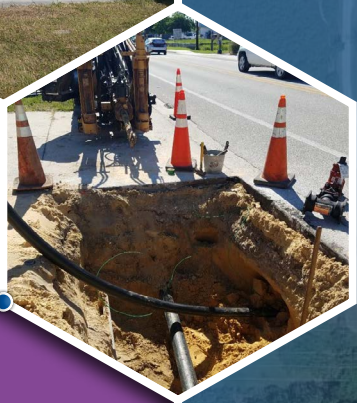
Statement of Qualifications

Professional Engineering Services for Large Utilities Capital Projects

Well Projects: Phase 1, Water Production Well 8E and Phase 2, Aquifer Storage and Recovery Well



RFQ # 3092-18
November 21, 2018

Submitted to:

City of Venice

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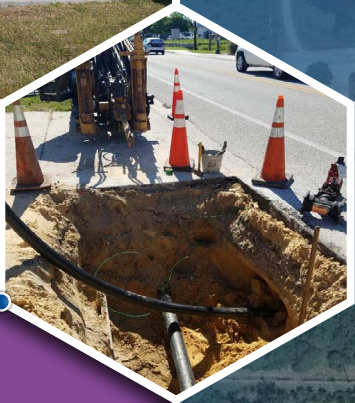
Contents

1. Letter of Interest



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JACOBS

4350 W Cypress Street,
Suite 600
Tampa, FL 33607
T +1.813.874.0777
www.jacobs.com

November 21, 2018

City of Venice Purchasing Department
Room 204, City Hall
401 W. Venice Avenue
Venice, FL 34285

RE: RFQ #3092-18 Professional Engineering Services for Large Utilities Capital Projects—Well Projects: Phase 1, Water Production Well 8E and Phase 2, Aquifer Storage and Recovery Well

Dear Mr. Boers:

Jacobs Engineering Group Inc. (Jacobs) is pleased to submit our Statement of Qualifications to provide professional engineering services to the City of Venice (City) for the Phase 1 and 2 Well Projects. Our team brings extensive and highly pertinent reclaimed water aquifer storage and recovery (RWASR) well and reverse osmosis (RO) production well experience, along with a history of underground injection control (UIC) wells in Sarasota County and adjacent counties.

Jacobs pioneered the development and implementation of ASR technology and has designed, managed the construction and testing, and secured operational permits for RWASR systems for the City of St. Petersburg, City of Palmetto, and Sarasota County. We are currently working on RWASR and aquifer recharge well projects for Lee County, Manatee County, and Sarasota County that will help manage wet weather flows while also mitigating coastal saltwater intrusion.

Jacobs is also a leader in RO brackish water supply, treatment, and concentrate disposal, starting in Cape Coral in the mid-1970s and building and expanding RO facilities and brackish groundwater systems for Gasparilla Island Water Authority, Englewood Water District, City of Fort Myers, Collier County, City of Marco, Bonita Springs Utilities, and Lee County Utilities. ***Through this extensive RO WTP experience, Jacobs understands the critical importance of making sure the brackish water source is compatible with the treatment facility.*** Recently, Jacobs helped Bonita Springs Utilities expand its RO wellfield by providing design, permitting, and hydrogeologic services for five new upper Floridan aquifer supply wells.

Our Florida municipal supply well projects virtually cover the state, with more than 50 Floridan aquifer wells for Jacksonville Electric Authority, numerous wells at Sarasota County's Carlton Reserve brackish groundwater supply wellfield, and a new RO supply wellfield for Florida Keys Aqueduct Authority. ***As proven by our unparalleled experience with both groundwater supply and RO treatment, Jacobs commits to the City of Venice a cohesive, quality team that delivers dependable and compatible RO supply well systems.***

Our local team is available to meet all immediate needs and expectations stated by the City in the RFQ. Our proposed personnel have worked closely together in successfully delivering multiple projects with similar scopes of services. This provides the City assurance in knowing that the Jacobs team has an advanced level of understanding of what the City needs to make these projects successful.

The recent merger of CH2M with Jacobs results in a depth of services and experience unmatched in the industry. Jacobs provides the City access to the experience and expertise of our firmwide hydrogeologists, engineers, scientists, and construction management staff, as needed, to support our well-qualified, proven project team outlined in our organization chart (Tab 2). Our team includes Chris Sharek (Sharek Solutions, Inc.) and Hyatt Survey Services, Inc., who are very knowledgeable about the City's infrastructure and project requirements.

Thank you for this opportunity to partner with the City on your well projects. We are confident that our team's depth of resources, flexibility, and local experience offer the City the greatest advantage in delivering quality projects on time and within budget.

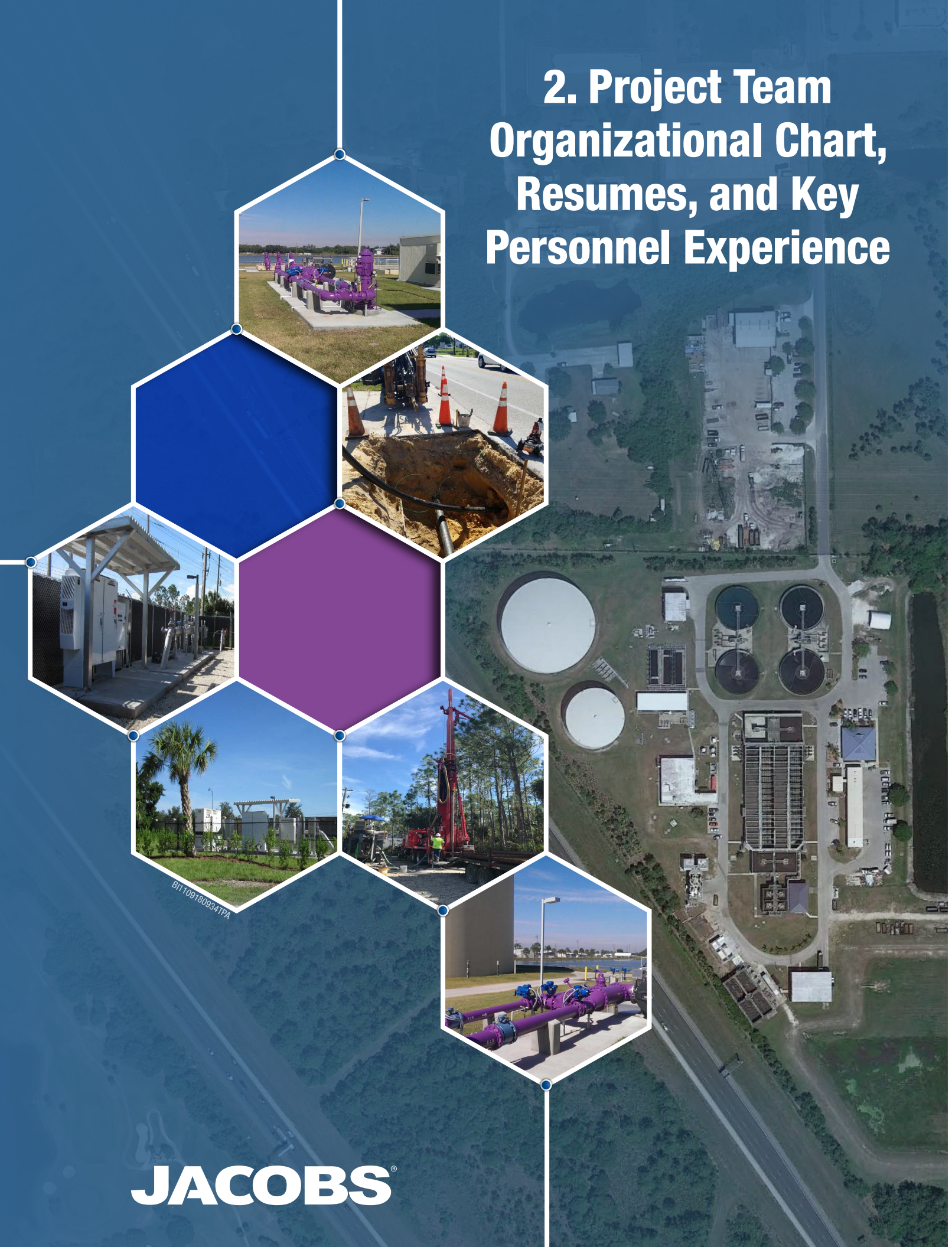
Sincerely,

Jacobs

Niel Postlethwait, PE, Principal-in-Charge
813.281.7749
Niel.Postlethwait@jacobs.com

Tom Farkas, PG, Project Manager/Client Manager
813.281.7906
Tom.Farkas@jacobs.com

2. Project Team Organizational Chart, Resumes, and Key Personnel Experience



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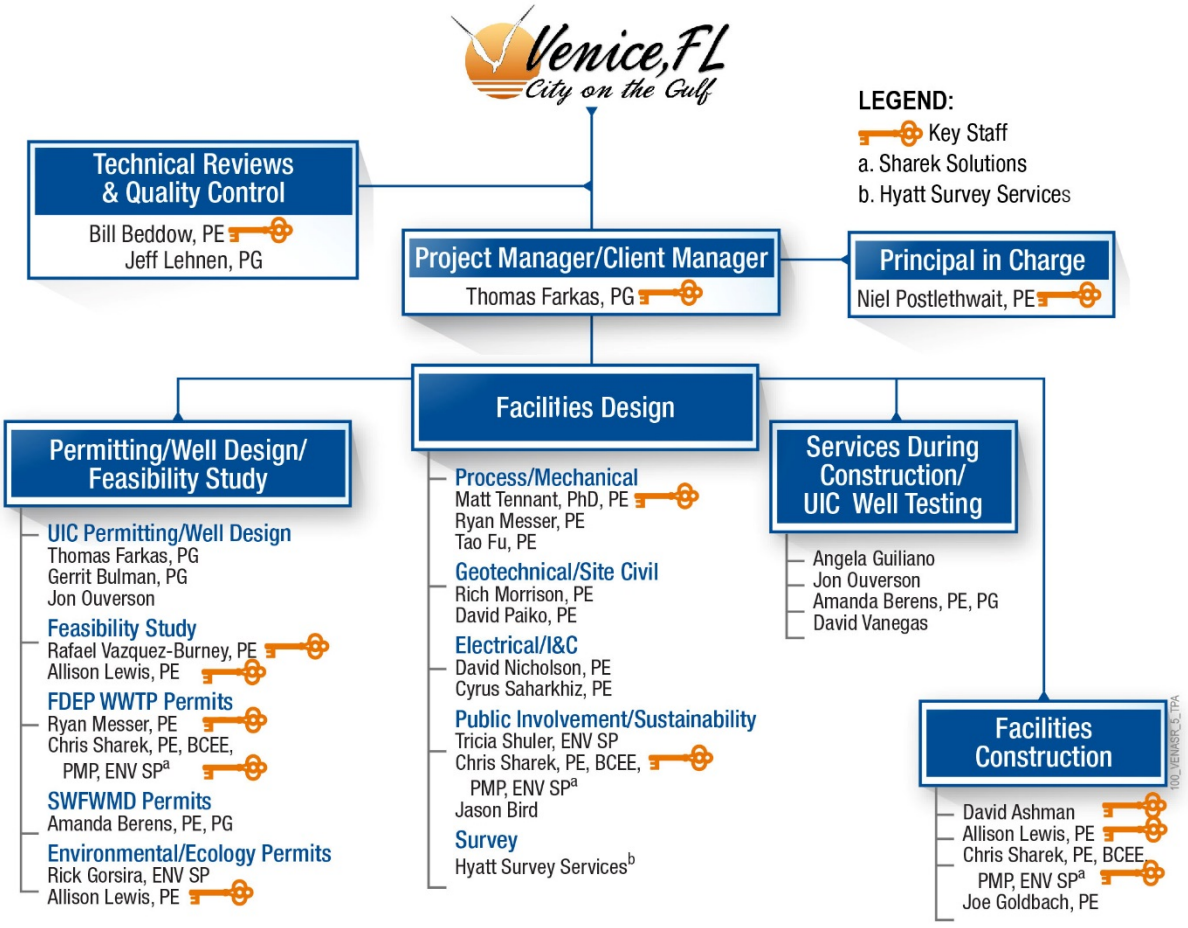
2. Project Team Organization Chart, Resumes, and Key Personnel Experience

The Jacobs team understands that the City seeks a committed team with the proven ability to deliver high-quality professional services that provide value and help optimize the City's investment. To achieve the City's goals and objectives for the Well Projects, we have assembled an experienced multidiscipline team led by an expert project manager with decades of relevant experience. A known, trusted professional by the City, Tom Farkas, PG, will serve as both our Project Manager and Client Manager. He will be fully responsible for making sure our team (identified in Exhibit 2-1) meets and exceeds the City's expectations for the project. As shown in this submittal, Tom is supported by a local design team and support staff who understand the unique permitting, design, and operational challenges for Phases 1 and 2 of this project.

Exhibit 2-1. Team Organization

Our experienced, local team applies core lessons learned combined with innovative technology to deliver successful and lasting results.



Our management approach is underpinned by a cohesive team that will serve as an extension of City staff to select the best solution that meets the City's needs. Our extensive local presence and team structure enable us to deliver concurrent tasks of any size or scope. This approach provides the City a single point of contact and full accountability, immediate responsiveness, a customized approach to meet project needs, and the best local resources available to deliver projects to the City's full satisfaction.

Jacobs' ability to accurately estimate the effort required to complete a project and deliver a quality product are key benefits of our project delivery system (PDS), project controls, and project delivery process, which are discussed in more detail in Section 5. Our proprietary PDS has built-in flexibility and scalability that make it an effective tool for meeting the need of any size project.

Key features and benefits of our management and delivery approach are:

- A single point of contact through Project Manager Tom Farkas to streamline communications and ensure Jacobs is fully responsive to your needs
- Local, highly qualified Task Leads for any project type, and immediate access to highly qualified local support staff and specialty resources matched to project requirements
- Clear roles and responsibilities, lines of communication, and accountability to provide efficient, accurate project execution
- Financial and schedule management and tracking to ensure that all milestones are achieved on time and within budget
- Quality assurance program to provide continuous senior review on projects, as needed, and of all deliverables prior to submittal to the City
- Consistent, quality delivery of project tasks, as our local design team understands the unique permitting, design, and operational challenges for Phases 1 and 2 of this project

Key Personnel

We selected our team members based on their experience working on similar scopes of services and projects for local clients, their reputation for providing top-quality service, and their ability to be fully committed to this assignment. These local team members work together on a continual basis, making it possible for us to immediately mobilize to meet the needs of any task.

Tom will manage this contract from our Tampa office, and all work will be executed and managed from this office. Together with our Principal-in-Charge, Niel Postlethwait, Tom will be fully responsible for meeting the City's needs.

Exhibit 2-2 summarizes the key capabilities of our proposed project team. Detailed resumes for all team members, highlighting their credentials and relevant experience, are provided at the end of this section. The experience of our key staff is summarized below.

Thomas Farkas, PG, Project Manager/Client Manager; UIC Permitting/Well Design

Tom has more than 30 years of experience in water resource development/management and environmental consulting, including reclaimed water, wastewater, and water experience with Florida local governments. He brings extensive project management, field-level, analytical, and modeling experience on a wide variety of projects in Southwest Florida, including Sarasota County. Thomas has overseen more than 50 projects involving public groundwater supply planning, permitting, and development; Underground Injection Control (UIC) Wells, including aquifer storage and recovery (ASR), aquifer recharge, and deep injection (Class I and Class V), that have included services from feasibility studies, test well design and construction permitting, construction phase management, testing and analysis, operational permitting, mechanical integrity testing, and well rehabilitation through acid injection.

Niel Postlethwait, PE, Principal in Charge

Niel has more than 16 years of experience in reclaimed water, wastewater, and water for Florida infrastructure projects, including alternative strategy for wet-weather underground disposal (recharge and injection wells), membrane bioreactor (MBR) construction and startup experience, reverse osmosis (RO) design, ozone operations, water treatment plant (WTP) and wastewater treatment plant (WWTP) design, conveyance design, water and wastewater permitting, wellfield design studies, deep well injection, and tracer studies. He brings a successful history of working with a variety of agencies and stakeholders in Florida.

Bill Beddow, PE, Technical Reviews and Quality Control

Bill has extensive reclaimed water, wastewater, and water experience with local governments, particularly in Southwest Florida. He specializes in water resources and water treatment, including public supply wellfields, ASR systems, water treatment facilities, deep injection wells (DIWs), water use permitting, and construction management. Bill has considerable experience designing, permitting, and remediating large-diameter production and injection wells. He has served as engineering manager for three water and wastewater design-build facilities totaling more than $120 million, including a new 6-mgd RO WTP, 8-mgd RO WTP expansion, and new 4-mgd MBR water reclamation facility (WRF).

Rafael Vázquez-Burney, PE, Feasibility Study

Rafael is an expert in water reuse, water treatment, and water resources projects in Florida, including feasibility, design, permitting, and construction. He specializes in natural treatment systems, developing and implementing innovative approaches to treatment wetlands technology focusing on specific water quality targets. He brings diverse experience in data collection, data analysis, modeling, and design with expertise in hydrology and hydraulic modeling packages and water quality models. He serves as Jacobs' East Regional Technology Lead for Natural Treatment Systems, and he developed and maintains Jacobs' standard design and costing tools for natural treatment systems.

Exhibit 2-2. Team Qualifications Summary

Our multidiscipline project team brings the City local, in-house experts in all facets of the Phase 1 and 2 Well Projects, ensuring cost-effective technical and operational solutions and a focused permitting strategy.

Staff Name	Primary Work Location	Potential Scope of Services													
		W/WW/RW Florida Government Experience	PE or PG in Florida	Production Wells	UIC ASR/Recharge Wells	Hydrogeology	Feasibility Studies	Design (Wells and Infrastructure)	Permitting	UIC Well Testing	Subsurface Utility Engineering	Geotechnical Investigations	Simulation Modeling	Construction Phase Services	Public Involvement
Thomas Farkas, PG	**Tampa**	■	■	■	■	■	■	■	■	■			■	■	■
Niel Postlethwait, PE	**Tampa**	■	■	■	■		■	■	■	■	■			■	
Bill Beddow, PE	**Naples**	■	■	■	■		■	■	■	■	■			■	■
Rafael Vazquez-Burney, PE	**Tampa**	■	■		■		■	■	■		■			■	■
Ryan Messer, PE	**Tampa**	■	■		■		■	■	■	■	■		■	■	
Matt Tennant, PhD, PE	**Gainesville**	■	■		■		■	■			■		■	■	
David Ashman	**Tampa**	■		■	■				■					■	
Allison Lewis, PE	**Tampa**	■	■		■		■		■					■	
Chris Sharek, PE, BCEE, PMP, ENV SP	**Sarasota**	■	■	■	■		■	■	■	■	■			■	■
Jeff Lehnen, PG	Jacksonville	■	■	■	■	■	■	■	■	■				■	■
Gerrit Bulman, PG	Fort Lauderdale	■	■	■	■	■	■	■	■	■			■	■	■
Jon Ouverson	Tampa	■		■	■	■	■	■	■	■			■	■	
Amanda Berens, PE, PG	Tampa	■	■	■	■	■	■	■	■	■			■	■	
Rick Gorsira, ENV SP	Tampa	■		■	■		■		■					■	
Tao Fu, PE	Gainesville	■	■		■		■	■			■			■	
Rich Morrison, PE	Gainesville	■	■						■						
David Paiko, PE	Tampa	■	■		■		■		■			■		■	
David Nicholson, PE	Gainesville	■	■	■	■			■			■			■	
Cyrus Saharkhiz, PE	Gainesville	■	■		■			■			■			■	
Tricia Shuler, ENV SP	Tampa	■			■		■				■			■	■
Jason Bird	Sarasota	■					■		■		■				■
Angela Guiliano	Fort Lauderdale	■		■	■	■	■	■	■	■			■	■	
David Vanegas	Fort Myers	■		■	■	■			■	■				■	
Joe Goldbach, PE	Tampa	■	■		■		■	■	■		■			■	

Bold = Key Staff

Ryan Messer, PE, FDEP WWTP Permits; Process/Mechanical

Ryan brings reclaimed water and wastewater experience with Florida local governments. He is experienced in permitting, pressurized distribution system temporary pressure and flow monitoring, data collection, data management, data analysis, and hydraulic modeling. He is familiar with dynamic hydraulic models, such as InfoWater and InfoWorks ICM. Ryan developed static-state gravity and pressurized-flow hydraulic models for Florida municipalities using the firm's proprietary software and Applied Flow Technologies' Fathom. Additionally, he has assisted with pipeline design and services during construction and has a proven track record of positive interaction with third-party stakeholders.

Matt Tennant, PhD, PE, Process/Mechanical

Matt is a process/mechanical engineer who specializes in the planning, evaluation, permitting, and design of water, reclaimed water, and wastewater treatment facilities in Florida. He is skilled in utilizing whole-plant process simulations to evaluate and design treatment facilities, including biological processes to stabilize liquid waste and sludge, membrane processes, and corrosion control. His experience includes modeling open channel and pipe flow hydraulic conditions within treatment facilities, as well as for conveyance systems. Matt brings knowledge of the use of 3D visualization software and (order-of-magnitude) cost estimating software to create preliminary site plans and budgetary estimates for treatment facilities.

David Ashman, Facilities Construction

David is a construction manager with extensive reclaimed water, wastewater, and water experience with Florida local governments. He is experienced in providing targeted and professional services for design-build (engineer-procure-construct) water, wastewater, stormwater, and reclaimed water infrastructure projects, participating in design, construction, and commissioning phases. David brings expertise in project-specific financial performance, owner-controlled contingency and firm contingency development and management; contract management; communication with clients and owners; scheduling and project financial management, including change orders and pay applications; and coordination of self-perform activities. As a resident engineer and construction manager, he also has conducted site inspections, coordinated design team efforts during the construction phase, directed permitting efforts with local and state agencies, conducted submittal reviews, and responded to requests for information.

Allison Lewis, PE, Facilities Construction; Feasibility Study; Environmental/Ecology Permits

A native of Venice, Florida, Allison has experience in reclaimed water, wastewater, and water projects with Florida local governments. Her expertise includes construction management services, wastewater permitting, natural treatment systems design, assisting with data collection and management for wetland and surface water programs, and public involvement.

Chris Sharek, PE, BCEE, PMP, ENV SP, Facilities Construction

Chris has more than 20 years of engineering experience in Southwest Florida, including design, construction oversight, and ownership and maintenance responsibilities of potable, wastewater, and reclaimed water systems. He also has experience in planning, technical design, permitting, and construction observation for utility improvements, stormwater, and other public infrastructure improvement projects. Chris has taught mathematics as an adjunct professor at the State College of Florida (formerly Manatee Community College) for the past 9 years and has translated this experience into successful public outreach presentations. He remains actively involved and served as a past president of the local American Public Works Association and American Society of Civil Engineers (ASCE) SunCoast Branches and currently serves as the President Elect for the State Section of ASCE. He is a graduate of the Leadership Sarasota, Leadership Manatee, and Gulf Coast Leadership Institute Programs.

Project Team Resumes

As requested in the RFQ, the following resumes demonstrate our team's experience in relevant water, wastewater, and reclaimed water projects with Florida local governments and other clients around the country.

Thomas Farkas, PG

Project Manager/Client Manager; UIC Permitting/Well Design

Education

MS, Hydrogeology, University of South Florida
BA, Geology, Case Western Reserve University

Professional Registrations

Professional Geologist: FL (#2074)

Relevant Qualifications

- Brings 30 years of experience in water resource development/management and environmental consulting, including reclaimed water, wastewater, and water experience with Florida local governments
- Extensive project management, field-level, analytical, and modeling experience on a wide variety of projects in southwest Florida, including Sarasota County
- Overseen more than 50 projects involving public groundwater supply planning, permitting, and development; Underground Injection Control (UIC) Wells including aquifer storage and recovery (ASR), aquifer recharge and deep injection (Class I and Class V) that have included services from feasibility studies, test well design and construction permitting, construction phase management, testing and analysis, operational permitting, mechanical integrity testing, and well rehabilitation through acid injection

Representative Project Experience

Senior Hydrogeologist, North Lee County Water Treatment Plant (WTP) Deep Injection Well II, Lee County, Ft. Myers, FL. Project involves construction and testing of Class I industrial tubing and packer deep injection well for disposal of reject brine from reverse osmosis water treatment plant. Proposed injection well has a targeted disposal capacity of 5 mgd and will be completed to a depth of approximately 3,000 feet. Permitting and design of the injection well was completed in December 2017. Construction and testing is expected to occur between 2018 and 2019.

Project Manager/Senior Hydrogeologist, Ft. Myers Beach and Fiesta Village Class V Reclaimed Water ASR Well System, Lee County, Ft. Myers, FL. Project involves the feasibility study, permitting, design, construction management, and testing of a Class V reclaimed water ASR well system located in Lee County. The reclaimed water ASR well feasibility study completed in 2017 confirmed the need for three ASR wells to provide up to 3 mgd of storage capacity using the Upper Floridan Aquifer system. Test well construction permitting through the Florida Department of Environmental Protection (FDEP) was completed in 2018, which included a Variance from Rule 62-610 for select primary drinking water standards. Construction of the ASR test well system is ongoing with completion expected in 2019 followed by cycle testing.

