. This mandate would require significant nutrient reductions and require the installation of a “new” Biological Nutrient Removal (BNR) system at the Sanford North WRF. The City selected CPH to evaluate the nutrient removal technologies available to meet the low TN and TP concentrations, develop a methodology to evaluate the technologies and select and design, for implementation, a cost-effective, energy-efficient and reliable BNR treatment system to meet these mandated requirements in the Administrative Order.

Mayfair Water Treatment Plant - Construction of a 2500 SF Reclaimed Water Operations Building complete with three (3) 100+ H.P. high service horizontal split case pumps, an overhead monorail and hoist system for moving pumps; a sodium hypochlorite storage and feed system consisting of two (2) 3000 gallon storage tanks and three (3) control skids pump modules (skids); and an electrical and control equipment room. The building is constructed of split face block and has a seamless metal roof.

City of Sanford’s Water Treatment Plant No. 2 – Disinfection By-Product Reduction Improvements - CPH is currently completing the design of improvements to the City of Sanford’s Water Treatment Plant #2 are part of an overall project being funded through FDEP # DW590120, to comply with the stage 2 of the Disinfection By-Products Rule. Water Plant No. 2 is rated for 4.6 MGD ADF and currently furnishes conventional aeration and disinfection treatment prior to distribution to Sanford’s water customers. The proposed improvements have been designed to remove the organics from the raw water which have been identified as precursors of disinfection by-products (TTHM’s).
Sanford Reclaimed Water System - CPH has been involved in the planning, design and construction phases of a $40 million improvement program for the City of Sanford. CPH launched extensive investigations into disposal sites and performed the following services: set up irrigation schedules, evaluation of the most cost-effective areas for immediate expansions, design of the agricultural reuse site, extensive environmental specialist work (issues included wetlands, endangered species protection and water quality considerations), and installation of a SCADA system for the reclaimed water and wastewater systems. The overall improvement program includes: sludge treatment, construction of facilities to remove the effluent from the lake via a major water reuse program, pumping and transmission, irrigation systems for golf courses, city parks, residential irrigation and a 2,000-acre multi-purpose agricultural parcel, stormwater system was designed for the 2,000-acre disposal facility, access road improvements, and water lines and force mains.

Country Club Road Utilities Relocation - CPH provided engineering services for the City of Sanford with the final design of SR-417, Section 2, for utility relocations. A major 24-inch water main and a 12-inch force main existed along the CR-46A corridor. These utilities had to be relocated in order to allow de-mucking along CR-46A near the proposed SR-417 overpass. The 24-inch water main was rerouted from CR-46A to Country Club Road, then east on Country Club Road to Old Lake Mary Road, then south on to CR-46A to connect back to the existing water main. The 12-inch force main was also relocated on Country Club Road, paralleling the water main and Old Lake Mary Road to the existing 12-inch force main at the Old Lake Mary Road/CR-46A intersection.

Storm Sewer Cleaning and Lining - CPH surveyed existing culvert systems in downtown Sanford and developed construction plans and specifications for the cleaning, video inspecting and lining with cured in place pipe existing storm sewer pipe in downtown Sanford. The culvert was located in parking lots and under buildings in the downtown area and ranged in size from 15-inch to 42-inch x 53-inch (+/-) brick culvert. CPH assisted the City in securing funding for the project under the State Revolving Fund (SRF) loan program. The Cured in Place Pipe (CIPP) consisted of woven felt material impregnated with resin and installed using heated water to activate the resin within the material.