Project Manager, Class V Reclaimed Water ASR Program, City of Palmetto, Manatee County, FL. Prepared reclaimed water ASR permit application/report, including designs for construction and testing of City's ASR test well system. Project involved first combination in the state of Florida of ultraviolet disinfection of reclaimed water and addition of sodium bisulfite to depress dissolved oxygen levels and suppress arsenic generation in the storage aquifer. Cycle testing in 2015 and 2016 demonstrated no arsenic formation in the ASR well system. ASR Well System operating permit application submitted to FDEP in April 2017 with final permit issuance in October 2017.

Project Manager, Bee Ridge Class V Recharge Well Project, Sarasota County, FL. Phase I involved permitting, design, and construction of a 4,500-foot-deep exploratory well to investigate suitability of Lower Floridan Aquifer for a Class V Aquifer Recharge Well utilizing treated effluent from the Bee Ridge Water Reclamation Facility (WRF). Phase II includes permitting, design, construction, and testing of two Floridan Aquifer recharge wells. FDEP Class V Recharge Well Permit application was submitted in March 2017 and issued in November 2017.

Senior Hydrogeologist, Manatee County North WRF (NWRF) Injection Well Reuse Wet Weather Management System, Manatee County, FL. This County project includes design and construction of up to three Class I injection wells at NWRF to dispose of excess reclaimed water during the wet season. The proposed injection zone is into the lower Floridan aquifer (LFA). The firm will provide permitting, conceptual design, well and infrastructure design, bid services, and services during construction for construction of up to three LFA injection wells and associated monitoring wells. The team will also develop a basis of design report that will evaluate design criteria for the injection well system and provide a conceptual layout of the infrastructure related to the injection wells and monitor wells. As a senior hydrogeologist, provided evaluation of hydrogeologic testing data and QA/QC of project deliverables including permit applications and technical specifications.

Project Manager/Senior Hydrogeologist, Construction of Five Upper Floridan Aquifer Reverse Osmosis (RO) Production Wells, Bonita Springs Utilities, FL. Managed the construction and testing of five, 14-inch-diameter RO production wells capable of producing up to 2 mgd from brackish Upper Floridan aquifer up to 1,100 feet deep. Project is ongoing with construction started in June 2017 and completion expected in November 2018.

Project Manager/Senior Hydrogeologist, Well Rehabilitation of 8 East Terry Street Wells (Sandstone Aquifer) and 2 Upper Floridan Aquifer Production Wells, Bonita Springs Utilities, FL. Manage the well rehabilitation of 10 production wells including 2 Upper Floridan aquifer wells to 1,100 feet depth. Well rehabilitation program consisted of injecting 32% HCL acid (ranging from 500 to 5,000 gallons), well development, pump testing, post acid geophysical logging, and final well disinfection. Increases in post-acid well specific capacity ranged from 100% to 400% of pre-acid capacity.

Project Manager/Senior Hydrogeologist, Class I Deep Injection Well Systems Permit Compliance, Sarasota, FL. Responsible for renewing Class I deep injection well operating permits, preparing annual injection well operating summary reports, implementing well acidization/rehabilitation measures as needed, and managing mandatory mechanical integrity tests for six deep injection wells.

Project Manager/Senior Hydrogeologist, Reclaimed Water ASR Program, Sarasota County, Sarasota, FL. Prepared reclaimed water ASR permit application/report, including designs for construction and testing of ASR test well system. Assisted the County attorney as a hydrogeology expert witness during administrative hearing proceedings for FDEP issuance of a Class V well construction permit. Prepared technical specifications for bidding and managed construction of ASR test well system. ASR system cycle testing was completed in August 2014. Final Class V ASR Well Operating Permit obtained in 2016.

Project Manager, Peace River Master Plan Update, Peace River/Manasota Regional Water Supply Authority, Lakewood Ranch, FL. Provided engineering services to update the Authority's Integrated Regional Water Supply Master Plan (IRWSMP) developed in 2006. The update will consider that regional production and transmission capacity has significantly expanded, and will focus on the following items: regional facilities update, regional needs, sources, and connectivity, system water quality maintenance, source and resource protection strategies, demand management/water conservation, and capital improvement plan development. Managing the project.

Project Manager/Senior Hydrogeologist, Cross Bar Ranch Wellfield Pump Replacement Project, Tampa Bay Water, TFL. Project involves the replacement of 30-year-old pumps in 17 existing municipal Upper Floridan Aquifer production wells at the Cross Bar Ranch Wellfield, which has a hydraulic capacity of 60 mgd. Oversaw preparation of a Preliminary Design Report and technical specifications for new pumps, motors, and electrical instrumentation controls for all 17 wells.

Project Manager/Senior Hydrogeologist, Continuing Review of Development of Regional Impact, Rezoning, Mining Permit, and Special Permit Applications, Tampa Bay Water, FL. Providing technical reviews and provide development order recommendations to Tampa Bay Water staff regarding various development applications and permits within the Tampa Bay area that potentially affect Tampa Bay Water groundwater and surface water supply infrastructure. Tampa Bay Water is the water supply agency for the tri-county Tampa Bay area, producing in excess of 150 mgd of potable water. Work has been performed as part of as-need hydrogeological and hydrological services contract held with Tampa Bay Water.

Project Manager/Senior Hydrogeologist, Integrated Source Water Protection Program Development, Tampa Bay Water, FL. Developed an integrated source water protection program for Tampa Bay Water source water supplies, which include groundwater, surface water, and desalination.

The program consists of identifying up to 300 source water protection measures, narrowing the list of options through an iterative survey evaluation with technical experts, ranking options on the basis of a cost-benefit analysis, and submitting recommendations on how to implement the ranked source water protection measures.

Project Manager/Senior Hydrogeologist, Venice Gardens Deep Injection Well #1A, Sarasota County, Venice, FL. Managed construction and testing of Class I industrial tubing and packer deep injection well for disposal of reject brine from reverse osmosis water treatment plant and excess reclaimed water from wastewater treatment plant. Injection well has a disposal capacity of 18 mgd and is completed to a depth of 1,900 feet.

Project Manager/Senior Hydrogeologist, Central County Deep Injection Well #1, Sarasota County, FL. Managed construction and testing of Class V Exploratory/ Class I municipal deep injection well for disposal of excess reclaimed water from the Central County wastewater treatment plant. Injection well has a disposal capacity of 18 mgd and is completed to a depth of 1,800 feet.

Project Manager/Senior Hydrogeologist, Deep Injection Well #1, City of Sarasota, FL. Managed construction and testing of Class I industrial tubing and packer deep injection well for disposal of reject brine from reverse osmosis water treatment plant and excess reclaimed water from wastewater treatment plant. Injection well has a disposal capacity of 18 mgd and is completed to a depth of 1,700 feet.

Project Manager/Senior Hydrogeologist, Upper Floridan Aquifer Recharge Program in North Florida, Suwannee River Water Management District (SRWMD) and St. Johns River Water Management District (SJRWMD), FL. Develop conceptual methodologies to recharge the Upper Floridan aquifer including identifying key project components and associated capital costs. The project will develop this information based on consideration of varying geologic conditions in the study area and typical water quality of potential sources for recharge. The potential sources of recharge water include reclaimed water and surface water within both districts. Potential recharge areas will be focused on depressed Upper Floridan aquifer levels in the eastern central boundary of SRWMD and the western central boundary of SJRWMD.

Project Manager, Middle Suwannee River Aquifer Recharge Well Construction Permitting, SRWMD, FL. The District intends to implement the project with a passive recharge approach of the Upper Floridan aquifer (UFA) through aquifer recharge well(s) installed adjacent to the St. Regis Canal. Providing assistance with obtaining a Class V, Group 2 Test Well Construction Permit from FDEP, preparing an aquifer recharge well design with technical specifications, and assisting the District with bidding and selection of a qualified well contractor to construct the recharge well.

Project Manager/Senior Hydrogeologist, Lake Tarpon Surface Water ASR Program, Pinellas County Utilities, Clearwater, FL. Performed feasibility study to evaluate the potential for storing seasonal excess water from Lake Tarpon into an ASR system to augment the County's reclaimed water system. Managed construction and testing of exploratory wells at two different sites to confirm aquifer storage zone suitability for storage and recovery of surface water. Based on suitability of second site, prepared an FDEP Class V ASR test well permit application and technical specifications, and managed construction of the ASR wells at the Chestnut Park site in Pinellas County.

Project Manager/Senior Hydrogeologist, Venice Gardens Deep Injection Well #2, Sarasota County, Venice, FL. Supervised construction and testing of Class I deep injection well for disposal of reject brine from electrodialysis reversal water treatment plant and excess reclaimed water from wastewater treatment plant. Injection well has a disposal capacity of 8 mgd and is completed to a depth of 1,800 feet.

Project Manager/Senior Hydrogeologist, Carlton Reserve Wellfield Optimization Study, Sarasota County, Venice, FL. Performed study to optimize groundwater withdrawals from the Carlton Wellfield taking into account impacts to surrounding wetlands, salt water intrusion, and other legal existing users. Recommendations included a well rotation plan consisting of 14 existing production wells and two future wells to ensure stable groundwater quality from a brackish aquifer. Managed the construction and testing of two, 16-inch-diameter reverse osmosis production wells capable of producing up to 2 mgd from brackish aquifer up to 700 feet deep.

Project Manager/Senior Hydrogeologist, Deep Injection Well, Florida Governmental Utility Authority, Lehigh Acres, FL. 2007-2009. Prepared a Class I municipal deep injection well construction permit application/report including designs for construction and testing of the test well system and

technical specifications for bidding. Managed construction and testing of the injection well system. Injection well has a disposal capacity of 18.6 mgd and was completed to a depth of 3,200 feet.

Project Manager/Senior Hydrogeologist, Wellfield Optimization Study, Wellfield Expansion, and Reclaimed ASR Test Well Construction, Englewood Water District, Englewood, FL. Prepared master plan that evaluated existing groundwater supplies and found degrading groundwater quality, determined a need for development of new groundwater supplies (conjunctive use wellfield) to protect existing groundwater supplies from saltwater intrusion, developed a wellfield optimization program for each of the District's four wellfields, and managed design and construction of two new reverse osmosis supply wells and four new freshwater wells. Also evaluated hydrogeologic data gathered during construction and testing of the reclaimed water ASR test well for the purpose of finalizing test well and monitor well construction details.

Project Manager/Senior Hydrogeologist, Class I Deep Injection Well, Englewood Water District, Englewood, FL. Prepared a Class I industrial deep injection well construction permit application/report including designs for construction and testing of the test well system and technical specifications for bidding. Managed construction and testing of the injection well system. Injection well has a disposal capacity of 10 mgd and was completed to a depth of 1,900 feet.

Niel Postlethwait, PE

Principal in Charge

Education

MS, Environmental Engineering, Virginia Tech
BS, Environmental Studies, Elon College

Professional Registrations

Professional Engineer: FL (#64034)

Relevant Qualifications

- Extensive reclaimed water, wastewater, and water experience with Florida local governments
- More than 16 years of experience in water and wastewater infrastructure projects includes membrane bioreactor (MBR) construction and startup experience, reverse osmosis (RO) design experience, ozone operating experience, water treatment plant (WTP) and wastewater treatment plant (WWTP) design experience, conveyance design, water and wastewater permitting, wellfield design studies, deep well injection, and tracer studies
- Successful history of working with a variety of agencies and stakeholders in Florida

Representative Project Experience

Project Engineer, Partially Treated Surface Water Aquifer Storage and Recovery (ASR) Conversion, Peace River Manasota Regional Water Supply Authority's, Bradenton, FL. The Authority's potable ASR system has been a critical water storage component, enabling the Authority to manage seasonal demands when flows from the Peace River are too low or water quality is not acceptable for treatment. Served as project engineer, responsible for review and collaboration of alternative pump station design and cost estimating for pilot and demonstration testing and full conversion of design alternatives.

Project Manager, North Water Reclamation Facility (NWRF) Injection Well Reuse Wet Weather Management System, Manatee County, FL. This project includes design and construction of up to three Class I Injection Wells at NWFR to dispose of excess reclaimed water during the wet season. The proposed injection zone is into the lower Floridan aquifer (LFA). The firm will provide permitting, conceptual design, well and infrastructure design, bid services, and services during construction for construction of up to three LFA injection wells and associated monitoring wells. The team will also develop a basis of design report that will evaluate design criteria for the injection well system and provide a conceptual layout of the infrastructure related to the injection wells and monitor wells. Multi-discipline staff will include civil, mechanical, structural, electrical, and I&C disciplines. As project manager of all design and construction deliverables under this contract, is directly responsible for delivering engineering consulting services and construction services; assembling teams with a shared vision to delivery services on time and within project budget; and integrating technology to deliver results and facilitate decisions. Construction responsibilities will include submittal review, RFI and change management, and onsite inspection, while providing valuable interface between the designers, client representatives, subcontractors, suppliers, and the permitting agencies.

Assistant Project Manager, RO WTP Wellfield Expansion and Process Improvements Progressive Design-Build, City of Fort Myers, FL. Involved in mechanical process design for the 5-mgd wellfield expansion. This project involved sizing 36-inch and 24-inch raw water transmission mains, wellhead facilities, and sand strainer.

Project Engineer, Injection Well Specifications and Drawings, Gasparilla Island Water Association, Boca Grande, FL. Prepared civil specifications and drawings for deep injection wells 6 and 7 for Gasparilla Island Water Association. Responsible for design of the pipeline, contract document specifications, and permitting.

Resident Observer, Brackish Water Production Well Construction, Bonita Springs Utilities, FL. Served as a resident observer for construction of a brackish water production well. Duties included

geologic sample descriptions, preparation of daily construction reports, and preparation of weekly construction summaries.

Project Manager, Water and Wastewater Pipeline Projects, Manatee County, FL. Project involves providing construction phase services for the replacement of approximately 45,000 linear feet of 2-inch, 3-inch, and 6-inch water main with new 6- and 8-inch water main, and replacement of approximately 7,200 linear feet of 10-inch, 12-inch and 14-inch wastewater force main. Project construction will be within residential and high traffic commercial areas with pipelines being located with County right-of-way or within existing or new utility easements. Segments of the project will be constructed using horizontal direction drilling technology to minimize impacts to area surface features and work within limited easement locations.

Project Manager, Southwest Water Reclamation Facility (SWWRF) Modified Ludzack-Ettinger (MLE) Nitrogen Removal and Digester Modification, Manatee County, FL. This project involved converting the process liquid phase of the existing SWWRF conventional wastewater treatment facility to the MLE process by converting existing primary clarifiers to anoxic reactors, installation of a new influent/recycle mixing box, installation of mixed liquor recycle pumps and recycle piping to return aeration basin mixed liquor to the anoxic zone, and conversion of existing anaerobic sludge digestion tanks to aerobic sludge holding tanks. The modifications incorporated MLE process to achieve effluent nitrogen levels of less than 10 mg/L. The modified facility was designed for 15 mgd. The engineering design was completed and consisted of MLE process and sludge holding tank modifications. Project is currently in construction.

Provided project management and oversight services for bid phase and continues to support construction services for modifications to the existing SWWRF. Bid phase services included assistance with development of multiple procurement package documents and successful integration with the County's Purchasing Department, responding to bidder questions and award recommendations. Experienced in providing various construction services for this project involving construction administration including quality assurance inspection, change management, manage document control process, pay application review, commissioning, and testing services.

Resident Engineer, East WRF MBR Treatment Facility, Bonita Springs Utilities, FL. Served as a resident engineer for construction of a 4-mgd MBR WRF. Responsible for change management, submittal review, quality control, and providing excellent service to contractor with varying demand/needs.

Project Manager, SWWRF Filter Rehabilitation, Manatee County, FL. The firm prepared design and construction contract documents and construction oversight for design (mechanical, structural, and electrical modifications), bid phase and services during construction for modifications to the existing SWWRF ABW filters. Team evaluated seven automatic backwashing filters for various operational issues and developed recommendations for repair or replacement. Bid phase and construction services include response to bidder questions, submittal review, RFI and change management, and onsite inspection.

Responsible for delivering engineering consulting services and construction services; assembling teams with a shared vision to delivery services on time and within project budget; and integrating technology to deliver results and facilitate decisions. Construction responsibilities include submittal review, RFI and change management, and onsite inspection, while providing valuable interface between the designers, client representatives, subcontractors, suppliers, and the permitting agencies.

Q**uality Manager, Desal Task A, Tampa Bay Water, Pinellas County, FL.** Project involved support of potential contract negotiations between Tampa Bay Water and American Water. Provided Tampa Bay Water with an understanding of accepted industry practice related to the risks and pricing for desalination plants, and plants running on a partial year schedule. This effort included an assessment of existing operations and maintenance (O&M) agreements between private operators and public water utilities to evaluate the terms and conditions of those O&M agreements and identify what could be potentially incorporated into a renegotiated agreement for the desal plant.

Deputy Project Manager, Utility Capital Improvement Projects (UCAP) Program, City of Tampa, FL. For this major utility infrastructure rehabilitation and replacement program, was responsible for design coordination and planning; design and delivery schedule; design reviews; maintenance and updates of specifications, standard details, and design standards. Also provided assistance as needed during construction. Served as deputy project manager for both the design and construction of the following UCAP projects: 12th Street Force Main Replacement, CIAC Water Transmission Main, Sulphur Springs 24 mgd Pump Station, and Donut Pond 65 mgd Pump Station.

Bill Beddow, PE

Technical Reviews and Quality Control

Education

ME, Environmental Engineering, University of Florida
BS, Environmental Engineering, University of Florida

Professional Registrations

Professional Engineer: FL (#52581)

Relevant Qualifications

- Extensive reclaimed water, wastewater, and water experience with local governments, particularly in Southwest Florida
- Specializes in water resources and water treatment, including public supply wellfields, aquifer storage and recovery (ASR) systems, water treatment facilities, deep injection wells (DIWs), water use permitting, and construction management
- Considerable experience designing, permitting, and remediating large-diameter production and injection wells
- Served as engineering manager for three water and wastewater design-build facilities totaling more than $120 million, including a new 6-mgd mgd reverse osmosis (RO) water treatment plant (WTP), 8-mgd RO WTP expansion, and new 4-mgd membrane bioreactor water reclamation facility (WRF)

Representative Project Experience

Principal-in-Charge/Project Manager, Upper Floridan Wellfield Expansion, Bonita Springs Utilities, FL. Led the permitting, design, and construction of eight new 14-inch diameter Upper Floridan aquifer wells to expand the RO WTP.

Project Engineer, ASR System, Sarasota County, FL. Investigated the feasibility of an ASR system. Responsibilities included hydrogeological assessment and engineering design. Also the project manager for ASR feasibility studies for projects in Venice, Lehigh Acres, Marco Island, Englewood, and Fort Myers, Florida.

Project Manager, Public Supply Wellfield (Design-Build), City of Fort Myers, FL. Project manager for a new public supply wellfield for the City's RO WTP. This fast-tracked project included seven new 14-inch-diameter deep production wells withdrawing water from the Upper Floridan Aquifer. Project included two test wells used to verify water quality and to confirm production capacity. The test wells were also used to supplement the City's water supply during a critical water shortage and were later converted to production wells.

Engineering Manager, RO WTP and Production and Deep Injection Wells, Bonita Springs Utilities, FL. Design-build project involving a new $36 million RO WTP. The new facility is located at the site of the existing lime softening WTP and was designed for an initial capacity of 6 million gallons per day (mgd). The facility was designed to be expandable to 12 mgd. Raw water is supplied to the plant from eight brackish water wells tapping the Lower Hawthorn formation of the Upper Floridan aquifer. Also engineer-of-record for the Class I industrial injection well, which was used to dispose concentrate water from the RO WTP.

Project Manager, Wellfield Quality, City of Fort Myers, FL. Led an investigation examining the City's wellfield water quality and its compatibility with its 12-mgd membrane softening water treatment plant. The focus of the investigation was to identify the wellfield water quality changes that have led to premature membrane failure and to find solutions that still utilized the new membrane WTP. The investigation provided the City with ways to optimize the current raw water supply and treatment process, and identified new raw water sources more compatible with membrane water treatment process.

Principal-in-Charge/Project Manager, Water and Wastewater Master Plan, Bonita Springs Utilities, FL. Services included design, permitting and professional services during construction. Project included six new Upper Floridan aquifer supply wells, Class I industrial deep injection well and monitor well

system, 5-mile wellfield roadway improvements including elevation and paving, raw water transmission mains, fresh water supply wellhead improvements, pre- and post-water treatment systems and a cation and anion exchange (IX) system to treat high organic fresh surficial aquifer water. The IX system is designed to be able to use Lower Floridan aquifer salt water to recharge the cation resign for projected savings of nearly $1 million annually at full capacity. Project also included new administrative and process buildings, roadways, and site improvements.

Project Engineer, Deep Injection Well System, Sarasota County, FL. New environmental regulations necessitated major design changes during construction. Assisted in the redesign efforts for this well, which resulted in a substantial cost reduction to the client.

Senior Consultant, RO DIW and Floridan Supply Wells at J. Robert Dean WTP, Florida Keys Aqueduct Authority, Florida City, FL. Advised project team on injection well testing and well completion decisions and interpretations, as well as provided review during construction.

Project Manager/Engineer-of-Record, Injection Well and Monitor Well System (Design-Build), City of Fort Myers, FL. Project manager and engineer-of-record for the permitting, design, and construction of a 3,200-foot deep injection well and 1,800-foot-deep dual-zone monitor well system. The Class I industrial tubing and packer type injection well is located at the City's RO WTP and is designed to dispose up to 4.2 mgd of RO concentrate.

Project Manager, DIW and RO Supply Wells, Gasparilla Island Water Association, FL. Supervised the construction and testing operations for a deep injection well and four RO supply wells. These wells were unique and presented special construction and testing concerns because of their placement in a fresh-water surficial aquifer wellfield.

Project Manager/Engineer-of-Record, Deep Injection Well, Lee County Utilities, FL. Project manager and engineer of record for the permitting, design, and construction of a 3,000-foot-deep injection well and 1,800-foot-deep dual-zone monitor well system. The injection well, located at the Fort Myers Beach WWTP, was designed to dispose excess treated wastewater to minimize the County's reliance on poorly-performing percolation ponds.

Principal-in-Charge/Officer-in-Charge, Water Treatment Improvement Projects Involving RO and Membrane Filtration Water, City of Marco Island, FL. Principal-in-charge of several WTP expansion and improvement projects for the City. Projects included a new water storage facility, high-service pumping upgrades, odor control repairs, and water treatment process evaluations.

Engineering Manager, East WRF (Design-Build), Bonita Springs Utilities, FL. Engineering manager for this design-build project that included the design and construction of a new 4-mgd advanced WRF, expandable to 8 mgd. At the time of construction, it was the largest membrane bioreactor facility of its type in Florida. Residuals management was designed to meet future regulations and is accomplished by means of a rotary drum dryer system producing Class AA biosolids. Odor control systems include tower biofilters. Also served as the engineer-of-record for the Class I municipal injection well that was designed to dispose excess reclaimed water during extended wet weather periods.

Project Engineer, Lime Softening WTP Improvement Project, City of Temple Terrace, FL. Assisted in the engineering design of the water treatment systems, as well as overseeing the latter phases of construction.

Project Engineer, River Oaks Wastewater Treatment Plant, Hillsborough County, FL. Performed engineering services during construction of improvements that included the addition of an active odor control system and other miscellaneous modifications.

Education

MCE, Civil Engineering, North Carolina State University
BS, Environmental Engineering, North Carolina State University

Professional Registrations

Professional Engineer: FL (#70768)

Relevant Qualifications

- Expert in water reuse, water treatment, and water resources projects in Florida, including feasibility, design, permitting, and construction
- Specializes in natural treatment systems, developing and implementing innovative approaches to treatment wetlands technology focusing on specific water quality targets
- Diverse experience in data collection, data analysis, modeling, and design with expertise in hydrology and hydraulic modeling packages such as EPA SWMM, XP SWMM, SPAW, EPA Net, and WaterCad and water quality models

Representative Project Experience

Project Manager/Project Engineer, Central Pasco County Beneficial Water Reuse Project, Pasco County Utilities Services Branch, FL. For this award-winning project, developed alternatives, created a GIS-based site selection model to find suitable properties to locate areas suitable for infiltration treatment wetlands, developed cost estimates for large-scale wetlands ranging in size from 500 to 2,000 acres, and performed cost benefit analyses. Technical feasibility consisted in hydrologic and water quality modeling for each alternative, and prepared and presented deliverables to client and to Southwest Florida Water Management District (SWFWMD). Led hydrogeological testing for an infiltration wetland involving aquifer performance testing used to develop a calibrated groundwater model. Led detailed design and secured permits without the need for RFIs. Managing construction of the wetland system consisting of 15 wetland cells with a total footprint of 176 acres.

Project Manager/Lead Subject Matter Expert, Feasibility Study of the Crews Lake Natural Systems Restoration Project, Pasco County Utilities Services Branch, FL. Developed alternatives, performed hydrologic and water quality modeling for each alternative, and prepared and presented deliverables to client, SWFWMD, and Florida Department of Environmental Protection (FDEP). Project goals included developing disposal capacity for each alternative while meeting all current water quality requirements, including new numeric nutrient criteria. Currently leading baseline studies, permitting, and design tasks for project implementation.

Project Engineer, Feasibility Study and Preliminary Design of Zero-Discharge System, The Dow Chemical Company. Project involved the creation of a 30-year daily water balance model to determine the feasibility of implementation of a salt marsh to be used as a zero-discharge system from a groundwater remediation treatment facility. Analysis included the study of rainfall records, modeling of evapotranspiration, and a daily water balance calculation to determine water levels and volumes needed for storage. Prepared section on zero-discharge system for the overall feasibility study.

Project Engineer, Preliminary Design of Treated Municipal Effluent Discharge Facilities to Existing Natural Wetland, Blacks Ford Water Reclamation Facility, St. Johns County, FL. Project involved alternatives evaluation and feasibility of different discharge schemes. Creation of Extend 6 hydraulic model was performed as a tool for alternatives evaluation. Performed all client deliverables.

Project Engineer/Project Manager, Pilot Treatment System for High Strength Industrial Wastewater, Confidential Industrial Client, Central FL. Aided in the preparation of literature review and feasibility study for the identification of innovative treatment train as an alternative for current treatment method. Performed pilot system design and prepared all deliverables.

Project Engineer/Lead Subject Matter Expert, Pasco County Master Reuse System Master Plan, Pasco County, FL. Led the evaluations required to develop the Master Plan and provide the operating strategy and capital projects to allow the system to grow as a zero-discharge regional reuse system for the next 20 years. Recommendations included implementation of a new groundwater recharge wetland which is being constructed, implement a discharge to a natural hydrologically altered wetland that is being designed, integration of a new 500-MG reservoir that was recently completed, and installation of new transmission lines to optimize conveyance.

Project Technologist/Lead Subject Matter Expert, Performance Assessment of Vegetation Mats for Nitrogen Management of Reclaimed Waters in TMDL Limited Watersheds, Pasco County, FL. Planned, designed, and constructed floating wetland islands to be deployed in a 4-acre reclaimed water test cell, developed monitoring plans and flow scenarios to assess the performance of floating wetland islands, provided monitoring support for 1 year and evaluated all data collected.

Project Engineer/Lead Subject Matter Expert, Floating Wetland Islands, Pasco County Utilities Services Branch, FL. Project involved the design, construction and assessment of floating wetland islands for nitrogen reduction in reclaimed water storage reservoirs. Planned and designed and constructed a system of floating wetland islands that consisted of 20 mats planted with native emergent wetland species in a 4-acre reclaimed water lined storage pond. Developed monitoring plans and flow scenarios to assess the performance of floating wetland islands.

Project Manager/Lead Subject Matter Expert, Freedom Park (Gordon River) Vegetation Management and Operation Optimization Services, Collier County, FL. Provided oversight and quality control on the vegetation survey, vegetation management plan and developed strategies for hydrologic management strategies to maintain native and desirable vegetation communities within the park. Project involved evaluating long-term operational data and vegetation survey data to determine causes for invasion of exotic species and determine operation strategies for maintaining desirable vegetation communities.

Task Lead, Boyette Road Reclaimed Water Reservoir Environmental Resource Permit, Pasco County, FL. Led a comprehensive water quality study that involved clean metals methods. As agreed by FDEP, a comprehensive sampling plan that included sampling various locations across the footprint of the borrow pits was prepared. Collected samples using clean metals methods and analyzed the results. The analysis served as the basis for the FDEP to agree to modify the existing permit condition to allow for offsite dewatering, in accordance with all state, federal, and local regulations. Significant construction cost savings were achieved through the execution of this work.

Project Engineer, Algae Treatment System Evaluation for Stormwater and Surface Water Treatment, SWFWMD, South Central FL. Project involved a comprehensive literature review of algae treatment facilities including design and performance data, site evaluations for the implementation of a pilot study, preparation of bid request for identification of adequate vendor, and preparation of sampling plans and plans of study for the study of an existing facility.

Project Manager/Lead Subject Matter Expert, Groundwater Recharge Wetland Park, City of Ocala, FL. Led the construction of a treatment wetland to receive stormwater and reclaimed water for water quality polishing and infiltration to support regulatory drivers within the Silver Springs System which is subject to MFL and TMDL limitations. The system is expected to recharge 5 mgd and reduce nitrate to background levels.

Project Engineer, Alternatives Identification, In-kind Improvements of County Owned Pump Stations, Pasco County Utilities, Pasco County, FL. Identified alternatives for improvements to pump stations of concern. Responsibilities include identification of alternatives, deliverable preparation, and meetings with FDEP for update on project progress.

Ryan Messer, PE

FDEP WWTP Permits; Process/Mechanical

Education

ME, Environmental Engineering Sciences, University of Florida
BS, Environmental Engineering Sciences, University of Florida

Professional Registrations

Professional Engineer: FL (#79332)

Relevant Qualifications

- Reclaimed water and wastewater experience with Florida local governments
- Experienced in permitting, pressurized distribution system temporary pressure and flow monitoring, data collection, data management, data analysis, and hydraulic modeling
- Familiar with dynamic hydraulic models, such as InfoWater and InfoWorks ICM
- Developed static state gravity and pressurized flow hydraulic models for Florida municipalities using the firm's proprietary software and Applied Flow Technologies' Fathom
- Assisted with pipeline design and services during construction
- Proven track record of positive interaction with third party stakeholders

Representative Project Experience

Project Manager, Peace River Raw Water Aquifer Storage and Recovery (ASR) Study, Peace River Manasota Regional Water Supply Authority, Arcadia, FL. Project included a desktop analysis on the feasibility and cost-benefit of adding partially treated (filtered only) surface water as an additional source water to the Authority's current potable water ASR system. The findings included a 50% savings in operations and maintenance costs of the ASR system. Served as project manager and technical lead on the engineering features of this project including siting and developing a conceptual plan, and costing a 20-mgd pump station and piping to convey water stored in Reservoir No. 1 to ASR Wellfield No. 2.

Engineer-of-Record, Southwest Water Reclamation Facility (SWWRF) Reclaimed Water and Injection Wells Improvements, City of St. Petersburg, FL. Project includes planning, siting, permitting, designing, and performing services during construction for three new 24-inch-diameter Class I deep injection wells and the corresponding high service pumping facility expansion and effluent piping to dispose of excess reclaimed water produced at the City's SWWRF. Uniquely, a series of four diesel pumps were purchased to supply up to 22.4 mgd of disposal capacity to these injection wells to provide expedited improvements and to help alleviate overflows at SWWRF during wet weather events and power failures. Serves as the engineer of record for these improvements.

Engineer-of-Record, Northwest WRF (NWWRF) Reclaimed Water and Injection Wells Improvements, City of St. Petersburg, FL. Project includes planning, siting, permitting, designing, and performing services during construction for one new 24-inch-diameter Class I deep injection well and upgrades to the NWWRF's high service pumping facility and effluent piping to dispose of excess reclaimed water produced at the City's WRF. To achieve a firm capacity of the design peak hour flow, a 22.4 mgd, a diesel pump station was implemented to help mitigate wet weather events and associated power failures. Serves as the engineer of record for these improvements.

Project Manager, Peace River Partially Treated Surface Water (PTSW) ASR Permitting – Phase I, Peace River Manasota Regional Water Supply Authority, Arcadia, FL. Project included an initial permit application to conduct a pilot study for utilizing partially treated (filtered only) surface water as an additional source water to the Authority's current potable water ASR system. Served as project manager and engineer-of-record for the permit application.

Permitting Lead/Mechanical Engineer, Northwest Water Reclamation Facility (NWWRF) Coarse Screening Structure and Odor Control Design, St. Petersburg, FL. This project included design and permitting of a coarse screening structure and an odor control system for the City's NWWRF. Assisted in

process mechanical design by developing a gravity flow hydraulic model, assisting with coarse screen selection, and assisting with yard piping layout. Led the permitting effort for a minor modification to the facility's Florida Department of Environmental Protection (FDEP) Operation Permit and coordinated the application for the City's Building Department permit.

Permitting Lead/Process Mechanical Engineer, SWWRF Process Modification for Nitrogen Removal, Manatee County, FL. This project involves the conversion of the County's SWWRF from a conventional activated sludge treatment system to a MLE treatment system using existing infrastructure and converting their anaerobic digesters to aerated sludge holding tanks. Led the permitting effort for this major modification, performed hydraulic modeling to ensure that the existing basins are capable of handling the increased flow that is required by the process, and investigated the reuse of all current pumps with pipe modifications at the facility. Also performs resident observation during construction.

Project Engineer, Renewal of Four WRF Operation Permits, Pasco County, FL. Project to renew the discharge permits for four existing wastewater treatment facilities: Shady Hills (14 mgd), Land O' Lakes (3.5 mgd), Embassy Hills (3.5 mgd), and Hudson (3 mgd). Two of the renewals included treatment plant modifications. One modification involved the addition of a disc filter that had not undergone previous reasonable assurance testing within the Southwest District. Three of the facilities' permits (Shady Hills, Embassy Hills, and Hudson) were issued without a request for additional information (RAI) from the Southwest District Office of FDEP. Requested and received 10-year permits for non-National Pollutant Discharge Elimination System (NPDES) discharges.

Project Engineer/Interim Project Manager, Regulatory Assistance, City of St. Petersburg, FL. Regulatory assistance tasks for the City's deep injection well, ASR well, and REWARD well systems. Tasks included a permit modification to re-rate the Southwest Wastewater Reclamation Facility (SWWRF) injection wells permitted flow, permit minor modification to backplug MW-3 at AWWR, budgetary planning estimates for future Underground Injection Control projects, assistance with SWWRF ASR well sampling reductions, and the initiation of operation permit renewal applications for the City's four deep injection well (DIW) systems.

Project Manager, Class I Operating Permit Applications, St. Petersburg, FL. Prepared Class I Permit Renewal Applications for the City's four deep injection well systems, responded to one Request for Additional Information, commented on the Draft Permit Applications, and prepared for and attended the associated public meeting.

Project Engineer, Renewal of the Pasco County Master Reuse System (PCMRS) NPDES Permit, Pasco County, FL. Assisted in all aspects of a project to renew the PCMRS NPDES permit. The PCMRS is permitted for 26 mgd of Part III, IV, and VII reuse. The permit renewal included a complete water balance and modifications to re-rate the existing Part IV rapid rate infiltration basin system and to add a new Part IV high rate sprayfield disposal site. Coincident with this work, the annual embankment inspection required by the ERP was performed, as well as a tabletop exercise and update for the Emergency Action Plan.

Project Manager, 2015 Annual Summary Report – DIW and ASR Systems, St. Petersburg, FL. Project included an annual update of a recurring annual report to evaluate injection and monitoring well hydraulic and water quality data collected through December 2015 from the City's four DIW systems and ASR well system. This project also provided a site visit to each of the City's wells to evaluate well operations and recommend maintenance activities.

Project Manager, SWWRF Injection Wells System Acidization, City of St. Petersburg, FL. Acidized the City's three DIWs and ASR well at their SWWRF with a total of 92,000 gallons of hydrochloric acid. The acidization was performed using a high-rate flushing methodology developed by the firm. Activities for this project included development of the test plan and construction documents, bidding and procurement of the contractor, oversight of acidization implementation, and development of the acidization summary report.

Project Manager, 2014 Annual Summary Report – DIW and ASR Systems, City of St. Petersburg, FL. Project included an annual update of a recurring annual report to evaluate injection and monitoring well hydraulic and water quality data collected through December 2014 from the City's four DIW systems and ASR well system. This project also provided a site visit to each of the City's Wells to evaluate well operations and recommend maintenance activities.

Matt Tennant, PhD, PE

Process/Mechanical

Education

PhD, Environmental Engineering, University of Florida
BS, Civil Engineering, Georgia Institute of Technology

Professional Registrations

Professional Engineer: FL (#68302)

Relevant Qualifications

- Reclaimed water, wastewater, and water experience with Florida local governments
- Specializes in the planning, evaluation, permitting, and design of water and wastewater treatment facilities
- Skilled in utilizing whole-plant process simulations to evaluate and design treatment facilities, including biological processes to stabilize liquid waste and sludge, membrane processes, and corrosion control
- Experience modeling open channel and pipe flow hydraulic conditions within treatment facilities, as well as for conveyance systems
- Knowledge of the use of 3D visualization software and (order-of-magnitude) cost estimating software to create preliminary site plans and budgetary estimates for treatment facilities

Representative Project Experience

Lead Process Engineer, Southwest Water Reclamation Facility (SWWRF) Process Modifications for Nitrogen Removal and Digester Modifications, Manatee County Public Works Department, Bradenton, FL. Lead process engineer for all stages of design for conversion of an existing primary-secondary treatment process to a MLE process for nitrogen removal. Tasks included process and hydraulic modeling, aeration requirements, and equipment selection.

Senior Process Engineer, Wet Weather Overflow Mitigation Program, Phase I, St. Petersburg, FL. Lead process wastewater engineer responsible for hydraulic and process evaluations for three WRFs. Tasks included flow and load analysis, gravity and pressure hydraulic analysis, evaluation of process capacity, preliminary sizing of hydraulic and treatment facilities to increase capacity and reliability and budgetary level cost estimates for recommended improvements.

Lead Wastewater Technologist, Liquids Processing and Emergency Operation Peer Review, City of St. Petersburg, FL. This project involved reviewing recent dry weather flow projections for the City's water reclamation facilities, performing 20-year dry and wet weather flow projections for the City's three active WRFs, identifying hydraulic restrictions in the Southwest WRF. Tasks performed on the project included a thorough review with WRF operations, a condition assessment of key facilities, the update of all flow projections, development of a hydraulic model for gravity flow through Southwest WRF, and a capacity analysis of required processes for the treatment and disposal of reclaimed quality effluent. These findings were documented in a report, reviewed with City staff and presented to City Council.

Staff Engineer, Water, Wastewater and Reclaimed Water Facilities Master Plan for Private Development, Confidential Client, Collier County, FL. Responsible for many aspects of master planning of new water and wastewater utilities for private development, including potable water demand and wastewater flows and loads projections, effluent management alternatives, raw water supply, preliminary design for water and wastewater (including biosolids) processes, preliminary site plans, and preliminary cost estimates.

Staff Engineer, Water and Wastewater Treatment Facilities Master Plan for Private Development, Confidential Client, Charlotte and Lee Counties, FL. Responsible for many aspects of master planning of new water and wastewater utilities for private development, including potable water demand and wastewater flows and loads projections, effluent management alternatives, preliminary design for water

and wastewater (including biosolids and wetland) processes, preliminary site plans, and preliminary cost estimates. Assisted in preparation for regulatory reports including Public Service Commission Report.

Lead Process Mechanical Engineer, Buckman WRF Improvements, JEA, Jacksonville, FL. Lead process mechanical engineer in all stages of design for upgrades to existing WRF. Project upgrades designed to enable WRF to reliability meet nitrogen limits of effluent discharged to St. John's River. Process improvements include addition of anoxic and swing zones in existing aeration basins, new nitrified recycle pump stations, replacement of four existing secondary clarifiers, a new chemical feed system and various hydraulic improvements. Tasks included: dynamic modeling of biological processed and hydraulics throughout WRF, assistance in construction drawings, specification of process and hydraulic equipment, and development of sequencing of construction.

Senior Process Mechanical Engineer, Northwest Water Reclamation Facility (NWWRF) Coarse Screening, City of St. Petersburg, FL. Lead process and process mechanical engineer for the design of two new mechanically cleaned coarse screens with chemical odor control. Tasks include hydraulic and airflow modeling, equipment selection and specification and all design drawings.

Staff Engineer, Water, Wastewater, and Reclaimed Water Facilities Master Plan for Private Development, Confidential Client, Okeechobee County, FL. Responsible for many aspects of master planning of new water and wastewater utilities for private development, including potable water demand and wastewater flows and loads projections, effluent management alternatives, preliminary design for water and wastewater (including biosolids) processes, preliminary site plans, and preliminary cost estimates. Assisted in preparation of DRI submission and other regulatory questions.

Lead Process Mechanical Engineer, Buckman WRF Improvements, JEA, Jacksonville, FL. Lead process mechanical engineer in all stages of design for upgrades to existing WRF. Project upgrades designed to enable WRF to reliability meet nitrogen limits of effluent discharged to St. John's River. Process improvements include addition of anoxic and swing zones in existing aeration basins, new nitrified recycle pump stations, replacement of four existing secondary clarifiers, a new chemical feed system and various hydraulic improvements. Tasks included dynamic modeling of biological processed and hydraulics throughout WRF, assistance in construction drawings, specification of process and hydraulic equipment, and development of sequencing of construction.

Senior Process Mechanical Engineer, Rowlett Creek Regional Wastewater Treatment Plant Peak Flow Improvements, North Texas Municipal Water District, TX. Process and process mechanical engineer on design of peak flow expansion to add wet weather capacity up to 120 mgd for a 24-mgd AADF plant. Improvements include new headworks, MBR and UV treatment facilities and hydraulic improvements including pump stations, junction structures and yard piping. Tasks includes: alternatives evaluation, MBR evaluation, process and hydraulic modeling and design and specification of treatment and hydraulic equipment**.**

Lead Process Mechanical Engineer, Blacks Ford WRF Phase 4 Expansion, JEA, Jacksonville, FL. Lead process mechanical engineer for multiple facilities in 3-mgd expansion of existing facility. WRF will utilize a five-stage Bardenpho process with an oxidation ditch arrangement to provide advanced wastewater treatment. Tasks included process modeling, hydraulic modeling, equipment sizing and report and drawing preparation.

Staff Engineer, Water, Wastewater, and Reclaimed Water Facilities Feasibility Study for Private Development, Confidential Client, St. Lucie County, FL. Assisted in many aspects of master planning of new water and wastewater utilities for private development, including potable water demand and wastewater flows and loads projections, effluent management alternatives, preliminary design for water and wastewater (including biosolids) processes, preliminary site plans, and preliminary cost estimates. Assisted in preparation of Development of Regional Impact application and St. Lucie County approval submissions.

Mechanical Engineer, Wastewater Treatment Facility, Upgrade, Coral Springs Improvement District, Coral Springs, FL. Part of the process mechanical team for 2-mgd renovation of existing facility. Tasks included flow and load projections, process modeling, equipment sizing and drawing and specification support.

David Ashman

Facilities Construction

Education

BS, Civil Engineering
Advanced Academic Diploma-Structural Engineering, University of Technology
Certificate in Construction Technology, University of Technology

Relevant Qualifications

- Extensive reclaimed water, wastewater, and water experience with Florida local governments
- Experienced in providing targeted and professional services for design-build (EPC) water, wastewater, stormwater and reclaimed water infrastructure projects, participating in design, construction, and commissioning phases
- Expertise in project- specific financial performance, owner controlled contingency and firm contingency development and management, contract management, and communication with clients and owners, scheduling, project financial management including change orders and pay applications, and coordination of self-perform activities
- As a resident engineer, conducted site inspections, coordinated design team effort during construction phase, directed permitting efforts with local and state agencies, submittal review, and requests for information, among others

Representative Project Experience

Construction Manager/Quality Assurance Manager, Central Pasco Beneficial Water Reuse Project, Pasco County Utilities, FL. Responsible for onsite daily management of contractor and quality assurance for a $13.2 million, 5-mgd recharge treatment wetlands. Coordinates design interpretation with core design team, reviews contractor progress and schedule submittals, monthly pay applications, leads bi-weekly progress meetings, and developed and implements the Quality Management Plan for the project. Evaluates and makes recommendation to the client regarding the disposition of change management items (change orders, request for proposals, authorized allowance release, etc.). The project includes 15 cells (constructed wetlands habitat: size ranging from 5 to 15 acres) consisting of native earthfill berms, control flow paths, deep zones, specialized planting/seeding, native tree planting; 5 mgd of reclaimed water to be received from the Pasco County Master Reuse System; approximately 400-acre total project area with 132.5 wetted acres; approximately 240,000 CY of excavation – embankment volumes; approximately 3,700 linear feet of 24-inch DIP, approximately 40,000 linear feet of 8-inch PVC (purple) piping, more than 42,000 linear feet of fencing (split rail and field fencing); and automatic valving system monitored via centralized supervisory control and data acquisition system.

Construction Manager/Quality Assurance Manager, Boyette Road Reclaimed Water Reservoir, Pasco County Utilities, Wesley Chapel, FL. Responsible for onsite daily management of contractor and quality assurance for a $31 million, 500-MG earthen embankment reclaimed water reservoir. Coordinates design interpretation with core design team, reviews contractor progress and schedule submittals, monthly pay applications, leads weekly progress meetings, and developed and implements the Quality Management Plan for the project. Evaluates and determines disposition of change management items (change orders, request for proposals, authorized allowance release, etc.).

Construction Manager/Assistant Deputy Design Manager, Utility Capital Improvement Projects (UCAP) Design-Build Program, City of Tampa, FL. Responsible for the design, permitting, public and stakeholder involvement, safety, and construction of the $100 million UCAP program. The UCAP program delivers high-profile critical water, wastewater, and stormwater projects located in difficult construction environments (urban areas congested with existing utilities, river crossings, narrow streets with tree canopies, low overhead power lines, etc.). The 25 projects of more than 40 miles of pipelines includes 47 trenchless crossings of over 5,400 linear feet, including 2,300 linear feet of microtunnels and 800 linear feet of HDD. The eight microtunnels were under heavily traveled arterial highways and an environmentally sensitive river crossing in densely populated areas and a restricted workspace within a City park. Eight projects were under design and construction simultaneously, emphasizing the critical importance of the program management skills, tools, and processes of the firm. To ensure coordination

and schedule compliance of projects, and minimize the construction impacts while meeting the City's permit and schedule requirements, we developed a public outreach involvement program through best practices sharing, which is now yielding a 92% reduction of calls from a similar program performed 3 years prior to the UCAP Program (from 87 calls per million dollars of construction spent to 7). As part of the UCAP Program, participated in the following specific projects:

- *Construction Manager, Duck Pond Outfall Improvements, Donut Pond Pump Station.* This $5.7 million project delivers a 100-cffs capacity stormwater pump station.
- *Construction Manager, Duck Pond Outfall Improvements, 113th Ave 42-inch-diameter Force Main.* This $2 million project consist of constructing approximately 1,341 linear feet of 42-inch force main, approximately 1,060 linear feet of 8-inch sanitary sewer main, asphalt pavement restoration, and concrete driveways, curb, and sidewalk restoration.
- *Construction Manager, Duck Pond Outfall Improvements, 30th Street 54-inch-diameter Force Main.* The 30th Street Stormwater Force Main is a vital part of the City's Central Collection System.
- *Construction Manager/Project Manager/Assistant Design Manager, Downtown Water Main Improvements Phases A and B/C.* This $17 million project consisted of the design, constructability and value engineering reviews, permitting, schedule preparation, cost estimating, preparation of MOT plans, public outreach and involvement, inspection and 33,000 linear feet of distribution 12-inch mains in the inner business district of the City of Tampa.
- *Construction Manager, York Street Stormwater Community Redevelopment Area.* The $5.7 million project included constructability and value engineering reviews, schedule preparation, preparation of MOT plans, public outreach and involvement, inspection and construction within the Port of Tampa.
- *Construction Manager, Washington Street Stormwater Community Redevelopment Area.* This $2.1 million project consisted of stormwater piping and relocated water main, wastewater piping, relocation of electrical lines, gas line relocations and above grade restoration.
- *Construction Manager/Project Manager/Assistant Design Manager, 19th Street Water Transmission Main.* This $1.8 million project consisted of the design, constructability and value engineering reviews, permitting, schedule preparation, preparation of MOT plans, public involvement, inspection, and construction.

Assistant Project/Construction Manager, New Operations and Service Center, Bonita Springs Utilities, FL. This construction management-at-risk project included site development, stormwater control systems, and a state-of-the-art 23,000-square-foot administration building and warehouse. Responsible for preparing agenda facilitation of client and subcontractor progress meetings, establishing subcontracts and managing project's contract, financials, and scheduling, coordinating subcontractor activities and materials purchasing. Also responsible for managing the submittal process, acting as a liaison between the design engineers, client representatives, and subcontractor. Other activities included conducting inspections during construction and project closeout.

Construction Manager, Dunes Reverse Osmosis Water Treatment Plant, Phase 1 and 2, Flagler County, FL. Responsibilities on this $3.6 million project included selecting multiple subcontractors and suppliers, coordinating and managing subcontractor's scope and implementation, managing the material procurement and delivery schedule, assisting in maintaining and tracking the project schedule and budget against overruns; providing support and guidance to the onsite health, safety, and quality assurance program supervisor; evaluating change requests against contract requirements; managing the change management process, including generating RFPs; preparation and review of cost estimates; performing continuous value engineering; negotiating changes; and assisting in the preparation of change orders. Involved in ordering, tracking, and documenting critical equipment fabrication and delivery schedule and participating in the planning and execution of equipment startup activities.

Resident Engineer, F. Wayne Hill Water Resources Center Expansion, Phase 2, Contract 2, Gwinnett County, GA. Responsibilities on this $113.5 million project entailed construction contract administration duties such as managing the technical submittal process; managing the request for information process; managing the materials testing program; providing technical support and guidance to the quality assurance team; evaluating change requests against contract requirements; managing the change management process, including generating RFPs; preparation and review of cost estimates; performing continuous value engineering; logging and tracking submitted proposed change orders; negotiating changes; drafting change negotiation memorandums to the County; and assisting in the preparation of change orders. Also coordinated as-built records documentation and operation and maintenance manual submittals approval process and specialty inspection visits by senior technologists.