Pipe Bursting of Potable Water Mains Using Pre-Chlorinated Pipe - CPH has provided construction phase services to the City of Sanford for the Pipe Bursting of Potable Water Mains Using Pre-Chlorinated Pipe project. The project consisted of bursting approximately 17,500 LF of 4-inch water main and approximately 23,000 LF of 6-inch water main within 4 different residential neighborhoods in Sanford. The project was a federal economic stimulus project funded under the State Revolving Fund Loan program administered through the Florida Department of Environmental Protection (FDEP) using American Recovery and Reinvestment Act (ARRA) fund. The construction phase services included inspections, conducting labor standards interviews during construction for documentation of compliance with Davis Bacon prevailing wage requirements, preparing monthly Davis Bacon compliance certifications, and review of the weekly certified payrolls for compliance with prevailing wage requirements based on classifications of the workers, hours worked on the project, overtime pay, and other fringe benefits as applicable. Additionally, CPH reviewed payment applications, prepared change orders, and prepared disbursement requests for the SRF funding.

Water Main Looping Construction - CPH provided survey, design, permitting (including environmental and FDOT), bidding, and construction phase services for the project for the City of Sanford. The Project consists of construction of new potable water transmission main at six locations throughout the City in order to complete looping of the water distribution system. The construction included over 9,800 LF open cut construction of new water main (8”-12”) and approximately 2,100 LF of directional drill construction of 8” and 10” mains.
Fort Mellon Lift Station - This project consisted of the demolition and removal of an existing sewage lift station that age and population growth had made incapable of meeting the demands for the area it served and building in its place a new facility that would meet current and future demands with minimal maintenance. One of the demands of the new design and construction was to maintain operation of the existing facility until the new lift station was ready for service. In addition, particular attention was also directed to making the finished project blend into the surrounding area as the site was located in one of the City’s most highly visible lakefront public parks. The major components of this project consisted of a 12 foot diameter wetwell, 24 feet in depth, three variable speed pumps, 35 H.P. each and all associated electrical, controls and instrumentation systems. Appurtenances to the lift station were a meter vault, site fencing and landscaping. In addition to the lift station, associated work included the installation of 1200 feet of 16-inch forcemain, air release valves, removal and restoration of affected park lands, sidewalks and roadways, and full maintenance of the pumping facilities during the construction of the new facility and the demolition of the old lift station structure to provide uninterrupted service to the community.

Performance Period: Since 1958
CITY OF PALM COAST

Mr. Richard Adams, Public Works Director
2 Utility Dr., Palm Coast, FL 32137
Phone: 386.986.2351, E-Mail: radams@ci.palm-coast.fl.us

CPH has been providing continuing design and construction services to the City of Palm Coast since 1998. Projects have included water, wastewater, stormwater, roadway, parks, and trails. The team has provided services that include engineering, landscape architecture, architecture, planning, surveying, environmental science, and construction administration. Some of the most recent projects for the City include:

Palm Coast Water Treatment Plant No. 3 - CPH provided complete design and construction management services for a new water treatment facility and administration offices on a twenty-four acre campus located adjacent to US 1. CPH prepared the initial project scope, budgets, surveys, preliminary and final design, permitted the project with FDEP, FDOT, Army Corp Engineers, Flagler County, City of Palm Coast, and the St. Johns River Water Management District and provided full construction engineering and inspection Services for the project. The new water system consists of the following components: 3.0 MGD Low Pressure Reverse Osmosis skids (RO 1.5 MGD), well field system to supply raw water to the Water Treatment Plant, concentrate treatment & disposal system, finished water distribution system to connect to existing distribution system.