Allison Lewis, PE

Facilities Construction; Feasibility Study; Environmental/Ecology Permits

Education

ME, Environmental Engineering Sciences, University of Florida
BS, Environmental Engineering Sciences, University of Florida

Professional Registrations

Professional Engineer: FL (#85332)

Relevant Qualifications

- Reclaimed water, wastewater, and water experience with Florida local governments
- Experience includes construction management services, wastewater permitting, natural treatment systems design, assisting with data collection and management for wetland and surface water programs, and public involvement

Representative Project Experience

Project Engineer, Partially Treated Surface Water ASR Pilot Study, Peace River Manasota Regional Water Supply Authority, FL. The Authority is performing a pilot study to determine the benefits and potential impacts of utilizing partially treated surface water as a source for their potable water aquifer storage and recovery (ASR) Class V Well system. Assisted in the procurement of Xylem Dewater Solutions to help with this study. Currently provides data analysis support to draft the pilot study report that will analyze and summarize the flow and water quality data collected.

Project Engineer, Southwest Water Reclamation Facility (SWWRF) Recharge Well System—Wet Weather Management, Manatee County, FL. This project involved the construction of a new onsite recharge well for wet weather management at the County's SWWRF. Assisted in inspections during the construction of the Class V recharge well. The SWWRF recharge well provides beneficial use of excess reclaimed water during the wet season by pumping into a hydrologically altered aquifer.

Project Engineer, Master Reuse Wet Weather Management Well System, Manatee County, FL. This project consists of the design, permitting, and construction of three Class I injection wells to provide additional wet weather disposal of reuse water for the County. As project engineer, assists in providing professional engineering services for the design, permitting, bid phase services, and services during construction for this project.

Project Manager, Cortez Road Mechanical Integrity Testing, Manatee County, FL. Mechanical integrity testing of the County's Class I injection well as required by their operating permit requirements. This project includes preparation of a mechanical integrity test plan, resident observation of the mechanical integrity testing, and an engineering report describing the results of the mechanical integrity testing and applicable recommendations.

Project Engineer, Central Pasco County Beneficial Water Reuse Project, Pasco County, FL. Supported the permitting, design, and construction of a 175-acre groundwater recharge treatment wetland that polishes 5 mgd of reuse water from Pasco County's Master Reuse System (PCMRS). Has served on all aspects of this project from permit to construction. Notably, assisted in the permitting of a major modification of the PCMRS to incorporate the groundwater recharge treatment wetland with no need for RAI. Also conducted the water quality performance modeling of the groundwater recharge wetland and supported the project to construction with the preparation of the front-end specifications. Assisted in the project's services during construction phase documenting bi-weekly construction progress meetings and prepared monthly construction progress reports to the County.

Project Engineer, SWWRF Process Modification for Nitrogen Removal and Digester Modifications, Manatee County, FL. This project involves the conversion of the County's SWWRF from a conventional activated sludge treatment system to a modified Ludzak-Ettinger treatment system. The project also involves converting their anaerobic digesters to aerated sludge holding tanks. Currently assists in inspections during the construction of the conversion.

Project Engineer, SWWRF Automatic Backwash Filters (ABW) Filter Rehabilitation, Manatee County, FL. This project involved services during construction of the rehabilitation of the ABW at the County's SWWRF. Provided services during construction during the installation and manufacturer start-up of the ABW filters.

Project Manager, Homosassa Springs Habitat Enhancement Floating Wetland Project, Southwest Florida Water Management District, FL. Currently managing this project for the design, installation, and monitoring of the floating wetland system pilot within the Ellie Schiller Homosassa Wildlife State Park. The goal of this project is to improve the aquatic and water quality habitat in Homosassa Springs. The design of the floating wetlands systems, coordination with various agencies, construction material procurement, and installation of the floating wetlands has been completed for this project. Currently, quarterly monitoring of the floating wetland vegetation is being conducted.

Project Engineer, Crews Lake Naturals Systems Restoration, Pasco County, FL. This project involves restoring a historically man-altered dry lake through the application of the County's Master Reuse System for a 4-mgd constructed treatment wetland. The initial phase includes a 12-month baseline monitoring study, permitting, and preliminary engineering design. Assists in all aspects of this effort. Currently, conducts the monthly water quality and quarterly biota sampling events and is leading the PCMRS permit modification application required to permit this system.

Project Engineer, Groundwater Recharge Wetland Park, City of Ocala, FL. This project involves the design and permitting of a 30-acre groundwater recharge wetland park for the City's reclaimed water. The goal of this project is to improve water quality and increase groundwater recharge within the sensitive and regulated Silver Springs springshed. Currently conducting the water quality performance of the treatment wetland system, assisting in design, and permitting of the groundwater recharge wetland.

Project Modeler, Wet Weather Overflow Mitigation Program—Phase 1, St. Petersburg, FL. This project involved a high-level evaluation of the City's wastewater collection system and three active WRFs to mitigate potential wet weather overflows caused by a future storm event similar to an extreme flow event that occurred in the summer of 2015. Supported the hydraulic evaluation of the WRFs by modeling the facilities under varying flow conditions using the firm's proprietary hydraulic modeling software WIN-HYDRO™. Results from the model run were then summarized in the final deliverable report.

Project Engineer, Freedom Park Vegetation Management and Operational Services, Collier County, FL. This project involved an inventory and assessment of the vegetation and operation management of the Freedom Park Stormwater Treatment Wetland. Conducted the vegetation assessment of the system and developed vegetation coverage maps displaying the data collected in the field. These findings were compared to the original planting plan and documented in a technical memorandum. From this initial assessment, an evaluation of the physical vegetation management was conducted and presented to the client. Conducted a water balance on the system to determine optimum operational protocol related to attaining water levels within the wetland to maintain desired wetland species. These findings were summarized into a technical memorandum.

Assistant Public Involvement Manager, Utilities Capital Improvement Program (UCAP), City of Tampa, FL. The UCAP program delivers high-profile critical water, wastewater, and stormwater projects located in difficult construction environments (urban areas congested with existing utilities, river crossings, narrow streets with tree canopies, low overhead power lines, etc.). As assistant public involvement lead, responsible for assisting in the preparation of strategy presentations, coordination and management of media relations and community outreach for the $30 million infrastructure projects in Downtown Tampa. In addition, provided support to the construction services management team by developing meeting agendas and minutes, providing audit support, developing a purchase order excel system, maintaining the construction hotline for the public, preparing quarterly Minority Business Subcontractor Reports, and composing work directive change orders.

Project Engineer, Data and Documentation Summary for the Eastern Flow Path Water Quality, South Florida Water Management District (SFWMD), FL. Consolidated historic information and existing water quality data from technical documents and permits related to the existing water control structures, conveyance system, and water quality monitoring network of the Eastern Flow Path into a final deliverable report that facilitated the development of sub-regional source control projects in the S 5A Sub-basin and the East Beach Water Control District. This project was conducted in support of the District's Everglades Restoration Strategy.

R. Christopher Sharek, P.E., BCEE, PMP, Env SP

President,

Sharek Solutions, Inc.

Sharek Solutions
Listen. Create. Implement.

Education

Bachelor of Science in Environmental Engineering, University of Central Florida
Master of Science in Water Resources Engineering, University of Central Florida

Professional license

Licensed FL Professional Engineer, No. 58170

Certifications

Board Certified Environmental Engineer (BCEE)
Project Management Professional (PMP)
Envision Sustainable Professional (ENV SP)

Mr. Chris Sharek is the President of Sharek Solutions, Inc., founded in June 2011. He has over 20 years of engineering experience in southwest Florida including design, construction oversight, and ownership and maintenance responsibilities of potable, wastewater, and reclaimed water systems. Other experience includes planning, technical design, permitting, and construction observation for utility improvements, stormwater, and other public infrastructure improvement projects.

Chris teaches mathematics as an adjunct professor at the State College of Florida (formerly Manatee Community College) for nine years and has translated this experience into successful public outreach presentations. He remains actively involved and served as a past president of the local American Public Works Association and American Society of Civil Engineers SunCoast Branches and currently serves as the President Elect for the State Section of ASCE. He is also a graduate of the Leadership Sarasota, Leadership Manatee, and Gulf Coast Leadership Institute Programs.

Experience

Deep Injection Well & Pump Station – *Sarasota, FL (City of Sarasota)* — Client manager working with the City of Sarasota and internal hydrogeologic staff to complete the preliminary design, well siting, design, permitting, and construction oversight for the City's first Deep Injection Well. Provided extensive coordination with City staff, FDEP, SWFWMD, and hydrogeologic staff to successfully construct this exploratory well to dispose of wet weather reclaimed water in addition to the brine concentrate from the water treatment process. This solution was developed after continued discussions with regulatory staff about discharge exceedance limits into surface water bodies. Therefore, the deep injection well solved both problems – disposal of brine, as well as disposal of wet weather reclaimed water, while meeting all timeline requirements of the FDEP Consent Agreement.

Water Audit & Evaluation – *Palmetto, FL (City of Palmetto)* — Client services manager and project engineer assisting the City of Palmetto to conduct a potable water audit and evaluation as required by the Southwest Florida Water Management District. Annually, the City develops and reports their Public Supply Annual Report to the SWFWMD. Based on the reported values, a study was required to be conducted to identify the source(s) of unaccounted for water. Study included an evaluation of the nine interconnected meters providing potable water to the City by Manatee County, accuracy in meter reading, meter reporting, flushing reports, fire hydrant use, and billing data. Ultimately, the unaccounted for water was identified and improvements were planned to reduce the City's reliance on potable flushing to maintain disinfectant residual.

Production Wells C-9 & C-10 – *Sarasota, FL (City of Sarasota)* — Client services manager also serving as project manager for the City to design, permit, and connect two new raw brackish water production wells to the City's Water Treatment Plant. Services provided included coordinating survey, subsurface utility engineering, design, permitting, bidding and construction with project design team and City staff. Project involved hydraulic modeling and design of 5,000 feet of 8-inch and 12-inch raw water main piping and also included flow metering, telemetry, valves, and above-ground appurtenances for each stainless-steel wellhead.

Engineer of Record Miscellaneous Assignments – *Sarasota, FL (City of Sarasota)* — Client manager working with the City of Sarasota staff on varying assignments including potable water main improvement design, pump station design and construction, state permitting of surface water discharges, ground storage tank design and construction, and various studies, evaluations, and recommendations. Served the City for over seven years in this capacity. Provided extensive coordination with City staff, FDEP, SWFWMD, and FDOT staff to successfully improve utilities while minimizing the impact to the utility customers. Also provided tracking and reporting to FDEP of Consent Agreement requirements.

Nokomis Force Main – *Sarasota, FL (Sarasota County)* — Design-Build Contract Administrator for this Sarasota County project. Working with a local contractor and engineer of record, oversaw design, permitting, and completed construction of 2,200 linear feet of 4-inch force main in a narrow and congested corridor along Colonia Avenue. Installation primarily used directional drill technique to minimize traffic disruptions and surface restoration. Project was completed ahead of schedule and within the established budget.

Phase 2C Pipeline Evaluation Study – *Venice, FL (Peace River / Manasota Regional Water Supply Authority)* — Project engineer performing as a sub-consultant reviewing the alignment and timing of a regional interconnecting potable water pipeline along US 41 and River Road. Identified in 2006, this regional pipeline connects the City of North Port Water Treatment Plant (WTP) with the Sarasota County Carlton WTP. Evaluation of the route included pipeline length, public inconvenience, safety, special crossings, operation and maintenance accessibility, permitting, right-of-way/easement availability, geotechnical conditions, environmental impacts, and long-term planning. Significant consideration was given to the construction timing and coordination with other public and private projects within the right-of-way corridor.

Lockwood Ridge Force Main Interconnect – *Sarasota, FL (Sarasota County)* — Client services manager for Sarasota County responsible for coordinating survey, subsurface utility engineering, design, permitting, bidding and construction with project design team and County staff. Project involved the design of 3.1 miles of 20-inch wastewater force main connecting two regional County wastewater treatment facilities to allow for flow equilibration. Project challenges included six horizontal directional drills, including one under SR 780 Bee Ridge Road, a tight and utility-congested corridor, private irrigation wells and setbacks, and maintenance of traffic through local neighborhoods. Provided quality control, and project scheduling, and overall client satisfaction with project delivery.

Central County Deep Injection Well – *Sarasota, FL (Sarasota County)* — Client services manager for Sarasota County. Coordinated with the hydrogeologic staff, developed work assignments for permanent above grade piping, valving, and appurtenances as well as the design of an improved pump station for the deep injection well. Supported hydrogeologic efforts with FDEP to secure the exploratory well permit and then development of the operations and maintenance requirements to maintain permanent capacity. Provided permitting coordination with FDEP and engineering support along with County and hydrogeologic staff.

Atlantic Pump Station & Pipeline – *Sarasota, FL (Sarasota County)* — Client services manager for Sarasota County coordinating survey, subsurface utility engineering, design, permitting, bidding and construction with project design team and County staff. Project included the design and construction oversight for a master pump station to pump wastewater flows away from the abandoned Atlantic Utilities Wastewater Treatment Plant. Project included the plans for demolition of the existing facility and also included more than 1,300 linear feet of force main including a horizontal directional drill under a major stormwater channel.

Regional Water Main Interconnect at Honore Avenue – *Sarasota, FL (Sarasota County)* — Client services manager for Sarasota County coordinating survey, subsurface utility engineering, design, permitting, bidding and construction with project design team and County staff. Project included the design and construction oversight of 5,500 linear feet of 24-inch water main along Honore Avenue from Northridge Road to Palmer Parkway. Project challenges included overhead power lines, large oak canopies, and maintenance of traffic.

Regional Water Main Interconnect at State Road 681 – *Sarasota, FL (Sarasota County)* — Client services manager for Sarasota County coordinating survey, subsurface utility engineering, design, permitting, bidding and construction with project design team and County staff. Project included the design and construction support for 11,000 linear feet of 24-inch water main connecting the Peace River Manasota Regional Water Supply Authority's pipeline near the Sarasota County Landfill to Honore

Avenue. Project included significant horizontal directional drills under Cow Pen Slough, State Road 681, and Interstate 75.

East Bay Force Main Extension – *Sarasota, FL (Sarasota County)* — Client services manager for Sarasota County coordinating survey, subsurface utility engineering, design, permitting, bidding and construction with project design team and County staff. Project included the design and construction oversight of 9,500 linear feet of 16-inch wastewater force main along East Bay Street from US 41 to Pine Ranch East Road. Project challenges included private potable and irrigation wells, separation distances, a jack and bore under US 41 and maintenance of traffic.

Carlton Wellfield Expansion – Sarasota, FL (Sarasota County). — Serving as project manager and lead technical professional, provided design, permitting, and construction management services for this project involving hydraulic modeling and evaluation of the existing wellfield collection system, planning for future capacities, wellhead design, and pump selection. Results from hydraulic study included the identification of two additional brackish water production wells to improve rotational capacity of the wellfield.

Instrumentation & Control Improvements – *Punta Gorda, FL (Peace River / Manasota Regional Water Supply Authority)* — Contract Administrator teamed with control systems design expert establishing programming standards for tags, migration to new tag designations, adjustments to historian software archiving system, and other control system modifications. Approach included a “test computer” to confirm successful integration with overall control systems prior to live deployment.

Selmon / I-4 Connector Roadway Utility Relocations – *Hillsborough County, FL (FDOT District Seven)* — Client manager and QA/QC specialist working with the City of Tampa through a Joint Project Agreement with FDOT to relocate $3M worth of City water and wastewater utilities to make room for the 1.5 mile elevated roadway. As the bridge contract allowed four different types of foundations, the utility relocations were required to be designed to accommodate any of the four scenarios. Trenchless technologies were employed wherever feasible and cost-effective, including horizontal directional drilling, sliplining, and pipebursting construction approaches. Extensive coordination with City and FDOT staff was required in order to successfully relocate the utilities while minimizing the impact to the utility customers during construction.

US 41 Water Main Improvements – *Sarasota, FL (City of Sarasota)* — Client services manager working with a design team for the City of Sarasota on a 3.1 mile potable transmission main replacement of an older asbestos cement and ductile iron pipeline within a congested FDOT corridor. Evaluation for replacing this pipeline included trenchless technologies such as sliplining and pipebursting construction methodologies. The final recommendation was to install a new pipeline one block east of the current pipeline to avoid future conflicts within the FDOT corridor. Smaller distribution and service pipelines were provided to serve the customers along the original corridor, which makes operations and maintenance of this pipeline easier for the City.

Solid Waste Engineer of Record – *Sarasota, FL (Sarasota County)* — Client services manager working with the Sarasota County Solid Waste staff on varying assignments including their active and inactive landfill sites. Projects included the design and construction of a public park located on the closed landfill, various stormwater improvements, borrow pit design and permitting, leachate pumping and pipeline improvements, construction oversight, and various studies, evaluations, and recommendations. Served Manatee County for over three years in this capacity. Provided coordination with County staff, FDEP and SWFWMD staff to successfully construct these infrastructure improvements.

Utility Chemical Injection Site Evaluation – *Palmetto, FL (City of Palmetto)* — Client services manager and project engineer assisting the City of Palmetto to evaluate a residential property as a suitable location for the siting of a chemical injection system for the City’s potable water system. By identifying the correct location, the City will reduce their need to flush the potable system to maintain required levels of disinfectant. This evaluation included a mold / moisture survey, an asbestos survey, and a structural evaluation of the facility at the potential site.

Northeast Water Booster Station – *North Port, FL (City of North Port).* As program manager for the NE Water Booster Station task assignment under this master contract, he is responsible for bid/construction phase services. This on-call contract involves preparing and processing permits as engineer-of-record; performing engineering analysis of alternatives; preparing preliminary engineering and other designs; estimating project costs; preparing contract documents; certifying, signing, and sealing

documents prepared; conducting studies and investigations; and performing any other miscellaneous engineering services assigned by the City of North Port.

Water & Sewer Replacement Projects – *Mountain View, CA (City of Mountain View)* — Performed as sub-consultant providing quality control, constructability review, and peer review for prime consultant. The project consisted of two area retrofit projects to replace failing water and wastewater infrastructure. Plans review identified cost-savings for the owner through use of trenchless technologies such as slip-lining and pipe-bursting existing infrastructure as well as use of joint deflection in lieu of fittings and pipe restraints. Through the constructability review, risks were reduced by utilizing existing pipe routes/corridors rather than the installation of new pipelines within already utility congested rights-of-way.

Chris was the utilities manager for the City of Venice, Florida. He oversaw a staff of over seventy. Specifically, he spear-headed the implementation of a radio-read meter exchange program, which enabled the City to install radio-read meters throughout its entire utility system. In the role of assistant city engineer for the City of Venice, Chris was responsible for technical design, permitting, and construction observation for utility relocation, paving, stormwater, and parking lot improvement projects. His specific duties included:

- Administered a unique management service contract involving overseeing the operation and maintenance of the city's potable, wastewater, and reclaimed water systems.
- Analyzed trends and tracked developmental impacts to the city's water and wastewater plant capacities.
- Recommended expansions, upgrades, and improvements as necessary to maintain level of service to the community.
- Managed capital improvement for the water distribution division, including providing assistance to consulting engineers, contractors, and land development professionals.
- Formulated and evaluated short- and long-term strategies for improving, modifying, or expanding city utility infrastructure and plant facilities to meet increasing demands.
- Provided technical review of utility infrastructure for private development and public improvement projects.
- Provided technical design and obtained permits and construction observation for city utility relocation, paving, stormwater, and parking lot improvement projects.
- Reviewed construction plans for private development and provided engineering support services for other city departments.

PROFESSIONAL & COMMUNITY AFFILIATIONS:

American Public Works Association (APWA) – *Board of Directors (2003-2004), Vice Chair (2010), Chair (2011), State Representative (2014-2015)*

American Society of Civil Engineers (ASCE) – *President-Elect State Section (current), Board of Directors (2016-2018), President (2002), Vice President (2001), ASCE SunCoast Branch Government Engineer of the Year (2003 and 2005)*

American Water Works Association (AWWA)

Toothpick Bridge Building Contest – *Co-Chair (1998 – 2014)*

Order of the Engineer – *2002*

Leadership Sarasota County Participant – *2005, Program Chair, 2007-2008*

Leadership Atkins (Nationwide Program) Participant – *2010*

Riverview High School Executive Internship Partner & Award Recipient – *2010 - 2013*

Leadership Manatee County Participant – *2014*

Certified Asbestos Survey & Mechanical Inspector – *2015*

Gulf Coast Leadership Institute Graduate – *2016*

Jeff Lehnen, PG

Technical Reviews and Quality Control

Education

BS, Geology, University of Florida

Professional Registrations

Professional Geologist: FL (#447), NC
Certified Professional Geologist (CPG): American Institute of Professional Geologists

Relevant Qualifications

- More than 40 years of geohydrologic experience groundwater resource investigations, groundwater flow and quality evaluations, alternative water supply planning, wastewater storage and disposal studies, and design, construction and testing of monitoring well networks, recovery systems, upper and lower Floridan aquifer water supply wells, Cretaceous formation Class I injection and alternative supply wells, Class I and V deep injection wells, aquifer storage and recovery (ASR) wells, production wells, and monitoring wells in Florida for local governments
- Permitting and negotiation experience with the Florida Department of Environmental Protection (FDEP), Environmental Protection Agency (EPA), and water management districts
- Experience with aquifer performance testing (APT), groundwater flow models, geophysical logs, geologic data, hydraulic tests, and water quality data to optimize the design of production, injection, ASR, and monitoring wells
- Active with the Florida Water Environment Association Utility Council in promoting regulatory policy changes affecting ASR and injection wells

Representative Project Experience

Senior Reviewer, Southwest Water Reclamation Facility Recharge Well System, Manatee County, FL. Reviewed the design developed for a Class V aquifer recharge system as a groundwater recharge by injection system. Reviewed groundwater model that was developed to simulate changes to the potentiometric surface of the UFA, specifically in the MIA, under four different recharge scenarios. The groundwater flow model DWRM2.1, developed by the Southwest Florida Water Management District (SWFWMD), was the basis for the model used to simulate recharge at the proposed aquifer recharge sites. A site-specific model was created from DWRM2.1 using the focus telescopic mesh refinement approach, which was automated by the DWRM2.1 model's pre- and post-processor, Groundwater Vistas.

Senior Reviewer, Central Pasco County Beneficial Water Reuse Project, Pasco County, FL. Reviewed the conceptual model assumptions and modeling results for groundwater modeling. Designed and implemented a field investigation study to characterize the site hydrology and hydrogeology including water levels in sand and limestone aquifers, water levels in wetlands and ponds, hydraulic parameters, infiltration rates, geology, groundwater flow direction, groundwater flow gradients, and precipitation. Developed and calibrated transient and steady state groundwater flow models based on site characterization data. Utilized the groundwater flow model to perform groundwater mounding predictive analysis associated with infiltration wetlands proposed to be constructed on a hydrologically altered site. Quantified predicted infiltration rates and hydroperiods for proposed infiltration wetlands.

Senior Hydrogeologist, Wellfield Capacity Evaluation and Optimization Tool, Gainesville Regional Utilities, FL. Responsible to developing a capacity evaluation and optimization tool to address well drawdown interference problems at Murphree Water Treatment Plant (WTP). The analytical tool is used to predict the wellfield's firm raw water pumping capacity and develop operating procedures and pumping capacity changes that will increase the wellfield's raw water production by reducing drawdowns and well interference. The tool simulates wellfield operations and was used to develop a matrix of interference for the 15 wells in the wellfield for both transient and steady state conditions. The tool gives the operators a series of well operation and rotation tables, which optimize wellfield operation to drawdown and water quality for incremental demand scenarios.

Project Manager/Senior Hydrogeologist, Lake Okeechobee/Paradise Run 50-mgd ASR Demonstration Project, Okeechobee, FL. Studies included GIS applications for ASR system siting, analyses of alternatives for water delivery/water management of ASR system source waters, conceptual design, operational plan development, groundwater modeling to assess risk of extended withdrawal effects on other users of the Floridan aquifer for irrigation/water supply, constructed wetland evaluations for pretreatment, engineering design, field investigations including surveying and geotechnical studies, surface water hydrologic/hydraulic modeling, and inverted siphon studies.

Project Manager, ASR Feasibility Screening Tool, St. Johns River Water Management District, FL. Project manager for the preparation of the ASR feasibility screening tool developed under the Alternative Water Supply Strategies Program. The publication presents a methodology for evaluating the water resources needs, hydrogeologic and water quality factors, and costs of alternatives necessary to evaluate whether ASR is a feasible option at a particular site or facility.

Project Manager/Senior Consultant, Class I and V Injection Well and ASR Projects, FL. Has served as project manager or senior consultant of more than 20 Class I and V injection well and ASR systems. These projects typically include design, permitting, and construction of 1,000- to 3,500-foot wells, monitoring wells, pumping stations, SCADA, and instrumentation. Experience includes permitting and design of the first fluid seal Class I well in Florida for Hercules, Inc.; installation of stainless-steel and fiberglass-reinforced plastic tubing in injection wells for industrial clients; and acidization, mechanical integrity testing, packer testing, and pumping tests in water supply and injection wells.

Expert Witness, Southwest Wastewater Treatment Plant (WWTP), Manatee County, FL. Provided expert witness services for an administrative hearing for a Class I injection well construction permit. The intervenors maintained that the hydrogeology of the area was not fully understood and that migration of injected water could occur. Testing results from a test well demonstrated that the field conditions were suitable for injection and the hearing officer ruled in favor of the County on all challenged issues.

QA/QC Review, Deep Injection Well, Tropicana Products, Inc., Bradenton, FL. Provided QA/QC review for the Class V, Group 4 deep injection well for Tropicana Products in Bradenton.

Senior Hydrogeologist, Class I Injection Well Permitting, City of West Melbourne, FL. Has provided hydrogeologic services to the City of West Melbourne for more than 25 years. Responsible for the design, permitting, construction, and startup of the City's Class I injection well system in 1986. Assisted with securing the FDEP operating permit, rehabilitating the monitoring wells, designing a replacement deep zone monitoring well, and all 5-year mechanical integrity tests. Assisted the City in obtaining a capacity re-rate for the injection well system from 4.8 to 6 mgd.

Senior Hydrogeologist, Wellfield Protection Services, Florida Keys Aqueduct Authority, Florida City, FL. Project involved wellfield protection services at the J. Robert Dean WTP. As senior hydrogeologist, providing QC review, technical guidance, and data interpretation on the project.

Geologist, Plant Smith Injection Well System, Gulf Power Company, Panama City, FL. Provided hydrogeologic services to drill and test a 7,000-foot-deep exploratory well to evaluate potential injection zones and determine their capacity for disposal. This well is one of only two injection wells drilled to this depth in Florida. The firm provided service for the design of the drilling and testing program, permit application, services during construction and testing, and design of the injection system pump station.

Senior Hydrogeologist, CUP Permitting, Water Supply Planning, Wellfield Expansion, and Testing, JEA, Jacksonville, FL. Senior hydrogeologist for the project under which JEA plans to consolidate the water supply system of 25 wellfields and water plants and rehabilitating and constructing 30 new upper and lower Floridan aquifer supply wells and two pipeline river crossings intended to interconnect the wellfields by the year 2030. Led the groundwater evaluations for renewal of their CUP which requires extensive groundwater flow modeling of predictive scenarios, evaluation of impacts to local and regional wetlands, lakes and springs, and development of a regional groundwater monitoring plan intended to complement the SJRWMD and USGS monitoring networks. The CUP was renewed in 2012 and consolidated 31 separate CUPs under one permit. The allocation allows for up to 155 mgd in 2030 and is one of the largest public utility uses in Florida.

Lead Hydrogeologist, Third Party Area-wide Environmental Impact Statement, U.S. Army Corps of Engineers Jacksonville District, FL. Lead hydrogeologist for the comprehensive study of the environmental impacts of continued phosphate mining affecting two major watersheds and sub-basins. Responsible for the team utilizing the SWFWMD DWRM2 regional groundwater model to evaluate the no-action alternative, the applicants' preferred alternatives, and offsite alternatives.

Gerrit Bulman, PG

UIC Permitting/Well Design

Education

MS, Geological Sciences, University of Alabama
BS, Honors, Geological Sciences, Brown University

Professional Registrations

Professional Geologist: FL (#2697)

Relevant Qualifications

- Serves as the firm's injection well lead for South Florida, where Class V drainage wells and Class I municipal and industrial deep injection wells (DIWs) have been installed and operated by municipalities for decades
- Has successfully managed aquifer storage and recovery (ASR) well, deep injection well, reverse osmosis (RO) supply well, monitoring well and stormwater drainage well permitting, bidding, construction, and testing projects
- In-depth familiarity with the Florida Department of Environmental Protection (FDEP), water management districts, and other local and state regulations in Florida
- Experienced with groundwater modeling, aquifer testing, sampling and analyses, and obtaining water use and well construction permits
- Knowledgeable of groundwater flow modeling (MODFLOW), pumping test analysis, GIS (ArcGIS), and water use permitting

Representative Project Experience

Project Manager/Hydrogeologist, Aquifer Storage and Recovery (ASR) and Test Wells, City of Boynton Beach, FL. Coordinated technical and field resources to complete the construction and testing of an ASR well and two Floridan Aquifer monitor wells to assist the City meet their alternative water supply demand. Supervised drilling, casing installation, and cementing of an ASR well and two test wells. Interpreted coring data, lithologic, and geophysical logs. Conducted extensive pump testing and water quality analyses to understand the hydraulics of operating an existing ASR well in conjunction with the new ASR well. Inspected wellhead piping, mechanical and instrumentation installation. Wrote a comprehensive construction and testing report and operations and maintenance manual to meet FDEP permitting requirements. Conducted weekly project meetings with the contractor and owner's representative. Reviewed submittals, pay requests and change orders. Communicated with county, state, and local regulatory agencies regarding building permits, health department permits, and environmental protection and construction permits. Managed project budgets and client invoicing.

Hydrogeologist/Project Manager, ASR Well and East Plant Expansion Test Wells, City of Boynton Beach, FL. Coordinated technical and field resources to complete the construction and testing of a Class V ASR well and two Floridan Aquifer monitor wells to assist the City meet their alternative water supply demand. Supervised drilling, casing installation, and cementing of an ASR well and two test wells. Interpreted coring data, lithologic, and geophysical logs. Conducted extensive pump testing and water quality analyses. Wrote a comprehensive construction and testing report.

Hydrogeologist, Cudjoe Advanced Water Reclamation Facility (WRF) Key DIW System, Florida Keys Aqueduct Authority, FL. Responsible for design, permitting, FDEP Underground Injection Control (UIC) regulatory communication and hydrogeologic and construction data interpretation for the installation of a dual-zone monitoring well and deep injection well.

Project Manager/Hydrogeologist, DIW System Monitor Well, Coral Springs Improvement District, FL. Designed a new 2,100-foot deep dual-zone monitor well. Applied for and received a construction permit from FDEP UIC. Managed the new well bidding, construction, borehole geophysical testing, and aquifer testing, as well as the plugging and abandonment of an existing tri-zone monitor well.

Hydrogeologist/Project Manager, Injection Well Program Management, Miami-Dade County Water and Sewer Department, FL. Management and technical lead for unprecedented scale injection well implementation project planning and program management. Over the next decade the program will be responsible for installing 20-30 new large (24-30 inch) diameter injection wells to depths of 2,500 to 3,000 feet to accommodate over 1 billion gallons per day wastewater.

Hydrogeologist, Stormwater Drainage Wells, City of Key West, FL. Prepared design specifications for the construction and rehabilitation of Class V stormwater drainage wells. Assisted with FDEP UIC permitting. Supervised testing to assess the hydraulic properties of the formation receiving the stormwater. Prepared technical memoranda on the operating capacities and head conditions.

Hydrogeologist/Project Manager, GT Lohmeyer Injection Well System Operation Permit Renewal, City of Fort Lauderdale, FL. Analyzed historical operating and testing data and prepared application for a successful 5-year permit renewal.

Hydrogeologist, DIW System Mechanical Integrity Testing, Coral Springs Improvement District, FL. Prepared a plan approved by FDEP UIC, performed bidding and contracting services, and managed the testing to demonstrate internal and external mechanical integrity in two DIWs using video surveys, geophysical logging, and pressure tests.

Geologist, Lake Okeechobee Estuary Recovery Paradise Run and ASR Site, South Florida Water Management District, FL. Provided field oversight of geotechnical investigations for the Paradise Run ASR demonstration project. Served as a technical reviewer for the final Paradise Run ASR Monitoring Well and Testing Report.

Hydrogeologist, DIWs Permitting and Construction, Fort Pierce Utilities Authority, FL. Analyzed extensive packer pumping test and aquifer test data to demonstrate lateral and vertical continuity of confining zones above the injection interval. Researched fiberglass reinforced plastic tubing alternatives for well construction. Prepared application to construct injection wells for FDEP. Described lithologic cuttings from land surface to 3,200 feet below land surface.

Hydrogeologist/Project Manager, Deep Injection Well System Mechanical Integrity Testing, City of Boynton Beach, FL. Wrote and certified an FDEP approved plan for the 5-year FDEP/EPA mandated mechanical integrity testing, managed water well contractor and field staff supervision during pressure testing, geophysical logging, and video surveying. Currently preparing a certified report for FDEP, which includes testing results and an evaluation of monitoring well water quality.

Hydrogeologist/Project Manager, Deep Injection Well System Rehabilitation and Mechanical Integrity Testing, City of Deerfield Beach, FL. Prepared planning documents and specifications for rehabilitation of the City's Class I industrial deep injection well at the West WTP. Managed field services and regulatory communication during testing, and submitted a certified report to FDEP following successful rehabilitation and testing.

Hydrogeologist/Project Manager, Deep Injection Well System, Biscayne Landing, City of North Miami, FL. Technical, construction, and operations lead for an experimental remediation project, which will use a 3,200-foot-deep injection well for the disposal of ammonia contaminated groundwater at a closed landfill site. Responsible for FDEP permitting, subcontracting, hydrogeologic analyses and reporting. Developed a groundwater model to simulate the contaminated groundwater extraction system.

Hydrogeologist, Class I Injection Well and Dual Zone Monitor Well, Seacoast Utility Authority, Palm Beach Gardens, FL. Project involves hydrogeologic analysis, drilling and testing oversight, FDEP reporting, and construction management for a 3,400-foot tubing and packer industrial injection well and associated dual zone monitor well.

Hydrogeologist, Wellfield Capacity and Optimization Evaluation, Fort Pierce Utilities Authority, FL. Developed evaluation matrix and optimization recommendations for a surficial aquifer wellfield based on field inspections, well yields, access, emergency power availability, and proximity to contaminants.

Hydrogeologist and Project Manager, DIW System Operation Permit Application and Annual Report, City of Deerfield Beach, FL. Prepared an operation permit application for a Class I industrial injection well. Represented the City at public meetings and pre-application meetings with the FDEP. Reviewed draft permits and public notices. Prepared an annual compliance report summarizing operational and monitoring data for the injection well system.

Geologist, ASR Well, Florida Keys Aqueduct Authority, Florida City, FL. Responsible for logging geologic cuttings and interpreting in the context of existing geologic data and geophysical logs to meet FDEP regulatory requirements.

Jon Ouverson

UIC Permitting/Well Design; Services During Construction/UIC Well Testing

Education

MS, Hydrogeology, University of South Florida
BS, Geology, University of South Florida

Relevant Qualifications

- Reclaimed water, wastewater, and water experience with Florida local governments
- Experience includes technical support with multiple groundwater modeling, surface water modeling, and hydrogeologic analysis tasks
- Experience with MODFLOW, Groundwater Vistas, Flood Modeller, and ArcGIS
- Provided technical support with multiple underground injection and aquifer storage and recovery (ASR) related projects including annual summary reports, injection well operation permit renewals, desktop feasibility studies, well acidization activities, and well construction activities

Representative Project Experience

Staff Scientist/Resident Observer, SWWRF Recharge Well, Manatee County, FL. Provided field observation during the construction of a recharge well and associated monitoring wells.

Staff Scientist, ASR Wellfields WY2014, WY2015, WY2016 Annual Reports, Peace River Regional Water Supply Authority, Bradenton, FL. Annual updates to the Authority's ASR Well System Annual Report. This report analyzes previous well rehabilitation activities, historic flow, pressure, water level, and concentration data gathered from the ASR wells and at associated monitoring wells.

Staff Scientist, ASR Wellfields Total Dissolved Solids Yield Model Update, Peace River Regional Water Supply Authority, Bradenton, FL. Updated an existing Microsoft Excel model to determine the volume of water that can be recovered from the ASR system before reaching unacceptable total dissolved solids concentrations. Results are dependent on a multitude of factors, such as recharge volume, recharge water quality, recovery configurations, pumping rates, and storage durations between recharge and recovery events. The effort included changes to the existing model based on empirical evidence.

Staff Scientist/Resident Observer, Cortez Road Deep Injection Well Acidization, Manatee County, FL. Provided field observation of the acidization procedure, analysis of the resulting data, and technical report writing and development

Staff Scientist, North Manatee County Aquifer Recharge Project Abbreviated Feasibility Study, Manatee County, FL. Groundwater modeling task of an Abbreviated Feasibility Study utilizing FTMR and DWRM2 for an aquifer recharge system in northern Manatee County. Refined an existing regional MODFLOW model to evaluate potential benefits of a proposed recharge well/well system.

Staff Scientist, Deep Injection Well and ASR Systems FY2014, FY2015 Annual Reports, City of St. Petersburg, FL. Annual updates to the City's Injection and ASR Well System Annual Report. This report analyzed previous well rehabilitation activities, historic flow, pressure, water level, and concentration data gathered from the injection and ASR wells and at associated monitoring wells.

Staff Scientist, Pasco County Central Pasco, Pasco County, FL. Assisted with the manual calibration of a MODFLOW groundwater model based on recharge coefficients and historical rainfall data. Evaluated surface water impacts simulated by the groundwater flow model using a separate surface water Flood Modeller model. Assisted with data interpretation, and aquifer performance test (APT) analysis.

Staff Scientist, Boyette Road Reservoir Emergency Action Plan and Modeling Report, Pasco County, FL. Assisted with the surface water discharge and routing model assembly, calculations, troubleshooting, and post-processing. The surface water model utilized the software suite Flood Modeller.

Staff Scientist/Resident Observer, SWWRF Injection Well System Acidization, City of St. Petersburg, FL. Provided field observation of the acidization procedure, analysis of the resulting data, and technical report writing and development.

Staff Scientist/Resident Observer, North Lee County Deep Injection Well Acidization, Lee County, FL. Provided field observation of the acidization procedure, analysis of the resulting data, and technical report writing and development.

Staff Scientist, Ocean Outfall Legislation, Miami-Dade County, FL. Supported and assisted with the migration of an existing USGS MODFLOW model to Groundwater Vistas using MODFLOW 2005 and MODFLOW USG.

Staff Scientist/Resident Observer, AWWRF Deep Injection Wells MITs, City of St. Petersburg, FL. Served as resident observer, staff scientist, and safety coordinator during the mechanical integrity testing of the Albert Whitted deep injection wells. Following the construction portion of the project, assisted with technical report writing, development, and delivery.

Staff Scientist, Groundwater Recharge Park, City of Ocala, FL. Supported the design of a hydrogeologic investigation. Provided field observation during field activities that included 41 direct push soil borings, the construction of 12 monitoring wells, construction of a pumping well to be used for an aquifer performance test (APT) and installed and monitored pressure data loggers in all wells. Following the field portion of the project, assisted with data interpretation, APT analysis, groundwater model development using Groundwater Vistas and MODFLOW USG, technical report writing, development, and delivery.

Staff Scientist, Crews Lake Natural Systems Restoration, Pasco County, FL. Designed a surface water flow and inundation model to simulate differences in design storm flood extent and stage using Flood Modeller. The effort included the conversion of specific outputs of an existing ICPR watershed management plan model and the modification of an existing digital elevation model using ArcGIS.

Staff Scientist/Resident Observer, Wet Weather Overflow Mitigation, City of St. Petersburg, FL. Provided field observation during the construction of 20 shallow groundwater monitoring wells throughout the City. Installed pressure data loggers in 23 shallow groundwater monitoring wells, monitored, provided finalized data, and interpolated groundwater surfaces. The effort included data compensation with temporal changes in barometric pressure and the evaluation of tidal effects on groundwater fluctuations.

Staff Scientist, Northwest 5 Watershed Master Plan Update, Southwest Florida Water Management District (SWFWMD), Hillsborough County, FL. Assisted with updating GIS data for the individual watersheds (SWFWMD GWIS format). Assisted with field activities for flood investigations conducted during the July/August 2015 flooding events upon an urgent request from the County.

Staff Scientist, Oldsmar Watershed Management Plan Update, SWFWMD, City of Oldsmar, FL. Assisted with updating GWIS data for EPA SWMM5.0 with Enterprise Resource Planning (ERP) and as-builts. Assisted with DEM modifications based on as-builts.

Amanda Berens, PE, PG

SWFWMD Permits; Services During Construction/UIC Well Testing

Education

MS, Civil Engineering (Water Resources emphasis), University of California – Irvine
BS, Geological Engineering, University of Missouri

Professional Registrations

Professional Engineer: FL (#68871), CA
Professional Geologist: FL (#2779), CA
Certified Hydrogeologist: CA

Relevant Qualifications

- Extensive reclaimed water, wastewater, and water experience with Florida local governments
- More than 17 years of experience with responsibilities that include permitting; project management; hydraulic and groundwater modeling; hydraulic, hydrologic, and hydrogeologic field work and data analyses; compliance monitoring; report writing; and Access database management
- Proficient in groundwater modeling and surface water modeling and calibration software, such as ModFlow, Groundwater Vistas, PEST, BeoPEST, HEC-HMS, HEC-RAS, FloodModeller, SWMM, as well as ArcGIS and Surfer

Representative Project Experience

Project Hydrogeologist, Groundwater Flow Modeling, Peace River Manasota Regional Water Supply Authority, FL. Performed groundwater flow modeling to evaluate the potential effects to the hydrogeologic regime (groundwater and surface water) resulting from a new production well near the Southern Water Use Caution Area. Modeled associated potential mitigation strategies.

Modeler/Permit Manager, Nocatee Augmentation Project, Jacksonville, FL. Managed all aspects of permitting including compiling and submitting for approval the St. Johns River Water Management District (SJRWMD) electronic Consumptive Use Permit Application and performing groundwater modeling, Using the NEF Groundwater Model, evaluated potential future impacts to Floridan aquifer groundwater. The permit application was approved by SJRWMD with no RAIs.

Project Engineer, MIT Testing and Reporting, Annual Reporting, Permitting, City of St. Petersburg, FL. Compiled and provided technical review of injection system and ASR annual reports, mechanical integrity testing specifications and reports, and injection system permit renewal applications.

Groundwater Modeler, Northeast Florida Model Groundwater Production, JEA, Jacksonville, FL. Modified the existing Northeast Florida Model to simulate proposed groundwater production wells in St. Johns and Duval Counties. Evaluated simulated additional drawdown from the proposed production wells. Compiled and submitted one new electronic consumptive use permit application and one electronic consumptive use permit modification application. Received both the requested permit and requested modification with no requests for additional information.

Project Manager/Associate Engineer, Water Modeling and Permitting, Pasco County, FL. Compiled a consolidated Water Use Permit application for five existing water use permits, including water use and per capita water use calculations. Performed numerical groundwater flow modeling of the pumping effects of the approximately 40 wells in the consolidated permit on the existing groundwater regime.

Project Hydrogeologist, Central Pasco County Beneficial Water Reuse Project, Pasco County Utilities Services Branch, FL. Performed a literature review and desk top analysis to determined site suitability for groundwater recharge. Designed and implemented a field investigation study to characterize the site hydrology and hydrogeology including water levels in sand and limestone aquifers, water levels in wetlands and ponds, hydraulic parameters, infiltration rates, geology, groundwater flow direction, groundwater flow gradients, and precipitation. Developed and calibrated transient and steady state groundwater flow models based on site characterization data. Utilized the groundwater flow model to perform groundwater mounding predictive analysis associated with infiltration wetlands proposed to be

constructed on a hydrologically altered site. Quantified predicted infiltration rates and hydroperiods for proposed infiltration wetlands. Recalibration of the model based on first year loading data is ongoing.

Project Manager/Engineer, Water Reuse, City of West Melbourne, FL. Compiled mechanical integrity testing specifications. Compiled a water reuse guidance document for distribution to the City's reuse water users. Compiled an effluent disposal feasibility study evaluating the City's options for wastewater treatment effluent disposal. Performed numerical groundwater flow modeling of the pumping effects of the City's production wells on the existing groundwater regime. Performed hydraulic modeling evaluating the hydraulic effects of additional conveyance and water storage facilities on the City's existing infrastructure.

Project Hydrogeologist, Aquifer Storage and Recovery (ASR) Projects, Oak Creek Water and Sewer Utility, Green Bay Water Utility and Central Brown County Water Authority, WI. Compiled a feasibility study for Central Brown County Water Authority that included analysis of well-specific geochemistry, demand, hydraulic performance, geology and hydrogeology, and naturally occurring groundwater contamination. Analyzed drinking water distribution system diagrams to determine optimal well locations for ASR testing and associated improvements required. Compiled a demonstration test plan describing the planned testing of a new ASR well. Compiled a report describing the hydraulic and geochemical results of ASR well shakedown tests. Performed hydraulic analyses including ideal and leaky aquifer, fully and partially penetrating well, step drawdown, specific injectivity and capacity, and well clogging analyses. Performed geochemical and natural attenuation analyses. Performed rock coring and logging activities. Performed field parameter, groundwater, and mineralogical sampling activities.

Project Manager/Associate Engineer, Regional Reservoir Performance Monitoring Program, Tampa Bay Water, FL. Performed engineering, hydrologic, and hydrogeologic data analysis to determine performance of the reservoir embankment, including calculating embankment seepage and evaluating seepage effects. Compiled monthly and annual reservoir embankment compliance reports. Evaluated embankment water levels to develop alarm limits for embankment piezometers. Performed engineering, hydrologic, and hydrologic data analysis to evaluate the performance of embankment drainage system.

Project Engineer, Land O' Lakes Storage Reservoir, Pasco County Utilities Services Branch, FL. Performed 2011 and 2013 annual reservoir inspections, including embankment erosion protection. Compiled 2011 and 2013 Annual Reservoir Inspection Certification Reports. Compiled the 2014 revision to the Operations and Maintenance Manual for the reservoir, including calculating operational envelopes for the onsite instrumentation. Developed a 1D dam break model and 2D routing models for the reservoir, utilized the models to calculate flood depths, and flood wave arrival times for various dam break scenarios, including probable maximum precipitation scenarios. Compiled the 2014 revision to the Emergency Action Plan, including revised dam break inundation maps. Planned, coordinated, and facilitated the 2012 Emergency Action Plan exercise for reservoir and emergency personnel.

Project Hydrogeologist, Embassy Hills and Northwest Rapid-Rate Infiltration Basins (RRIBs) Re-rate, Pasco County Utilities Services Branch, FL. Developed and calibrated a groundwater flow model based on site load testing and historical loading data. Utilized the groundwater flow model to perform groundwater mounding predictive analysis to assess the maximum infiltration rate associated with the existing RRIBs. Based on this work, the County received approval for a 63% increase in infiltration capacity from the Florida Department of Environmental Protection.

Project Hydrogeologist, Levy Nuclear Power Plant Site Certification Application, Progress Energy, Levy County, FL. Compiled an evaluation of the hydrologic and hydrogeologic regime of the site selected for a potential nuclear power plant, including precipitation, flooding, tsunami effects, wind wave effects, ice effects, and pumping effects. Performed numerical groundwater flow modeling of the pumping effects of the proposed nuclear power plant on the existing hydrologic and hydrogeologic regimes.

Associate Engineer, South Cross Bayou Wastewater Treatment Facility, Pinellas County, FL. Evaluated the County's wastewater influent, effluent, and storage flows over time to determine ideal periods for injection, underground storage, and recovery of public access reclaimed water. Performed preliminary engineering for conveyance facilities required to inject, store underground, and recover public access reclaimed water.

Project Hydrogeologist, Well Design and Permitting, Los Angeles County Department of Public Works, CA. Designed production wells and compiled design drawings. Planned groundwater discharge during construction including permitting, piping, and testing. Compiled permits, arranged property access, and facilitated contact between the County and property owners.

Rick Gorsira, ENV SP

Environmental/Ecology Permits

Education

BS, Zoology, University of Florida

Professional Registrations

Wetland Delineator (provisional), U.S Army Corps of Engineers, Jacksonville District, Florida
Envision Sustainability Professional

Relevant Qualifications

- Extensive reclaimed water, water, and wastewater experience with Florida local governments
- Experience in developing effective permitting strategies for clients have resulted in cost-effective solutions
- Experienced in ecological assessments, stormwater, surface water, groundwater, and sediment sampling design, wetland delineation, dredge disposal monitoring, and wildlife assessments
- Monitoring of wellfield withdrawal impacts on wetland hydrology and other water supply projects
- Extensive experience in aerial photo-interpretation, hydroperiod assessments, water supply and reuse water recharge applications, and ERP permitting of water supply projects
- Expertise in managing biological monitoring of freshwater and estuarine systems and develops State ERP and federal permitting strategies, including NEPA compliance

Representative Project Experience

Project Manager, Water Use Permit Monitoring, Bonita Springs Utilities, FL. Monitored wetland habitat to assess the impact of water withdrawals of two wellfields as part of a Consumptive Use Permit. Led bi-annual assessment of vegetation and hydrologic response to operation of the wells located in the Tamiami aquifer. Uniform Mitigation Assessment Method assessments were performed on a bi-annual basis to determine the effects of wellfield operation during the dry and wet season. Successfully negotiated with the South Florida Water Management District (SFWMD) to reduce monitoring requirements, resulting in significant cost savings to the client.

Ecologist, Paradise Run Aquifer Storage and Recovery (ASR) Technology Demonstration Project, SFWMD, FL. Supervised ecological field site reconnaissance to support planning and conceptual design of the 50-mgd Paradise Run ASR Demonstration System, which is proposed as a 10-well, 50-mgd surface water storage facility on the Kissimmee River/C-38 just downstream of S-65E. Information was needed to assess potential ecological impacts on wetlands associated with the proposed constructed wetland system to serve as an initial pretreatment prior to water storage in the upper and middle Floridan aquifer in stacked ASR wells. Participated in field surveys designed to confirm presence of threatened and endangered wildlife species within the project site footprint.

Project Scientist/Quality Control Analyst, Wellfield, City of Fort Myers, FL. Conducted a study for the City's wellfield to assess operational effects of the shallow wells on the surrounding wetland communities and hydrology. This wellfield was augmented with surface water from the Caloosahatchee River, which was pumped to infiltration galleries within the wellfield. The wellfield operation has since been modified to deeper artesian/Floridan aquifer sources to accommodate the growing demand on the water supply. Monitoring demonstrated that augmentation of the wellfield has limited the extent of hydrological impact and has resulted in positive impacts on the forested wetlands within the wellfield.