Palm Coast Wastewater Treatment Facility Expansion and Upgrades - The City of Palm Coast Wastewater Treatment Facility, a 4 MGD facility, was acquired in October 2003 from Florida Water Services, Inc. The facility consisted of: Two 2 MGD oxidation ditches for biological treat-ment of wastewater, Four 65-foot circular clarifiers for separation of suspended solids from oxidation ditches, Two chlorine contact chambers for disinfection of the clarified effluent, Effluent transfer pump station. CPH provided services to expand the facility from 4 MGD to 6.83 MGD. Additionally, CPH provided services to upgrade the treatment from secondary to advanced secondary standards to meet the FDEP public access irrigation requirements. This allows the City to send reclaimed water to public access reuse sites and residential/commercial irrigation systems.
City of Palm Coast Biosolids, Reclaimed Water and Aerobic Digestion Improvements - This project involved the design, permitting, and construction management for the replacement of the City’s existing gravity belt thickener, installation of a new digester, and installation of a new reclaimed water pumping station at the City’s existing Wastewater Treatment Facility (WWTF No. 1). These upgrades were needed due to tremendous residential growth the City had experienced. The City realized that the Wastewater Treatment Facility’s current practice of hauling liquid sludge would soon become too costly, as land becomes hard to find and more stringent rules are implemented. The design goal was to achieve a higher percent of dewatered solids than the current process there by reducing volume. This was accomplished by utilizing a centrifuge to process the biosolids and then transport them to the N-Viro Facility for processing into a Class AA product. The facility’s aerobic digesters were undersized and so new digesters were added. CPH had recently designed and supervised construction to upgraded the WWTF to produce advanced secondary effluent, and construction of several reclaimed watermains to supply reclaimed water throughout the City. The installation of the reclaimed water pumping station provides the pumping capacity needed to deliver the reclaimed water to new reuse sites.

City of Palm Coast WRF No. 2 MBR BNR - The Palm Coast WRF No. 2 will utilize the flat panel MBR process in conjunction with anaerobic, pre-anoxic, nitrification and post-anoxic biological processes to achieve the advanced wastewater treatment standards. The MBR process requires a much smaller footprint than that of a conventional 5-stage Bardenpho process utilizing re-aeration, secondary clarifier and tertiary filtration following the biological processes. Basically, a single MBR process tank replaces the re-aeration, secondary clarifier and tertiary filtration processes. The design involves using fine bubble diffusers for the aeration process.

Belle Terre Parkway Utility Relocation Improvements - This project which is currently in the design phase is for the relocation of existing water and sewer lines which are in conflict with the proposed widening of Belle Terre Parkway. This work will include approximately four miles of utilities consisting of a 20-inch water main and 16-inch force main, and all the interconnects between the new main lines and the existing local distribution/transmission lines which serve the local community. This project is especially difficult due to the limited right of way and conflicts with the extensive drainage collection system required for the road improvements.

Palm Coast Well Field - CPH has provided design, permitting and construction administrative services for shallow aquifer wells for the City of Palm Coast. The wells fields furnish raw water to the City’s Water Plant 3 a Low Pressure Reverse Osmosis Facility. Design included drilling test wells to determine potential yields within the well field, modeling the well field potential, and developing a raw water well location plan. Permitting was through the Saint Johns River Water Management District. Each well site incorporated a future lower Floridian well also.

Old Kings Road North Reclaimed Water Main - The Old Kings Road North project improvements consisted of a 30-inch reclaimed water main that extended westerly from WWTP No. 1 to the FPL easement at the intersection of Oak Trails and Old Kings Road. The 30-inch reclaimed water main then connected to a 16-inch reclaimed water main to the North and to a 20-inch reclaimed water main to the South. The 16-inch reclaimed water main extended Northerly from the 30-inch reclaimed water main at Oak Trails and Old Kings Road along the FPL easement to the storage ponds at the Hammock Dunes Community Development District (DCDD) Creek Golf Course and the Conservatory Development. These developments then distribute the reclaimed water via individual systems to the developments. Automatic control valves operated by level controls in the individual storage lakes maintain preset levels within the lakes. The level of the lakes as well as the status of the control valves are transmitted via Remote Telemetry Units (RTU’s) to the central control center at WWTP No. 1. In addition a future 16-inch reclaimed water main was designed by CPH along Matanzas Boulevard from Old Kings
Road to US Highway No. 1 that will connect the WWTP No. 1 reclaimed water main to a future WWTP No. 2 reclaimed water main system and to future reclaimed water storage ponds for separate future developments.

**City of Palm Coast Biosolids, Reclaimed Water and Aerobic Digestion Improvements** - This project involved the design, permitting and construction management for the replacement of the City’s existing gravity belt thickener dewatering system, installation of a new digester to increase sludge digestion capabilities and installation of a new reclaimed water pumping station at the City’s existing Wastewater Treatment Facility (WWTF).

**Master Wastewater/Water Planning** - The City of Palm Coast is purchasing the Florida Water Service’s Palm Coast Utility System. CPH has assisted the City in the evaluation of the existing utility system condition and determination of the utility system valuation. CPH has also assisted the City in developing a 5-year Capital Improvement Program (CIP) of $110,000,500. The rapid growth within in the Palm Coast service area was considered when the 5-Year CIP was developed. Revenue Bonds were used to pay for the purchase and some of the capital improvements. Florida State Revolving Loan Funds will be used to pay for some of the wastewater system improvements.

**The Palm Coast 5-Year Water System Capital Improvements** - The projects include new Florida aquifer wells, raw water mains, RO water treatment plant to 6.83 MGD, RO concentrate disposal, shallow wellfield expansion, lime softening WTP improvements, R&R projects, and blanket projects.

**The Palm Coast 5-Year Wastewater System Capital Improvements** - The projects include Wastewater Treatment Plant expansion from 4.0 MGD to 6.83 MGD, master pumping station, pumping station upgrades, pumping station generators, sewage force main construction, private effluent pumping system expansion, reclaimed water mains, R&R projects and blanket projects.

**Performance Period:** Since 1998
CITY OF LAKE MARY
Ms. Jackie Sova, City Manager
100 North Country Club Road, Lake Mary, FL  32795
Phone: 407.585.1419, Fax: 407.324.3098, E-Mail: JSova@lakemaryfl.com

CPH has been providing continuing design and construction services to the City of Lake Mary since 1975. Projects have included water, wastewater, stormwater, roadway, parks, and trails. The team has provided services that include engineering, landscape architecture, architecture, planning, surveying, environmental science, and construction administration. Some of the most recent projects for the City include:

**Lake Mary Water Treatment Plant** - CPH provided design and services during construction for the addition of two new 1600 gpm water supply wells. CPH is currently providing design services for the upgrade of the water treatment plant to accommodate the new wells. The upgrades include addition of one ton chlorine chemical feed facilities, upgrades to the chlorination system, new fluoride feed facilities, addition of two new high service pumps, new raw water mains, and associated electrical and control modifications.

**Lake Mary Downtown Sanitary Sewer System Expansion** - Design and permitting for a new wastewater collection system which includes; submersible duplex pump station, 650 LF of 4” PVC forcemain, approximately 4,850 LF of gravity lines, 19 manholes, and 70 service laterals. Evaluate the existing gravity system for capacity to connect the new residential units. The project work involved working within a well-established residential neighborhood within tree lined rights-of-way of the City of Lake Mary.

**Sand Pond Road and Skyline Drive** - CPH completed the Sand Pond/Skyline roadway project for the City of Lake Mary. The 1.25-mile project consists of minor widening, turn lane improvements, safety upgrades and converting the existing 2-lane rural roadway to a 2-lane urban roadway with sidewalks on both sides. The project also included extending Skyline Drive from its current terminus approximately 1,100-ft. to Emma Oaks Trail. The design implemented recommendations identified in a previous study to eliminate roadway flooding, improve traffic flow, and improve safety along the corridor.

**Performance Period:** Since 1975
9. OTHER INFORMATION

January 13, 2017

RE: CPH, Inc.

To Whom It May Concern:

The City of Palm Coast has used the services of CPH, Inc. (CPH) since before our incorporation in 1981, and can attest to the firm’s high standards for innovative and functional designs, responsive services and a steadfast commitment to quality projects. They have designed both water and wastewater facilities throughout the City and they have provided exceptional project management services for the majority of the City’s large-scale utility projects.