Lead Scientist, Central Pasco County Beneficial Reuse Project, Southwest Florida Water Management District, Pasco County, FL. Lead scientist for the preparation of permit applications. The project involved construction of wetland infiltration systems using reclaimed water from the Pasco County Master Reuse System to recover and enhance regional water resources. These wetland infiltration cells will provide source water for hydrologically altered wetlands onsite.

Environmental Scientist, Hydroperiod Study, Northwest Hillsborough County, FL. Implemented a study of hydroperiods of wetland habitats, including wildlife use of wetlands and lakes within selected well fields. Prepared reports and data summaries for administrative hearings for water use permitting on behalf of regional water suppliers in southwest Florida.

Senior Environmental Scientist, Monitoring, City of Cocoa, FL. Provided assistance for the quarterly monitoring of vegetation communities to determine the response to surface water withdrawals from the Taylor Creek Reservoir in Osceola County. The monitoring was part of the 3-year baseline ecological monitoring for the City's Consumptive Use Permit (CUP).

Environmental Scientist, NPDES Permitting, Englewood Water District, FL. Coordinated and obtained a renewal of a NPDES permit for the emergency discharge of brine wastes of a reverse osmosis plant. Historical data review and performance data were critical components to obtain specific waivers established by the permitting agencies for issuance of the permit.

Task Manager, Wastewater Management Program, Confidential Client, FL. Conducted wetland delineations and assessments and successfully prepared permits for impacts to wetlands for approval by regulatory agencies. Obtained a permit and performed the onsite relocation of 63 gopher tortoises to suitable habitat.

Permitting Task Manager, Pipeline Projects, Englewood Water District, FL. Obtained permits for several pipeline projects for the Englewood Water District. Federal and state permits were obtained for unavoidable impacts to state waters and isolated wetlands for a 4-inch sewer main, 24-inch water main, and 4-inch raw water supply main. Post-impact wetland monitoring was conducted for these projects as part of the special conditions of the permits.

Project Manager, Stormwater Canal Sediment Removal, Pinellas County, FL. Provided permitting services for the removal of accumulated sediment in the stormwater outfall canals at 16 locations. Ecological studies were conducted of the stormwater canals to assess impacts to wetlands, listed species, and water quality, especially receiving waters to assess impacts from proposed sediment removal. Developed innovative strategies for permitting that resulted in channel geometry improvements and slope stabilization to reduce sediment load and reduce future maintenance within these stormwater canals.

Senior Scientist/Ecologist, Compliance Monitoring Program for Bill Young Regional Water Supply Reservoir, Tampa Bay Water, FL. Involved with a semi-annual habitat monitoring program for the construction of a regional reservoir. Established 12 transects within floodplain wetlands of adjacent creeks to assess baseline conditions. Based on the current monitoring data, operational effects from the reservoir will be determined as the system comes online. Established monitoring stations to assess the potential hydrological effects on the nearby vegetation communities and downstream habitats.

Lead Scientist, Northwest Five Watershed Management Plan Update, Hillsborough County, FL. Conducted field investigations for devising best management practices for Northwest Five Watersheds, which included four different watersheds. Conducted assessments post-summer floods to respond to citizen concerns and investigate potential impediments to stormwater conveyance. As a result of these investigations, the County requested development of a comprehensive sediment management plan. A statistical approach will be used to identify and optimize sediment management in the watersheds. Goal is to reduce sediment management by targeting specific areas, reducing upstream flooding in the watershed.

Lead Scientist, Crews Lake Natural Systems Restoration, Pasco County, FL. Prepared a plan of study for this project, which will use hydrologically altered wetlands in Crews Lake to receive Pasco County reclaimed water for storage of wet weather flow as allowed under the Wetlands Application Rule, Ch. 62 611, FAC. Baseline monitoring requirements will involve water and sediment quality, biological community composition, and hydrologic characterization for 1 year as required in the rule. Permits were recently submitted for the County to the Florida Department of Environmental Protection.

Project Scientist/Quality Control Analyst, Ave Maria Reclaimed Water System Wetland Storage Project, Collier County, FL. Conducted routine monitoring of the water quality, vegetation, soils, fish, invertebrate, wildlife, and surface and groundwater water levels of hydrologically impacted cypress and marsh wetlands near Immokalee. Responsibilities included field platform maintenance, well sampling, logistics planning, water quality sampling and quality control review, vegetation and wildlife data collection, office data base input and quality control review, analysis, and report preparation.

Tao Fu, PE

Process/Mechanical

Education

MS, Civil Engineering, Clarkson University
BS, Mechanical Engineering, Huazhong University of Science & Technology

Professional Registrations

Professional Engineer: FL (#63138)

Relevant Qualifications

- Extensive process mechanical experience on reclaimed water, wastewater, and water projects with Florida local governments
- Experienced in the planning, designing, modeling, and troubleshooting of water/wastewater treatment facilities, pump stations, wastewater collection systems, stormwater systems, wetlands, and landfills
- Additional experience includes permitting, report preparation, and services during construction

Representative Project Experience

Lead Mechanical Engineer, Southwest Water Reclamation Facility (SWWRF) Recharge Well, Manatee Country, FL. Lead mechanical engineer and design manager for a new 15-mgd recharge well design, including one recharge well, two monitoring wells, and an ammonium sulfate storage and metering pump system.

Lead Mechanical Engineer, NWWRF Wet Weather Recharge Well, Manatee County, FL. Lead mechanical engineer and design manager for three new recharge wells and associated pipeline and monitoring wells.

Lead Mechanical Engineer, Aquifer Storage Recovery (ASR) Well Pump Station, Pinellas County, FL. Lead mechanical engineer for a 1-mgd ASR system. Worked from 30% design through construction phase.

Lead Mechanical Engineer, SWWRF Nitrogen Removal, Manatee County, FL. Lead mechanical engineer for converting an existing 48-mgd wastewater plant from activated sludge to MLE process. Processes and equipment added and modified included hyperbolic anoxic mixers, nitrified recycle pumps, high-speed turbo aeration blowers, jet-aerated sludge holding tanks, and fine-bubble diffusers. Also managed the service during construction.

Lead Mechanical Engineer, SWWRF Filter Rehabilitation, Manatee County, FL. Lead mechanical engineer and design manager for six automatic backwash filters rehabilitation, including replacement of underdrain system, control panels and structure repairs.

Mechanical Engineer, Aquifer Recharge Pilot Plant, Miami-Dade County, FL. Mechanical engineer for a 50,000-gpd pilot plant. Processes included biological wastewater treatment, ultrafiltration/membrane bioreactor, reverse osmosis (RO), and ultraviolet/peroxide.

Mechanical Engineer, Lake Hancock Outlet Treatment Wetland Pump Station, Southwest Florida Water Management District, FL. Mechanical engineer for the schematic design of a 150-cfs pump station that feeds a constructed lake water treatment wetland.

Lead Mechanical Engineer, North Lee County Water Treatment Plant (WTP) Deep Injection Well No. 2, Lee County, FL. Lead mechanical engineer and design manager for a new 5-mgd deep injection well design, including one injection well and one monitoring well.

Mechanical Engineer, Wastewater Treatment Plant (WWTP) Disinfection, Hillsborough County, FL. Mechanical engineer for the conversion of three plants from chlorine gas to sodium hypochlorite.

Mechanical Engineer, South Cross Bayou WRF, Pinellas County, FL. Mechanical engineer for the study of copper removal from effluent.

Lead Mechanical Engineer, WWTP Headworks Upgrading, City of Key West, FL. Lead mechanical engineer for the expansion of headworks from peak flow of 13 mgd to 30 mgd. Worked from schematic design through construction phase. Designed all processes including mechanical bar screens, screening washer/compactors, conveyors, grit chambers, grit pumps, and cyclone/classifiers.

Lead Mechanical Engineer, RO Plant Expansion, Bonita Springs Utilities, FL. Lead mechanical engineer for the expansion of RO plant from 6 mgd to 9 mgd. Worked from schematic design through bid phase. Designed all processes including cartridge filters, RO skids, degasifiers, odor control system, chemical systems, and permeate pump station. Also responsible for permitting.

Lead Mechanical Engineer, Land O' Lakes WWTP Expansion, Pasco County, FL. Lead mechanical engineer for the plant expansion from 3.5 to 7.8 mgd. Worked on the schematic design. Processes included fine screen, grit removal, moving bed biofilm reactor, aeration blower/diffuser, clarification, deep bed filtration, chlorination, and effluent pumping station.

Lead Mechanical Engineer, WTP, Coral Springs Improvement District, FL. Lead mechanical engineer for the new 7.4-mgd RO plant. Worked from 30% design through construction phase. Designed and prepared bid documents for all processes including sand strainers, cartridge filters, RO skids, degasifiers, odor control system, chemical systems, and permeate pump station. Also responsible for permitting.

Lead Mechanical Engineer, Green Meadows WTP, Lee County, FL. Lead mechanical engineer for the detailed design of the new 16-mgd RO plant. Processes included sand strainers, cartridge filters, RO skids, degasifiers, ion exchange, odor control system, chemical systems, and permeate pump station.

Lead Mechanical Engineer, WTP, North Springs Improvement District, FL. Lead mechanical engineer for the new 10-mgd RO plant. Worked from 30% design through construction phase. Designed and prepared bid documents for all processes including sand strainers, cartridge filters, RO skids, degasifiers, odor control system, chemical systems, and permeate pump station.

Mechanical Engineer, South WWTP Expansion, City of Baton Rouge, LA. Worked as a mechanical engineer in the project definition of a 200-mgd plant expansion. Responsible for facilities including effluent anaerobic digester mixing, sludge heating, gravity belt thickener, belt filter press, digester gas system, pump station, plant water pump station, and outfall.

Mechanical Design Engineer, Shakerag WRF, Forsyth, GA. Mechanical design engineer for a new 1.25-mgd membrane bioreactor plant. Worked from 30% design through bid phase. Worked on the compressible air modeling and designing of the aeration blower/diffuser system. Also worked on the hydraulic profile of the plant.

Mechanical Design Engineer, Tradeport WWTP, Liberty County, GA. Mechanical design engineer for a new 3-mgd membrane bioreactor plant. Work included hydraulic profile development.

Mechanical Engineer, Lake Bradford Road WWTP Improvement, City of Tallahassee, FL. Mechanical engineer in the project planning of the 4.5-mgd plant improvement to meet water quality limits. Responsible for cost estimate of Bardenpho process as an alternative to biological nutrient removal/membrane biorector process.

Mechanical Engineer, Bayamon WWTP Expansion, Puerto Rico. Mechanical engineer in the planning of a plant expansion to handle 120-mgd peak flow. Worked on the evaluation and planning of influent pump station, grit chamber, primary clarifiers, and effluent pump station. Developed hydraulic profile for the plant.

Mechanical Engineer, WWTP Expansion Tertiary Treatment, City of Bakersfield, CA. Mechanical design engineer for a new 2-mgd tertiary treatment system, including cloth-media filter, chlorination, storage tank, service pump, and hydro-pneumatic tank.

Mechanical Engineer, Florida Keys Aqueduct Authority, FL. Mechanical engineer for services during construction of two RO plants.

Lead Mechanical Engineer, Fowler WRF, Forsyth County, GA. Lead mechanical engineer for the expansion of a MBR plant from 2.5 to 5 mgd. New facilities included headworks, jet-aerated EQ tank, bioreactors, blowers, membrane tanks, ultraviolet, odor control, aerated sludge holding tanks, dewatering, and chemical systems.

Project Engineer, Hudson Master Pump Station Replacement, Pasco County, FL. Project engineer for a 9-mgd in-line booster wastewater pump station that features variable speed pumps and engine driven pumps.

Rich Morrison, PE

Geotechnical/Site Civil

Education

BS, Civil Engineering, University of Florida

Professional Registrations

Professional Engineer: FL (#67713), NC, SC

Relevant Qualifications

- Extensive experience as the site/civil discipline lead for a variety of projects, including reclaimed water, wastewater, and water experience with Florida local governments
- Fluent in every component of site/civil design including site layout, grading, roadway design, stormwater conveyance and management, and water and wastewater utility design
- Proficient in Microstation, Geopak, AutoCad, ICPR, PondPack, AFT Fathom, ArcMap, StormCAD, FlowMaster, Word, Excel, and PowerPoint

Representative Project Experience

Lead Civil Engineer, Muphree Water Treatment Plant (WTP) Well No. 16 Permanent Equipment, Gainesville Regional Utilities, Alachua County, FL. Lead civil engineer for design and permitting of a raw water well permanent equipment. Design includes facilities layout and stormwater calculations.

Design Manager/Lead Civil Engineer, Central Pasco Beneficial Water Reuse Project, Pasco County Utilities, Pasco County, FL. Managed the design of a reclaimed water treatment and infiltration wetland system (15 cells, 140 acres total). Design includes site layout, grading, and yard piping up to 24 inches in diameter (8 miles total), including several HDD crossings.

Design Manager/Lead Civil, Crews Lake Natural Systems Restoration Project, Pasco County Utilities Services Branch, Pasco County, FL. The County is planning to use reclaimed water from the Pasco County Master Reuse System to augment lake levels, recover and enhance natural aquatic ecosystems, and provide water reuse capacity for Pasco County. Supported the feasibility study that included planning- level efforts to use natural wetlands as treatment wetlands for beneficial use of reclaimed water and restoration of lake water levels. Current work involves designing the natural treatment wetland, with limited grading, a pipeline, and hydraulic control structures.

Lead Civil Engineer, Pasco County Master Reuse System Boyette Road Reservoir, Pasco County, FL. Led the civil design for successor engineering of a reclaimed water reservoir. Design included site layout, grading, water and sewer utilities, and stormwater conveyance.

Lead Civil Engineer, Solid Waste Upgrade, Pasco County, FL. Led civil design for scale/scale house replacement and a new citizen drop off area. Design includes site layout, grading, water and sewer utilities, stormwater conveyance, and stormwater management ponds.

Lead Civil Engineer, Blacks Ford Water Reclamation Facility, JEA, St. Johns County, FL. Lead civil engineer for design and permitting of a major plant expansion. Design includes site layout, grading, stormwater (including a 1.6-acre wet detention stormwater pond) and yard piping up to 48 inches in diameter.

Lead Civil Engineer, Cudjoe Regional Wastewater Transmission System, Florida Keys Aqueduct Authority, Monroe County, FL. Lead civil engineer for detailed design for wastewater conveyance system on three islands in the Florida Keys. Design of force mains includes buried PVC, ductile iron bridge crossings, and sliplining an abandoned water line with HDPE pipe.

Lead Civil Engineer, Royal Oaks Creek Stormwater Improvements, City of Tallahassee, FL. Led the hydrologic/hydraulic study of an urban creek watershed with several problem areas including erosion, structure flooding, and culvert overtopping. Included conceptual design alternative analysis.

Lead Civil Engineer, Killearn Chain of Lakes Hydrologic Study, City of Tallahassee, FL. Led the hydrologic/hydraulic study of large urban watershed and lake system. Included conceptual design alternative analysis.

Lead Civil Engineer, Main Street Water Reclamation Facility Phosphorus Removal Project, Gainesville Regional Utilities, Alachua County, FL. Lead civil engineer for design of a new chemical facility and associated site work. Design includes site layout, grading, and city permitting.

Lead Civil Engineer, Wet Weather Equalization Facility, Rocky River Wastewater Treatment Plant, Town of Mooresville, NC. Lead civil engineer for expansion of the treatment plant and related infrastructure. Design includes site layout, grading, erosion and sediment control design, and stormwater management ponds.

Lead Civil Engineer, George Street Stormwater Basin Improvements, City of Key West, FL. Led civil design of stormwater collection system improvements, pumping station, and force main. Design includes new inlets and gravity piping, pump station layout, force main routing, and verification of utility locations from record drawings.

Lead Civil Engineer, Patricia and Ashby Streets Stormwater Emergency Outfall, City of Key West, FL. Led the design of a stormwater force main. Design includes pipe routing and verification of utility locations from record drawings.

Lead Civil Engineer, Bagram Airfield Drainage System Design Phases 1 and 2, U.S. Army Corps of Engineers, Afghanistan. Led the design of various project elements, including stormwater collection and conveyance piping/ditches over 4 miles in length.

Lead Civil Engineer, WTP Improvements, North Springs Improvement District, Coral Springs, FL. Lead civil engineer for expansion of reverse osmosis process building and related infrastructure. Design includes site layout and grading, stormwater conveyance, and runoff calculations.

Lead Civil Engineer, Muphree WTP Master Plan, Gainesville Regional Utilities, Alachua County, FL. Led the design and permitting of a master site plan and associated stormwater management plan for the full build out of the plant site. Design includes site layout, grading, stormwater routing, and management calculations.

Lead Civil Engineer, Imported Biosolids Handling Facility, Rocky River Regional Wastewater Treatment Plant, Water and Sewer Authority of Cabarrus County, NC. Lead civil engineer for expansion of biosolids handling and related infrastructure. Design includes site layout, grading, gravity sewer piping, erosion and sediment control design.

Lead Civil Engineer, Muphree WTP Vacuum Filter Replacement Project, Gainesville Regional Utilities, Alachua County, FL. Lead civil engineer for design of a new electrical building and associated site work. Design includes site layout and grading.

Drainage Engineer, Yankee Lake WTP, Seminole County, FL. Drainage engineer for WTP site. Design includes stormwater conveyance and management pond.

Roadway/Drainage Engineer, Athens North Oconee Wastewater Treatment Plant, Athens-Clark County, GA. Roadway and drainage engineer for WWTP site. Design includes horizontal and vertical alignment of plant site roads, stormwater conveyance, and stormwater management ponds.

Lead Civil Engineer, WTP Addition, Bonita Springs Utilities, FL. Lead civil engineer for expansion of reverse osmosis process building and related infrastructure. Design includes site grading, stormwater conveyance, and runoff calculations.

Lead Civil Engineer, Canal Dredging, Widening, and Bank Stabilization of Various Municipal Stormwater Conveyance Channels, Pinellas County, FL. Lead civil engineer for the design of various repair and restoration projects of municipal ditches and creeks that are experiencing erosion, overgrowth, and structural failures. Design includes site layout and grading.

Lead Civil Engineer, Ocala Wetland Groundwater Recharge Park, City of Ocala, FL. Lead civil engineer for the design of a reclaimed water treatment and infiltration wetland system (3 cells, 31 acres total). Design includes site layout, grading, yard piping.

David Paiko, PE

Geotechnical/Site Civil

Education

MS, Civil Engineering, University of Illinois, Champaign-Urbana
BS, Civil Engineering, University of Portland

Professional Registrations

Professional Engineer: FL (#77056)

Relevant Qualifications

- Expertise in geotechnical design, analysis, and investigation for reclaimed water, wastewater, and water projects with Florida local governments
- Geotechnical design and analysis experience includes augercast pile design, sheetpile wall design, slope stability and seepage analyses, and settlement analyses
- Possesses construction management and quality assurance experience in projects that incorporate geotechnical, structural, process mechanical, I&C, and electrical elements
- Experienced in safety studies for dams and levees, landslide investigation and monitoring, rock slope stabilization, and geotechnical laboratory testing

Representative Project Experience

Geotechnical Engineer, Ocala Groundwater Recharge Park, Ocala, FL. Performed geotechnical design, site exploration, and quality review for the design of a treatment wetland in Ocala. Tasks include subsurface exploration in a sinkhole-prone region, geotechnical design tasks related to berms, structures, and walkways, and quality review of the construction plans and specifications.

Geotechnical Engineer, Crews Lake Natural Systems Restoration, Pasco County, FL. Performed geotechnical design and site exploration for the project, which is designed to rehabilitate a depleted lake in Pasco County.

Resident Engineer/Safety Coordinator, Central Pasco Beneficial Water Reuse Project, Pasco County, FL. Performed geotechnical design, quality assurance observation, construction management, and inspection services for the natural treatment wetlands project. Tasks included inspection of civil, geotechnical, process mechanical, structural, and more as it relates to construction of the project.

Geotechnical Engineer, Dyal WTP, City of Cocoa, FL. Construction management and quality assurance observation for projects, including auger cast pile installation, TRD soil mix seepage cutoff walls, geomembrane liner installation, embankment construction, pipe installation, and other civil, mechanical, and construction-related tasks.

Quality Assurance Inspector, Repair of the 15.5 Billion Gallon Reservoir, Tampa Bay Water, Clearwater, FL. Responsibilities included inspecting earthwork related to demolition and rebuilding of the upstream face of the embankment, inspecting installation of PVC geomembrane liner installation, and inspecting placement of soil cement.

Resident Engineer/Safety Coordinator, Construction of the Boyette Road Reclaimed Water Reservoir, Pasco County, FL. Tasks include quality assurance observation and inspection for civil, mechanical, and electrical aspects of construction including embankment earthwork, reservoir and toe drain pump stations, stormwater management swales, cutoff wall construction, pipe installation, etc. As site safety coordinator for this project, received a Target Zero Hero award.

Geotechnical Engineer, Cornforth Consultants, Inc., Portland, OR. Coordinated and executed subsurface exploration programs and seepage studies for projects including hydroelectric facilities, landslides, foundation studies, highway relocations and landfills. Performed construction inspection and observation for installation of mesh rockfall drapes, soldier pile/tieback wall systems, levee improvements and installation of soil nails and rock anchors. Installed/monitored landslide instrumentation, reduced data and summarized data into technical reports. Conducted laboratory tests including residual shear strength by ring shear, point load index testing, grain size (hydrometer and mechanical methods), and Atterberg limits. Assisted with triaxial testing.

David Nicholson, PE

Electrical/I&C

Education

BS, Electrical Engineering, University of Central Florida

Professional Registrations

Professional Engineer: FL (#60201), AL

Relevant Qualifications

- Senior electrical design engineer with experience with Florida local governments in the design and construction services of electrical power distribution systems for water and wastewater facilities
- An experienced specification author who assisted in developing several of the firm's master specifications for electrical and power systems

Representative Project Experience

Lead Electrical Engineer, Northwest Regional Water Treatment Plant (WTP) and Wells, JEA, Jacksonville, FL. Lead electrical engineer for the phase 1 design of the new WTP and wells. Phase 1 design consisted of a 6.5-mgd high service pump station with future expansion to 13 mgd, chemical treatment facility, ground storage tanks, and two production wells. The expansion of the plant electrical distribution system consisted of the addition of a new electrical service, new distribution switchgear and stand-by generator.

Lead Electrical Engineer, Blacksford Water Reclamation Facility (WRF) Phase 4 Expansion, JEA, Jacksonville, FL. Lead electrical engineer for the design of the WRF expansion. The phase 4 expansion consist of a 3-mgd annual average daily flow expansion with new oxidation ditches operated in parallel with the existing sequencing batch reactor plant. The expansion of the plant electrical distribution system consisted of the addition of a new electrical service, distribution switchgear, motor control centers, and stand-by generator.

Lead Electrical Engineer, Reverse Osmosis WTP Building and Clearwell Expansion, Englewood Water District, Englewood, FL. Lead electrical engineer for the design and construction services for the expansion of the membrane facility from 3 mgd to 5 mgd. The expansion involved increasing the size of the membrane building and adding four new 0.5-mgd membrane filters.

Lead Electrical Engineer, West Melbourne Ray Bullard WRF Expansion Phases I, II, and III, City of West Melbourne, FL. Led the three-phase design build expiation of the WRF and reuse distribution system. The expansion of the plant electrical distribution system consisted of expanding the exiting single-ended switchgear to double-ended and increasing the onsite stand-by generator capacity from 750 KW to 1750 KW with generator load dump and lockout provisions.

Lead Electrical Engineer, Headworks Modifications at the Richard A. Heyman Environmental Protection Facility, City of Key West, FL. Led the design and construction services of the headworks modifications. The modifications involved the replacement of the bar screens, conveyors, grit classifiers, slurry pumps blowers, and washer/compactors. The modifications also involved the replacement of the headwork's motor control center while keeping the headwork's operational.

Lead Electrical Engineer, Buckman WRF Improvements, JEA, Jacksonville, FL. Lead electrical engineer for the design and construction services of the WRF improvements. The improvements involved the upgrade of the aeration basins, replacement of the secondary clarifiers, addition of NRCY pumps, and replacement of the grit basins. The modifications also involved the replacement of the secondary building motor control center while keeping the facility operational.

Lead Electrical Engineer, Mainland WRF, Fort Pierce Utilities Authority, FL. Lead electrical engineer for the phase I design of the new 5-mgd WRF. The new WRF was designed to include four future 5-mgd phases of expansion to an ultimate plant capacity of 25 mgd. The plant electrical distribution system consisted of a 13.2 kV loop that was expandable into two separate loops to accommodate future plant

expansions. The distribution system also included a double-ended medium voltage switchgear with two 2,000 KW generators with capacity to add three additional generators.

Lead Electrical Engineer, Milley's Creek Water Pollution Control Plant, Water Works and Sanitary Sewer Board, City of Montgomery, AL. Lead electrical engineer for the design of a new 3-mgd wastewater treatment facility. The plant electrical distribution system consisted of double-ended switchgear and 1,000 KW onsite stand-by generator.

Lead Electrical Engineer, South County Solid Waste Transfer Station Expansion, Hillsborough County, FL. Lead electrical engineer for the construction services of the transfer station expansion. This expansion involves the addition of a new transfer station, scale house, community collection center, and onsite standby generator.