CPH completed the design in 2015 for the City of Palm Coast WWTP No. 2. The WWTP No. 2 provides advanced treatment of wastewater (AWT) using the Membrane Bioreactor (MBR) technology. The process includes pre-treatment, flow equalization basins, anaerobic basins, pre-anoxic basins, aeration basins, post anoxic basins, MBR basins, disinfection basins, and sludge dewatering. The plant is rated at an initial capacity of 2.0 MGD expandable to 6.0 MGD. **CPH assisted the City in obtaining a SRF loan of $30.1 Million at an interest rate of 0.67% for the construction of the WWTF No. 2, the associated sewage force main/pump station, and the reclaimed water backup discharge system.** CPH designed and permitted a wetlands discharge system for backup and wet weather disposal along with a regional reclaimed water system serving throughout the City.

In addition to the WWTP No. 2 Improvements, CPH recently completed the Water Treatment Plant No. 2 Nanofiltration Concentrate Discharge AO Compliance Study. FDEP issued an AO requesting the Palm Coast devise alternative disposal methods replacing and terminating the existing discharge to the Royal Palm Canal. **CPH assisted the City and evaluated 12 options to develop the Zero Liquid Discharge (ZLD) process.**

Through our extensive working relationship with CPH, we have found that they have given us excellent, prompt and timely services with sensitivity to construction budgets and schedules. The City has been pleased with the efforts of CPH in all the projects they have undertaken. I have complete confidence that our experience with CPH is reflective of the level of service and satisfaction others can expect.

Should you like to discuss any of the information above please do not hesitate to contact me.

Sincerely,

Richard Adams
Utility Director
January 17, 2017

To Whom It May Concern

Re: CPH, Inc.

Dear Sir/Madam,

It is my pleasure to provide CPH, Inc. (CPH) with this letter of recommendation. Their staff is innovative, professional, reliable, resourceful and responsive. Recent projects CPH has completed include the City’s Master Water, Wastewater and Reclaimed Water Plans, Water Treatment System Upgrades for Control of Disinfection By-Products (DBPs), New Mechanical Bar Screen and Grit Removal System, Wastewater Treatment Plant Filtration System Replacement and Upgrade Project and the WWTF Administration/Operations Building Improvements. CPH has provided general civil engineering, architectural, structural, construction/CEI services, mechanical, electrical, plumbing, survey and water and wastewater utility services, and GIS.

The work for the Master Plans included evaluation of the treatment facilities, distribution system, and collect/transmission infrastructures to develop alternative recommendations to serve the City’s needs, now and into the future. CPH prepared hydraulic models to analyze the existing pressurized piping systems for the various facilities, which will help plan for expected expansion and upgrade work necessary going into the future.

CPH recently worked with the City on the design of the Ion Exchange Water Treatment Plant Project, which is currently under construction. The project included upgrades to WTP No. 1 for Disinfection By-Products, and additional operational upgrades to WTP No. 2. CPH was able to assist the City in receiving approximately $6.61 Million in capitalization grant funding from the FDEP through the SRF program, with 85% of that total being a “Principal Forgiven” amount.

City officials and staff members have been pleased with the cost, quality, timeliness and responsiveness from the principals and staff members of CPH. They have worked well as an extension of the City’s staff. We highly recommend CPH for any engineering services you might require.

Letter of Recommendation
Re: CPH, Inc.
Page 2

Should have any specific questions about the information above, please do not hesitate to contact me.

Sincerely,

CITY OF HAINES CITY

Michael Stripling
Utilities Director

MS:js
January 20, 2017

Re: CPH, Inc.

To Whom-It-May-Concern:

It is my pleasure to provide CPH, Inc. (CPH) with this letter of recommendation. CPH provided engineering services to JEA for the Ponce de Leon Water Treatment Plant (WTP) Pump Building and Reservoir Replacement project, which was constructed in 2016.