Lead Electrical Engineer, Northwest County Solid Waste Transfer Station Expansion, Hillsborough County, FL. Lead electrical engineer for the design of the transfer station expansion. This expansion involves the addition of a new transfer station, scale house, community collection center, and onsite standby generator on top of the existing landfill.

Lead Electrical Engineer, Citrus County Solid Waste Transfer Station and Associated Site Improvements, Citrus County, FL. Lead electrical engineer for the design of the transfer station expansion. This expansion involves the addition of a new transfer station, scale house, community collection center and onsite standby generator.

Lead Electrical Engineer, Citrus County Solid Waste Transfer Station and Associated Site Improvements, Citrus County, FL. Lead electrical engineer for the design of the transfer station expansion. This expansion involves the addition of a new transfer station, scale house, community collection center and onsite.

Lead Electrical Engineer, Sunset WTP Expansion, Guntersville Water and Sewer Board, Guntersville, AL. Lead electrical engineer for the expansion of a 4-mgd conventional water treatment facility to an 8-mgd microfiltration plant. The expansion of the plant electrical distribution system consisted of replacing the existing electrical distribution equipment and adding on site stand-by generator.

Lead Electrical Engineer, Ave Maria Stewardship Community District Irrigation Pump Stations No. 1 and No. 2 – Phase 2, Ave Maria Utility Company, Ave Maria, FL. Lead electrical engineer for the design building of the two irrigation pump stations.

Lead Electrical Engineer, Pasco County Solid Waste Upgrade, Pasco County, FL. Lead electrical engineer for the design and construction services of the scale house and community collection center upgrade. This upgrade involved the addition of a new scale house and community collection center at two different sites.

Cyrus Saharkhiz, PE

Electrical/I&C

Education

BS, Chemical Engineering, Clemson University

Professional Registrations

Professional Engineer: FL (#84591)

Relevant Qualifications

- Instrumentation and controls (I&C) design, programmable logic controller (PLC) and human-machine interface (HMI) programming, and automation field support experience for water, wastewater, and water projects with Florida local governments
- Develops object-based programming logic for supervisory control and data acquisition (SCADA) and PLC controlled equipment using Studio 5000 Logix Designer (formerly RSLogix 5000)
- Experience developing code using Studio 5000 Logix Designer (formerly RSLogix 5000) for water and wastewater facilities
- Experience assisting in the design of faceplate and graphic interfaces for Wonderware HMIs
- Experience in startup operations, including commissioning and troubleshooting, for projects utilizing RSLogix 5000 and Wonderware

Representative Project Experience

I&C Engineer, East Water Reclamation Facility (WRF) Screen Upgrades, Bonita Springs Utilities, FL. Developed specifications, P&IDs, and mounting details for WRF upgrades, including new influent screening systems and a wellfield expansion. Worked with the fiber optic cable installer on fiber specifications and testing requirements. Performed services during construction, including review of submittals and answering RFIs from the system integrator. Provided engineering services on generator modification to include a signal interface with the facility SCADA system.

PLC Programmer, Wastewater Treatment Plant (WWTP) SCADA Upgrades, Seminole Tribe, FL. Developed PLC code for wastewater treatment processes using Rockwell Studio 5000 software. Created objects for modular programming, including valves, motors, analog transmitters, and digital alarms. Converted equipment tags from the project I/O lists to software tags on the PLC.

I&C Engineer, MLE Wastewater Treatment Plant Design, Manatee County, FL. Provided I&C engineering design for all design phases of the project. Developed specifications for process monitoring equipment, including dissolved oxygen probes, ammonia analyzers, combustible gas detectors, level transmitters, pressure transmitters, and flow meters. Created P&IDs for all unit processes, including anoxic and aeration basins, sludge pumping and storage, nitrogen recycle pumps, and aeration blower systems. Supported services during construction and reviewed shop drawings from contractors. Performed onsite inspections of newly constructed processes and instrumentation.

I&C Engineer, Boyette Reservoir, Pasco County, FL. Reviewed shop drawings to ensure compliance with the project specifications and general quality. Discussed RFIs with the project's system integrator and found solutions to multiple issues encountered during construction. Traveled to the site during construction to monitor significant completion and provide engineering services as needed. Created an operations and maintenance (O&M) manual for I&C of the reservoir processes.

PLC Programmer, Water Treatment Plant (WTP) SCADA Upgrade, City of Cocoa, FL. Developed object-based programming logic for PLC controlled equipment, including pumps, blowers, mixers, and process instrumentation. Built virtual PLC hardware configurations using simulator software to determine hardware requirements for Siemens PLC upgrades. Created process logic to run groundwater and surface water unit operations, including filtration, dewatering, booster station pumping, and parameter datalogging. Commissioned PLC software onsite and tested PLC signal interface and process logic. Assisted in troubleshooting and field support of automated equipment and instrumentation onsite.

I&C Engineer, Green Meadows WTP, Lee County Utilities, FL. Assisted in the development of P&IDs and control system specifications. Coordinated with process engineers on the operation and control of all major unit operations, including reverse osmosis, ion exchange, chemical injection, and clean-in-place processes. Provided services during construction, including submittal reviews, answering RFIs from the system integrator, and coordinating with the client and contractors on project issues on a weekly basis. Performed site inspections to monitor conduit installation and proposed fiber routing.

PLC Programmer, SCADA Upgrade, Milwaukee Metro Sewage District, Milwaukee, WI. Reverse-engineered an existing Siemens Step 7 V5.5 program with SINAUT telemetry software to determine polling and data transfer requirements for an impending SCADA upgrade. Developed polling and data transfer routines using Step 7 V5.5 software to facilitate a migration away from the outdated SINAUT system to a standard communication system. Assisted in determining hardware requirements for the SCADA upgrade. Performed field testing and troubleshooting of control code.

I&C Engineer, Hydraulic Surge Suppression System Design, Macon Water Authority, GA. Created specifications and construction details for a hydropnemuatic surge suppression process. Coordinated with the surge system package manufacturer to develop instrumentation and control requirements.

Field Support Engineer, F. Wayne Hill Centrifuge SCADA Upgrades, Gwinnett County, GA. Oversaw and assisted troubleshooting of a SCADA upgrade to the facility's centrifuge unit operation. Developed test code for a CompactLogix PLC using Studio 5000 software for in-house factory testing.

I&C Engineer, Oak Street Pump Station Design, New Orleans, LA. Created P&IDs, specifications, and mounting details for all instrumentation and controls for an influent pump station. Developed detailed ladder logic wiring diagrams to provide an automated solution to allow VFD switching to different motors. Further developed ladder logic to provide a detailed sequence of operation for the pump station startup, including vacuum pump priming, seal water priming, and VFD assignment checks.

Tricia Shuler, ENV SP

Public Involvement/Sustainability

Education

MS, Construction Management
BA, Fine Arts and Religion
BS, Business Management

Professional Registrations

LEED Green Associate
OSHA 30 hour certified

Relevant Qualifications

- Experience working on construction projects in the state of Florida for local governments
- Specializes in the development and implementation of comprehensive public involvement activities, planning, research, development, and evaluation for construction management programs and projects
- Expertise includes public involvement and outreach, client management, program management coordination systems, permitting, change order management, submittal coordination, coordination of vendor and material orders, and financial management
- Experience with the development and execution of sustainable management plans and sustainable design techniques

Representative Project Experience

Public Involvement Lead, Capital Improvement Program (UCAP), City of Tampa, FL. Responsible for preparing strategy presentations, coordination and management of media relations and community outreach, and executive interaction for this $250 million program consisting of 21 infrastructure projects delivered with GMP using an open book approach. The capital projects involve upgrading, expanding, and interconnecting the City's existing water system, wastewater, reclaimed water, and stormwater facilities to increase system reliability, meet regulatory requirements, and provide system expansion to meet projected growth.

Public Involvement Lead, Donut Pond 65-mgd Pump Station, City of Tampa, FL. Worked directly with major stakeholders to ensure clear communication regarding design and construction. Working with stakeholders includes clearly understanding their concerns and constraints and then communicating that to project team. Work with the public – residents and businesses – communicating project updates and resolving any complaints. Responsible for media outreach and the public relations aspect of each project. The stormwater pump station contains four pumps that reduces the stormwater flooding within the residential and commercial area and is funded partially with Southwest Florida Water Management District (SWFWMD) and City of Tampa funds. The pump station contains supervisory control and data acquisition (SCADA) to tie into the City of Tampa SCADA system.

Public Involvement Lead, Cypress Street Outfall Improvements Project, City of Tampa, FL. Worked directly with major stakeholders to ensure clear communication regarding design and construction. Project includes the construction of approximately 724 linear feet of 12-foot by 4-foot box culvert from Hillsborough River west to the intersection of Cypress Street and North Boulevard, 840 linear feet of twin 9-foot by 7-foot box culvert along North Boulevard from Cypress Street to Cass Street. The work also includes construction of approximately 205 linear feet of 8-inch diameter replacement water main and approximately 890 linear feet of 12-inch-diameter replacement water main, abandonment of existing water mains, replacement of 500 linear feet of sanitary sewer, removal of existing sanitary pipe and manholes, tree removal, coordination with construction of the CIAC Water Project Segment 2, Phase 1 and all appurtenant work and surface restoration. The work consists of furnishing, constructing, installing, testing, and maintaining said stormwater box culverts and structures complete and in place.

Public Involvement Lead, CIAC Segment 2 Phase 1 Water Main, City of Tampa, FL. Worked directly with major stakeholders to ensure clear communication regarding design and construction. Consists of approximately 5,535 linear feet of 36-inch-diameter water transmission main and 575 linear feet of 12-inch diameter water main replacement. The 12-inch water main, formerly part of the Adjacent to CIAC project, runs in Tyler Street between Florida Avenue and Tampa Street.

Jason Bird

Public Involvement/Sustainability

Education

Course work in Civil Engineering with Construction Management focus
AA, Engineering, Central Florida Community College

Relevant Qualifications

- Experienced civil engineering professional with a focus on all aspects of water resources, water conservation, infrastructure assessment, green infrastructure/low impact development and sustainability, including LEED, ENVISION evaluations for municipal facilities in Florida
- Applies knowledge of infrastructure design and climate science to risk and vulnerability evaluations for infrastructure to develop mitigation measures and adaptive strategies to protect and enhance capital investment and overall resilience of built and natural assets

Representative Project Experience

Resiliency Task Lead, JEA iWater Program, JEA, Jacksonville, FL. JEA faces unique challenges in continuing to supply a reliable source of drinking water to its customers, and operating its wellfields and water treatment plants (WTPs) in a sustainable manner. The firm was hired by JEA to oversee the iWATER project, which is a cornerstone of this effort because it will implement the improvements required to withdraw, treat, and transmit water throughout the water systems influenced by the Total Water Management Plan River Crossing through year 2035. Serves as the resilience technical lead for storm-related impacts and incorporation for resilience approach into capital improvement program (CIP) projects and design guidelines, including water supply, treatment, and distribution infrastructure.

Resilience Lead, Hendricks Wellfield, JEA, Jacksonville, FL. Project involved incorporating resilience into system analysis and decision support for capital investment. In the wake of Hurricane Irma in 2017, the potable water production wellfield was impacted by flood waters causing shut down of numerous pumps nearly causing loss of water distribution system pressure and contamination of water supply for much of Jacksonville. Performed climate hazard review of critical infrastructure and developed system improvement recommendations for risk reduction and increase to system reliability.

Task Lead, Reclaimed Water Feasibility Study, City of Leesburg, FL. Evaluation of existing wastewater flows, potable demand, irrigation demand, consumptive use permits, and existing reclaimed pipelines. Performed water balance and non-potable demand ranking based on a series of spatial and cost related metrics to inform proposed system CIP improvements to utilize available flow and maintain surface discharges within permitted volumes.

Resilience Lead, Buckman Water Reclamation Facility (WRF) Site Plant, JEA, Jacksonville, FL. Performed site plan review of climate vulnerabilities to inform site master plan development and resilience strategies for facility expansion and adaptive capacity enhancement. As part of a 52-mgd wastewater treatment plant site master plan to accommodate system expansion and resilience enhancements, provided review of system flood exposure, analysis of system and process vulnerabilities and recommendations for minimum design criteria and adaptive strategies to improve system reliability and reduce risk from climate based flood event scenarios.

Model Co-Developer/Technical Core Team Lead, Sustainable Systems Integrated Model [SSIM™] Water Module. Assisted in development of the water module portion of SSIM, a unique modeling platform that goes beyond planning to provide decision support systems that can inform design and lead to the most appropriate sustainable development program. The Water Sub-Module of SSIM can be used to understand how developments could perform with a limited groundwater or other potable water supply, evaluate high efficiency approaches to water use, provide cost/benefit analysis of alternative water conservation packages, and consider water reuse strategies. The entire analysis is developed in the context of a water balance and minimizing the impact of development for the site.

Climate Resiliency, Ocean Outfall Legislation (OOL) Program—Climate Change Resilience, Miami-Dade County, FL. As part of the OOL program, the firm provided sea level rise (SLR) and climate change assessment. Specific tasks include flood inundation modeling (using Flood Modeller Pro) to identify and

assess assets/facilities at risk. Risk assessed for the current and SLR scenarios for both 2040 and 2075. Identified critical wastewater treatment plants (WWTPs) and pump stations. The flood elevations were also used for facilities hardening plans for each critical facility identified. A design guide per SLR is being developed based on the surge and flood modeling conducted by the firm for the critical facilities.

Resiliency Task Lead, Water Operations and Capital Improvement Program, City of North Miami Beach, FL. The firm and the City entered a 15-year partnership to deliver a best-in-class water/wastewater utility for residents and regional customers of the City. The City's regional utility, NMB Water, serves more than 180,000 customers in northern Miami-Dade County. Currently developing storm impact review and mitigation strategies.

Task Lead, Sustainability, Flamingo Master Plan and Design Program, Everglades National Park, National Park Service, FL. Infrastructure assessment and recommendations for sustainable redevelopment for a long-range master plan and design program for this historic Mission 66 developed area. The project included onsite workshops. The master plan exemplifies the sustainable vision of the national park and guides planning, design, construction, restoration and use of Flamingo for the next 50 years.

Technical Lead, Resiliency Study, City of Miami Beach, FL. In response to sea level rise and increasing flooding, City wide strategies are being evaluated to mitigate flooding of public and private property. This task order included policy review and recommended changes for new construction and major renovation, specifically the minimum building finish floor (FF) elevations and City freeboard. Performed data collection, case study review and preparation of a White Paper focused on Unintended Consequences of raising the minimum FF elevation. In depth zoning code, NFIP Community Rating System and public works manual reviews for integration of resilience for buildings and critical infrastructure. Perform asset evaluation, risk and vulnerability assessment and mapping of flood inundation based on select flood hazard scenarios developed, to inform capital improvement projects and policy for future climate conditions.

Climate Resiliency, Stormwater Management Master Plan Update, St. Petersburg, FL. The goal of the project was to develop Stormwater Master Plan for the City, which consists of 26 basins. Phase I of the project is underway, where the Basin C is being updated by converting the existing model to SWMM5.0, updating the database and model using the latest ERP/As-built and land use data. The updated models are being to develop critical storm analysis and BMP Analysis. Additionally, climate resiliency is being included by developing future conditions by including sea level rise and change in rainfall. Phase II of the project will include updating all 26 basins in the City.

Task Lead, Comprehensive Plan Update, City of Fort Lauderdale, FL. As a community experiencing increasing impacts from coastal and rain driven flooding, the City is enhancing their City Comprehensive Plan to incorporate resilience. This project involves reviewing and modification to existing Comp. plan elements including the Parks and Recreation Element, the Coastal Management Element and the creation of a new Climate Change Element, which includes guidance from "Press Play," the City's Strategic Plan and "Fast Forward," the City's Vision Plan.

Technical Lead – Infrastructure, Downtown Waterfront Master Plan, St. Petersburg, FL. Project included more than 7 miles of waterfront in urban setting including downtown, airport, seaport, industrial and residential areas. As technical lead for sustainable infrastructure, provided infrastructure and asset review and high-level impact analysis for sea level rise and storm surge to inform adaptive strategies for integration into masterplan.

Education

MS, Geology, Certificate in Hydrogeology and Environmental Geology, East Carolina University
BS, Geology, Concentration in Environmental and Engineering Geology, Radford University
AS, Tidewater Community College

Relevant Qualifications

- Extensive experience in drilling, geophysical interpretation, well design and construction, hydrologic data collection, water quality profiling, well video logging interpretation, performing field geologic analysis, and pump testing for public and private nanofiltration and reverse osmosis raw water supply well projects in South Florida
- Hydrogeology experience includes design, construction, rehabilitation, and testing of public water supply well construction and rehabilitation projects for Surficial Aquifer and Floridan Aquifer production wells
- Expertise in monitor well construction, sampling, and abandonment; well performance tests and water quality sampling to evaluate wellfield trends and identify underperforming wells and malfunctioning telemetry equipment to provide recommendations for well rehabilitations; hydrologic data collection and reporting for compliance; database manipulation and analyses for interpretation and technical reports; coordination and management of field activities and contractor oversight

Representative Project Experience

Hydrogeologist, Upper Floridan Aquifer Well Construction and Testing, Seacoast Utility Authority, Palm Beach Gardens, FL. Responsible for the project design, construction, development, acidization, and testing of one new 17.4-inch-diameter Upper Floridan Aquifer production well to supplement existing reverse osmosis raw water supply. Implemented an aggressive acid treatment program to meet or exceed design rate requirements of 1,600 gpm.

Hydrogeologist, PGA Wastewater Treatment Plant Injection Well System, Deep Dual- Zone Monitor Well Construction and Testing, Seacoast Utility Authority, Palm Beach Gardens, FL. Project oversight of construction, water quality sampling, packer testing and pressure testing of one new, 4.5-inch diameter fiberglass reinforced plastics (FRP) deep dual-zone monitor well. Weekly sampling of Surficial Aquifer pad monitor wells, daily construction logs and assisting senior staff in Florida Department of Environmental Protection (FDEP) reports.

Hydrogeologist, Cooling Canal System Monitor Well Construction for Miami Dade County, Confidential Client, Homestead, FL. Provided “turn-key” hydrogeologic consulting services associated with the construction of six Biscayne Aquifer System (BAS) monitor wells along the FPL, Turkey Point Power Plant cooling canal system. Completed work within high pressure time table due to regulatory requirements from Miami-Dade County. Quality control practices during oversight of construction activities ensured efficient project progress, contractor compliance with regulations, compliance with construction standards, and completion of work within schedule.

Hydrogeologist, Water Treatment Plant 11 Construction and Rehabilitation, Palm Beach County Water Utilities Department, Belle Glade, FL. Responsible for the project design, construction, development, acidization and testing of two new 14-inch and 17.4-inch-diameter Upper Floridan Aquifer production wells to supplement existing reverse osmosis raw water supply. In addition, the project included geophysical and video inspection, acidization, and testing of five existing production wells for raw water supply.

Hydrogeologist, Floridan Aquifer Wellfield Expansion, Confidential Client, Homestead, FL. The project included design, construction, and testing of a new 20-inch-diameter FRP Floridan Aquifer well for emergency cooling water supply by artesian flow and provide the cooling canal system for freshening purposes. Designed for dual purposes and implemented an aggressive acid treatment program to meet or exceed design flow requirements of 3 mgd.

Hydrogeologist, Cooling Canal System Freshening Project, Seawater Wells Construction, Confidential Client, Homestead, FL. The project included design, exploratory coring, construction of two 36-inch-diameter seawater supply wells, and discharge piping construction. Seawater wells provide more than 45 mgd of alternative water supply to the cooling canal system.

Hydrogeologist, Surficial Aquifer Well Replacement Program, Seacoast Utility Authority, Palm Beach Gardens, FL. Project included drilling and logging, geophysical interpretation, well design, construction oversight, testing, analysis of aquifer test data, pump design and completion report preparation associated with three exploratory test wells and 16 new 24-inch-diameter open borehole surficial aquifer wells for nanofiltration supply.

Hydrogeologist, Floridan Aquifer Wellfield Aquifer Performance Test, Confidential Client, Homestead, FL. Floridan Aquifer wellfield testing included testing production well water quality and pump performance to evaluate wellfield trends in production well performance. Wellfield APT included coordination of field activities, installation, monitoring, and analysis of drawdown data.

Hydrogeologist, Surficial Aquifer and Upper Floridan Aquifer Wellfield Rehabilitation, Town of Jupiter, FL. Project included preliminary well video logging and interpretation, rehabilitation oversight, development, testing, and post video logging for five production wells for nanofiltration supply and two for reverse osmosis supply.

Hydrogeologist, Water Treatment Plant Biannual Wellfield Testing, Town of Jupiter, FL. Project scope include biannual testing of 50 surficial aquifer production well water quality and pump performance to evaluate wellfield trends in production well performance. Responsibilities include coordination with water treatment plant, data management, water quality sampling, and evaluation of data to prepare a comprehensive report with recommendations for future rehabilitation.

Hydrogeologist, ASR Permitting, Testing Services, City of West Palm Beach, FL. Project included weekly water quality sampling by FDEP standards during injection, storage, and recovery phases. In addition, logger and data management and reporting were required.

Hydrogeologist, Water Use Permit Compliance, City of West Palm Beach Utilities, FL. Monthly monitoring of and reporting for 30 wetland monitor wells and 8 surface water stations for compliance with water use permit 50-00615-W LC#29. Project included monitoring well construction investigation and construction, historical data research, design of data loggers, hydrologic data management, and interpretation.

Project Geologist/Hydrogeologist, Phase 1 Environmental Site Assessments, FL. Manages Phase I environmental site assessments for various developed and undeveloped properties and clients throughout Florida in accordance with ASTM standard practices. These assessments include historical records reviews, field investigations, historical aerial photo reviews, and interviews with relevant users of the subject sites.

Project Geologist/Hydrogeologist, Petroleum Restoration Program, FDEP, FL. Provides project coordination, health and safety plans, perform equipment calibration, soil and groundwater sampling in accordance with FDEP Standards of Practice, and technical report preparation for numerous former and active petroleum facilities under the Statewide funded cleanup program.

Hydrogeologist, North County Water Treatment Plant, Upper Floridan Aquifer Well Construction and Testing, Indian River County Utilities, Vero Beach, FL. Responsible for the project design, construction, development, acidization and testing of one new 17.4-inch diameter Upper Floridan Aquifer production well to supplement existing reverse osmosis raw water supply. Implemented an aggressive acid treatment program to meet or exceed design rate requirements.

Hydrogeologist, Water Treatment Plant Wellfield Testing, Village of Wellington, FL. Project scope include testing of 16 surficial aquifer production well water quality and pump performance to evaluate well performance and overall wellfield production. Responsibilities include coordination with water treatment plant, data management, water quality sampling, and evaluation of data to prepare a comprehensive report with recommendations for future rehabilitation.

David Vanegas

Services During Construction/UIC Well Testing

Education

BS, Geology, University of South Florida

Relevant Qualifications

- Reclaimed water experience with Florida local governments
- Performs site supervision, site management, client services, data verification/validation, and prepares monthly status reports
- Trained for confined space entry and as a safety coordinator for both construction and hazardous waste activities

Representative Project Experience

Hydrogeologist/Resident Inspector, Construction of Five Upper Floridan Aquifer Reverse Osmosis (RO) Production Wells, Bonita Springs Utilities, FL. Observe the construction and testing of five, 14-inch-diameter RO production wells capable of producing up to 2 mgd from brackish Upper Floridan aquifer up to 1,100 feet deep.

Hydrogeologist/Resident Inspector, Well Rehabilitation of 8 East Terry Street Wells (Sandstone Aquifer) and 2 Upper Floridan Aquifer Production Wells, Bonita Springs Utilities, FL. Observe the well rehabilitation of 10 production wells including 2 Upper Floridan aquifer wells to 1,100 feet depth. Well rehabilitation program consisted of injecting 32% HCL acid (ranging from 500 to 5,000 gallons), well development, pump testing, post acid geophysical logging, and final well disinfection. Increases in post-acid well specific capacity ranged from 100% to 400% of pre-acid capacity.

Hydrogeologist/Resident Inspector, Ft. Myers Beach WWTP Deep Injection Well Mechanical Integrity Testing, Ft. Myers Beach, FL. Project involves the mechanical integrity testing of a Class I municipal injection well completed to 3,000 feet with a capacity of 8 mgd. Testing includes geophysical logging, casing pressure test, and radioactive tracer survey. Due to fast-track efforts by the firm and the well contractor, the MIT was completed in approximately 2 months.

Field Technician, Overflow Mitigation, City of St. Petersburg, FL. Crew member in flow monitoring study impacting the City of St. Petersburg and Pinellas County, ensuring safety procedures and client satisfaction. Installed, monitored, collected, interpreted data, and prepared daily reports for the attention of the project managers. Responsibilities extended to enhancing and maintaining relationships with the client, residents, and other stakeholders.

Education

MS, Environmental Engineering, Colorado State University
BSCE, Civil Engineering, University of Florida

Professional Registrations

Professional Engineer: FL (#22385), CO

Relevant Qualifications

- Reclaimed water, wastewater, and water experience with Florida local governments
- More than 40 years of multidiscipline experience in the planning, design, permitting, and construction of public works projects for government, private, and industrial clients
- Skilled project plan concepts into constructible engineering designs
- Prior to joining Jacobs, served as the City of Dunedin's Section Engineer – Enterprise Utilities where oversaw the design, construction, project management, and permitting of many significant capital improvement program (CIP) projects in the City

Representative Project Experience

Senior Project Engineer, Southwest Water Reclamation Facility (SWWRF) Construction Engineering Services – Recharge Well System Project and Nitrogen Removal Project, Manatee County, FL. Provided construction engineering services for two projects at the SWWRF – Nitrogen Removal Project and Recharge Well System Project. This work has included onsite construction observation, working with the County inspector and contractor in the field, responding to contractor RFIs, working with plant operators to assist with facility start-up, reviewing and evaluating contractor's proposed change order requests, attending progress meetings including preparation of minutes, reviewing shop drawings, preparing punch list, and preparing record drawings.