The Ponce De Leon WTP is located near the Atlantic Ocean in St. Johns County; its above-grade metallic tank, equipment and piping had subsequently corroded due to the marine environment. The facility had a permitted capacity of 0.865 MGD and the project included replacement of a 500,000 gallon ground storage tank with aerator, three high service pumps and a new sodium hypochlorite system along with a new building and associated piping and electrical equipment. The new equipment was specified with materials suitable for the marine environment.

CPH has also developed a Project Definition, which included the background, justification, scope, cost, and schedule for upgrading the existing Otter Run Water Treatment Plant in Nassau County. CPH is currently designing the plant's upgrades, including removal and replacement of the high service pumps, above-ground storage tanks, aerator, sodium hypochlorite system, building and electrical equipment.

The CPH team is professional, innovative, resourceful, and responsive. Their designs have been efficient, effective and delivered on-time. JEA welcomes the opportunity to work with CPH on future projects.

Please feel free to contact me at (904) 665-4028 or vuhx@jea.com if you would like to discuss any of the above information.

Sincerely,

Hai X. Vu
Manager, Water Plants Engineering and Construction
January 13, 2017

City of Sanford/City Hall
300 North Park Avenue
Sanford, FL 32771-1244

To Whom It May Concern:

It is my pleasure to provide CPH, Inc. (CPH) with this letter of recommendation. CPH has worked with the City of Sanford since 1958 and has retained the distinction of being the City’s consulting utility engineer. The staff is innovative, professional, reliable, resourceful, and responsive. CPH has worked alongside the City in anticipating future growth and building the utility infrastructure to accommodate that growth. They have designed both water and wastewater facilities throughout the City and they have provided exceptional project management services for the majority of the City’s large-scale utility projects. In addition, CPH has provided us with extensive consulting and engineering services for projects that include landscape architecture, roadway, streetscape design, drainage, recreational facility projects and many other projects involving our municipal buildings and facilities.

CPH completed the design in 2016 of the Sanford North WRF - Biological Nutrient Removal Expansion (BNR) project. The Sanford North WRF IFAS BNR improvements consisted of the following infrastructure: (1) new RAS/WAS pumping systems; (2) primary anoxic basins (2-stage); (3) wastewater step-feed process; (4) aerobic basins; (5) deoxygenation basins; (6) secondary anoxic basins; (7) reaeration basins; (8) turbo blowers (5 units); (9) chemical and supplemental carbon storage/handling facilities; (10) aerobic digestion system improvements; (11) internal recycle systems; and (12) various buildings. The facility meets all TN and TP mandated effluent limitations.

CPH also recently provided design improvements to the City of Sanford’s Water Treatment Plant No. 2. The improvements were designed to remove the organics from the raw water, which were identified as precursors of disinfection by-products (THM’s). The project was constructed in 2014. The improvements were part of an overall project being funded through FDEP # DW590120, to comply with the stage 2 of the Disinfection By-Products Rule.

CPH provided master planning and design services for the City of Sanford’s regional water/wastewater/reclaimed master plan. CPH was pivotal in forming the business model for the regional reclaimed system, and drafting the agreements and reaching consensus among the parties.

In addition, CPH upgraded biosolids treatment to include thermo-aerobic system followed by solar dryer to produce a marketable product. This is a new cost-effective biosolids disposal method that reduces cost and potentially increases revenue.

City officials and staff members have been pleased with the cost, quality, timeliness and responsiveness from the principals and staff members of CPH. The City of Sanford has a strong commitment to CPH and will continue to rely on the firm as the City continues to grow. We highly recommend CPH for any engineering services you might require.

Should have any specific questions about the information above please do not hesitate to contact me.

Sincerely,

Bish Mirchkar, P.E./Public Works Director
Addendum No 1 Received By:

[Signature/Authorized Company Official] [04/02/2018]

Signature/Authorized Company Official Date

Rocco R. Nasso, P.E., Vice President
Printed Name

Submit this signed form with your proposal on April 5th.