The recharge well system project included a new recharge well with a 24-inch-diameter pipeline to receive reclaimed water from the plant's chlorine contact basin. To preclude disinfection byproduct formation, a chloramine disinfection system, including an ammonium sulfate storage tank and chemical pump system, was constructed and placed into operation.

Prepared a design to add a basket strainer to the inlet piping for the Cortez Road deep injection well. Constructing revisions to the well's inlet piping involved the basket strainer, which was included as an additive change order to the work of the contractor building the SWWRF recharge well system project.

Senior Project Engineer, NWRF Master Reuse Wet Weather Management Well System Project, Manatee County, FL. This project includes drilling up to three new injection wells at the NWRF along with associated monitoring wells. One of the monitor wells will be a dual zone type as requested by the Florida Department of Environmental Protection (FDEP). Assisted County Purchasing Department with bidding of the project. Engineering services during well construction included coordinating construction efforts with County project manager and the firm's hydrogeologist subcontractor, submittal reviews, responding to contractor RFIs, reviewing and evaluating contractor's proposed change order requests, and conducting construction progress meetings including preparation of minutes. New reclaimed water piping will be extended from the existing RW main along the east side of the plant to the injection wells. Lead for preparing the Basis of Design Report establishing design requirements for the new pipelines and well head piping.

Senior Project Engineer, Management of Wet Weather Flows Using Underground Storage and Disposal – Technical Memorandum, Manatee County, FL. To aid the County with planning future wells to manage wet weather flows at the County's three WRFs, the firm was asked to prepare a technical memorandum to quantify the projected volumes of wet weather flow to be handled, which WRFs would be receiving the projected volumes, when additional wells might be needed to handle the projected flows, and the type of wells that could best service the County's needs. Prepared a technical memorandum

describing the character of existing wet weather flow patterns, how existing wells and storage ponds would respond to the anticipated flows, and future disposal needs based on the projections.

Section Engineer – Enterprise Utilities, Water, Wastewater, and Reclaimed Water Projects, City of Dunedin, FL. As a Section Engineer, managed the design and construction of most of the City's CIP projects during 7-year tenure at the City. Provided engineering assistance for the wide variety of municipal public works projects that typically arise.

For Dunedin's reverse osmosis (RO) water treatment plant (WTP), prepared construction plans and specifications for constructing a 24-inch redundant pipe tie-in; replacement of bulk chemical storage tanks (including managing a fluoride grant from the State Health Department); increasing motor size of the PD blowers for the backwash filters; and bid plans to replace the greensand and other media. Also identified inherent design issues at the plant. Obtained 4-log virus removal certification for the plant from FDEP. Served as the City's project manager for a water plant improvement master plan written by an engineering consulting firm.

For Dunedin's WTP, prepared construction plans and specifications for a project to construct a pre-cast concrete post and panel wall; project to extend a new 16-inch reclaimed water main into newly acquired property for a ground storage tank with booster pump station; and reviewed shop drawings for various process equipment changes in the plant. Also solved an air supply problem between the blowers and aerobic digesters. Served as the City's project manager for projects with engineering consulting firms to provide design for a replacement methanol tank and a new reclaimed water ground storage tank with booster pump station. Played an instrumental role in obtaining exemption an from stormwater permitting for the reclaimed tank site when the Southwest Florida Water Management District (SWFWMD) and FDEP were deciding who had jurisdiction.

Other projects at the City included demolishing an existing elevated water tank; preparing specifications for ground storage tanks internal inspection; construction plans for water distribution system improvements and working with City staff who constructed the improvements; preparing construction plans and specifications for bidding improvements to existing water production wells, preparing specifications for bidding the drilling of new production wells; preparing construction plans and specifications for bidding the construction of a new sanitary force main; and reviewing numerous private sector development plans.

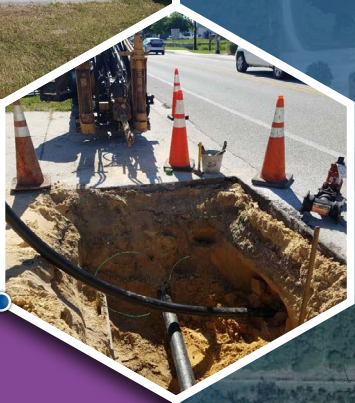
Project Engineer, WTP, St. Johns County, FL. Prepared construction plans and specifications for new 1-mgd lime softening WTP near St. Augustine. Five new inland production wells were included as part of the project to supply raw water to the treatment plant. As part of the construction phase of the project, reviewed shop drawings and contractor pay requests and assisted with resident engineering representation for the entire project including production well construction and 10 miles of new raw water pipeline construction.

Senior Project Engineer, Suburban System Water Line Replacement Project Phase 3, Manatee County, FL. Prepared updated plans and technical specifications to meet the latest County specifications for water line construction. Phase 3 work includes construction of new water line installed by horizontal directional drill methods to replace an existing asbestos cement water line. Also considered replacement of existing small diameter PVC water line using pipe bursting construction techniques. Will serve as the firm's project manager during the construction phase.

Senior Project Engineer, Northwest 5 Watershed Field Flooding Investigations, Hillsborough County, FL. Provided constructability insight and review to aid development of site specific conceptual design solutions to alleviate flooding problems. Provided a QC review of construction cost estimates for the solutions developed.

Senior Project Manager, RO Plant Improvements, Camelot Lakes Utilities, FL. Prepared construction plans, specifications, permitting, and engineering services during construction for replacing the 200,000-gpd RO process equipment. Because this plant was not a publicly owned treatment facility, disposal of the RO concentrate was subject to an FDEP industrial waste permit. Previously, the permit allowed the RO concentrate to be discharged into a large onsite lake regulated by SWFWMD. For the new permit, FDEP was not ready to continue this discharge arrangement. Worked with FDEP and SWFWMD to negotiate a permitting mechanism whereby the concentrate discharge could continue to the lake, but with the lake permitted as a stormwater detention basin under FDEP rules.

3. Project Team Experience/References



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JACOBS®

3. Project Team Experience/ References

Jacobs, founded in 1947, holds Florida licenses for engineering, architecture, geology, surveying and mapping, and landscape architecture and is licensed as a certified general contractor. In December 2017, Jacobs acquired CH2M HILL, combining our resources and advancing our standing as an industry-leading engineering/design, program management, and construction management firm, as ranked by *Engineering News-Record (ENR,* 2018). Providing the City access to more than 78,000 multidiscipline professionals worldwide, our dedicated, local project team has the experience, technical capabilities, and staff availability to assist you and your stakeholders with the full range of expertise required to complete this project. Industry leadership means more than size and geographic reach—it also means that we are on the leading edge of the newest developments and technologies—and we apply this knowledge locally to benefit the City's projects.

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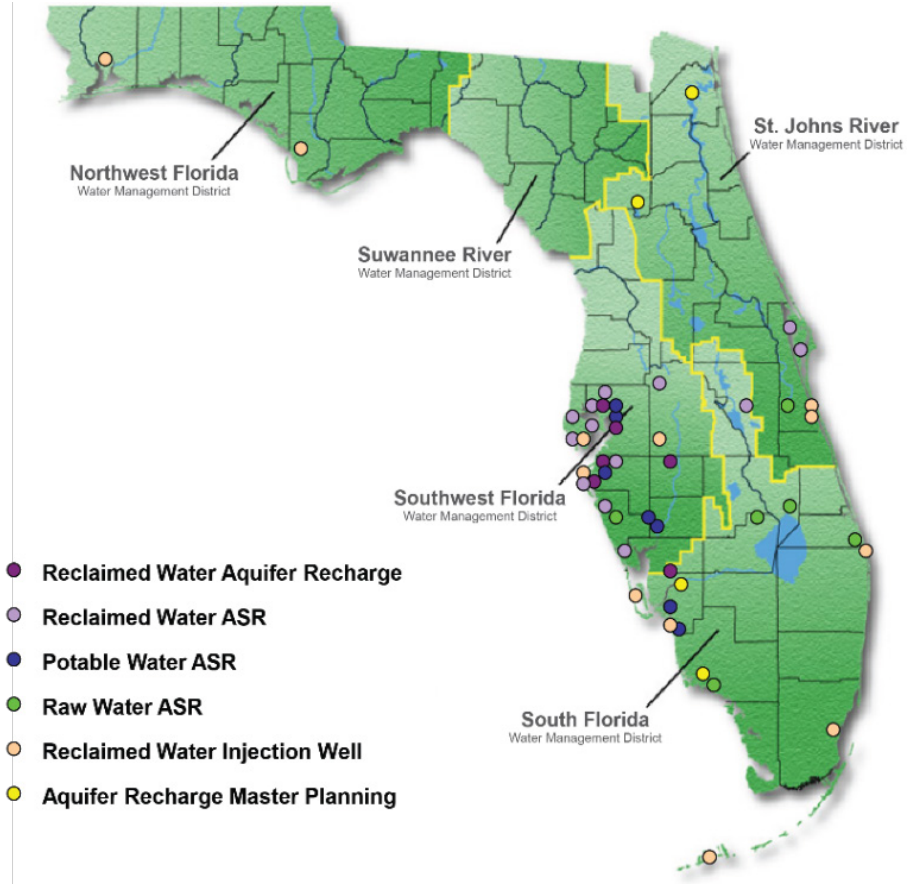
ASR Leader Since 1983

Jacobs (as CH2M) pioneered the development and implementation of ASR technology as a tool for managing water supply systems in Florida. Exhibit 3-1 highlights our extensive ASR work in Southwest Florida and throughout the state.

We have designed many of the currently operational ASR projects in the United States and two of the largest operational potable water ASR systems in Florida: the City of Tampa Rome Avenue Park ASR system and the Peace River Manasota Regional Water Supply Authority ASR system.

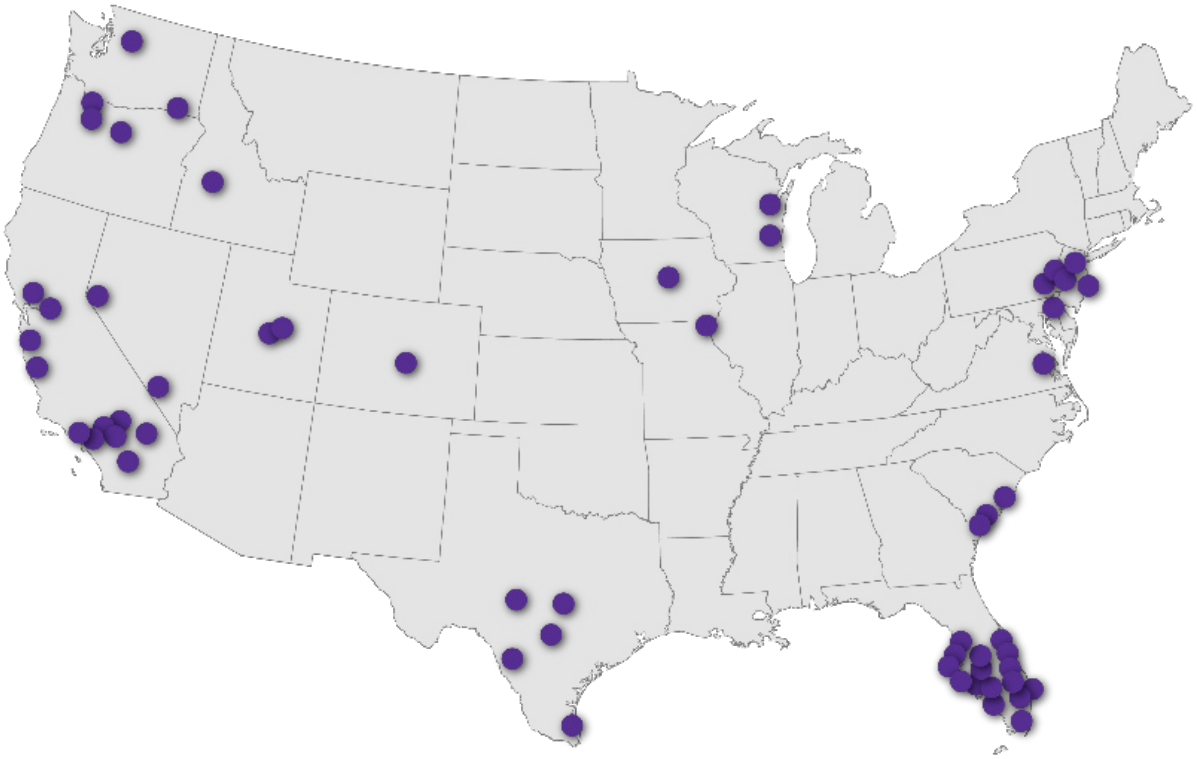
We also assisted with securing the first two operational permits issued in Florida for reclaimed water ASR (RWASR): Englewood Water District and City of St. Petersburg. Currently, we are working on aquifer recharge projects for both Manatee and Sarasota Counties to help manage their wet-weather flows for their reclaimed water systems while also improving groundwater resources by recharging fresh water into the Upper Florida aquifer to mitigate coastal saltwater intrusion as a result of overpumping in the region.

Exhibit 3-1. Florida ASR Experience.
Since 1983, Jacobs has helped lead the way in Florida RWASR. Our experience in ASR permitting, design, bidding, construction, and operational testing provides in-depth understanding of regulatory challenges during operational testing and the key elements required to secure project success.



Recently, Jacobs was instrumental in securing the first two operational permits for potable water ASR systems exhibiting arsenic mobilization issues. The first was for the Peace River Manasota Regional Water Supply Authority ASR system. Jacobs assisted the Authority with securing the first (and only) Water Quality Criteria Exemption (WQCE) issued for arsenic for Class V ASR wells, exempting arsenic concentrations in the aquifer that occur within their property boundary that are over the drinking water standard (DWS). This was approved by the Florida Department of Environmental Protection (FDEP) because the Authority had demonstrated institutional control of the water influenced by ASR activity through an extensive monitoring network that showed that arsenic concentrations remained below the DWS at their property boundary. FDEP's issuance of a WQCE for a federal primary DWS led the Environmental Protection Agency (EPA) to re-evaluate their interpretation of the Code of Federal Regulations (CFR) related to the Clean Water Act and support FDEP's primacy to issue permits under the Florida Administrative Code (FAC) as long as the operator meets certain criteria.

Jacobs also successfully secured the second operational permit issued in the state for a potable ASR system with arsenic mobilization for the City of Tampa ASR system. That was achieved as a result of a City ordinance that limited groundwater use, which demonstrated the City's institutional control of water influenced by ASR activities. Jacobs is at the forefront of these recent ASR permitting developments and is well suited to assist you with permitting strategies for your ASR system.



From our first ASR project in 1983 for Manatee County, Florida, we have expanded our expertise by developing operational ASR projects throughout the United States and the world. ASR facilities are successfully operating at sites across the country—from Florida to Washington, and California to New Jersey.

UIC Well Expertise

As shown in Exhibit 3-2, Jacobs has an unequaled understanding of DIW systems for both effluent and membrane concentrate disposal, having planned, designed, constructed, and tested many such systems for clients throughout Florida. We have been providing deep well services to our clients since the 1960s. Although, historically, we have served as the engineering design and environmental consultant on these projects, more recently we have also served as the design-build contractor for drilling and well system installation. We have experience working with wells ranging from 6 to 30 inches in diameter. Within the past 5 years, Jacobs has provided testing or design and construction management services for more than 25 Class I/V disposal well projects. Our services also include coordination of mechanical integrity testing (MIT), consent order negotiations, well workovers, well cleanouts, well closures, permit renewals, permit applications, feasibility studies, and surface equipment design and installation.

Jacobs is highly respected by the state and federal regulators who oversee the UIC Program, and our staff is composed of personnel who have years of experience conducting Class I/V injection well work. Our staff routinely works with EPA and state regulators to discuss client permit and operational needs, as well as serving on rulemaking (62-528 F.A.C.) committees, and is very active in the Groundwater Protection Council. Our trusted relationships will prove especially valuable during well permitting and operational testing.

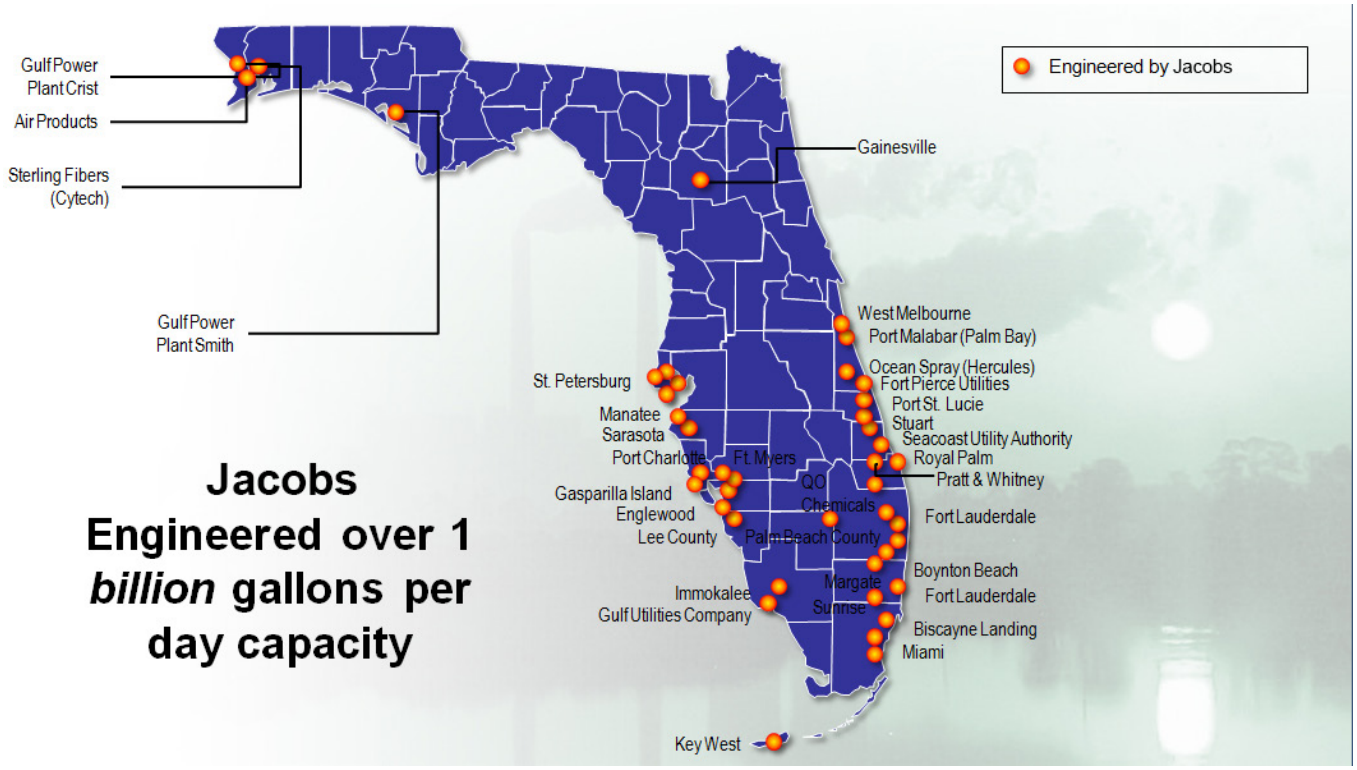


Exhibit 3-2. Unmatched Florida Injection Well Experience
Our experience providing engineering design, environmental consulting, and design-build services for drilling and well system installations throughout Florida will streamline well permitting and operational testing and deliver a dependable and compatible RO supply well system.

Related Project Experience

The following 10 projects demonstrate our performance on relevant well work in Florida for local governments.

Exhibit 3-2. Representative Project Experience. *Jacobs brings unmatched expertise in all phases of vertical well construction and facility infrastructure improvement, including pipeline and disinfection, with relevant project experience right next door in Manatee County.*

Project Name	Team Members Involved	Completion Date	Florida Government Project	Production Well	UIC ASR/Recharge Well	Design: Wells/Infrastructure	Survey	Subsurface Utility Eng	Geotechnical Investigations	Feasibility Study	Permitting	Process/Mechanical	UIC Well Testing	Construction Services	Public Involvement
Fort Myers Beach/Fiesta Village Reclaimed Water ASR Well Project, FL	Thomas Farkas, Bill Beddow, Tao Fu, David Vanegas	2020 (est.)	■		■	■	■	■	■	■	■	■	■	■	
Reclaimed Water ASR Well Cycle Testing and Operating Permit, City of Palmetto, FL	Thomas Farkas; Niel Postlethwait, Jon Ouverson, Amanda Berens; Chris Sharek	2017	■		■						■		■		■
Partially Treated Surface Water ASR Pilot Study, Peace River Manasota Regional Water Supply Authority, FL	Thomas Farkas, Ryan Messer, Niel Postlethwait, Tao Fu, Jon Ouverson, Allison Lewis, Chris Sharek	2018	■		■					■		■	■		
Boynton Beach ASR Well System and Permitting, FL	Gerrit Bulman, PG	2018	■	■	■	■	■	■	■	■	■	■	■	■	■
Bee Ridge WRF Recharge Well System, FL	Thomas Farkas, Niel Postlethwait, Jon Ouverson	2021 (est.)	■		■	■		■			■		■	■	■
Bonita Springs Utilities RO Wellfield Expansion, FL	Thomas Farkas, Bill Beddow, David Ashman, Jon Ouverson, David Vanegas, Joe Goldbach, David Paiko, Rich Morrison, David Nicholson, Cyrus Saharkhiz, Tao Fu	2018	■	■		■	■	■	■		■	■	■	■	
Southwest Water Reclamation Facility Recharge Well System, Manatee County, FL	Niel Postlethwait, Ryan Messer, Jeff Lehnen, Jon Ouverson, Allison Lewis, Tao Fu, Joe Goldbach	2017	■		■	■	■	■	■	■	■	■	■	■	
Master Reuse Wet Weather Management Well System, Manatee County, FL	Thomas Farkas, Niel Postlethwait, Ryan Messer, Jeff Lehnen, Amanda Berens, Jon Ouverson, Tao Fu, Allison Lewis, Matt Tennant	2020 (est.)	■		■	■	■	■	■	■	■	■	■	■	
Polk County Lower Floridan Aquifer (LFA) Investigation, SWFWMD FL	Thomas Farkas, Neil Postlethwait, Amanda Berens, Jon Ouverson	2019 (est.)	■	■		■					■			■	■
Green Meadows RO / IX WTP and Wellfield, Lee County FL	Tom Farkas, Bill Beddow, Jon Ouverson, Amanda Berens, Cyrus Saharkis	2018	■	■	■	■	■	■	■	■	■	■	■	■	■

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Fort Myers Beach/Fiesta Village Reclaimed Water ASR Well Project, Lee County Utilities (LCU), FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
2020 (estimated)	Tom Farkas, Bill Beddow Tao Fu David Vanegas	Lyssa Lott, Project Manager, 239.533.8149; LLott@leegov.com

To provide greater seasonal reliability to LCU's reclaimed water distribution system and reduce Fiesta Village WWTP's highly treated discharge to the Caloosahatchee River, Jacobs (as CH2M) was selected to investigate, design, permit, construct, and test an initial RWASR well near the Fort Myers Beach WWTP and, if successful, expand the ASR system to three wells to serve both LCU WWTPs.

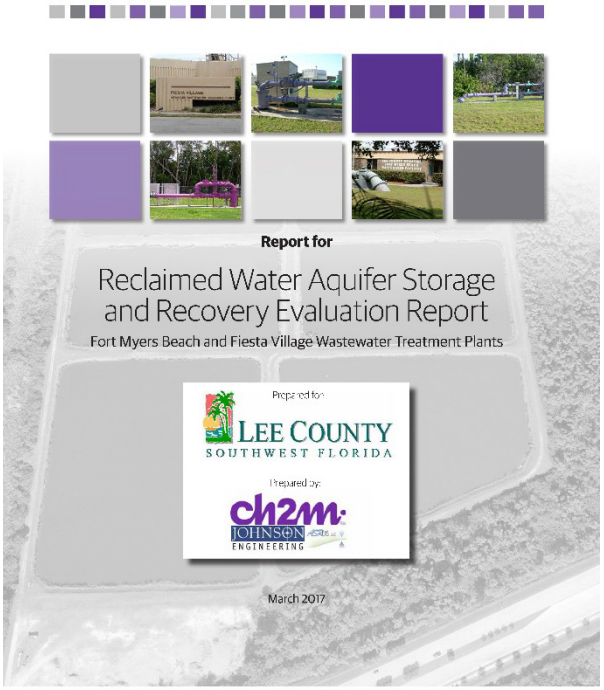
Our investigation generated three feasibility products: 1) ASR feasibility of the site, 2) Fort Myers Beach and Fiesta Village WWTPs reclaimed water supply and demand analysis, and 3) suitability of reclaimed water quality for ASR use. The investigation concluded that reclaimed water was feasible.

Tom Farkas is the Project Manager and Lead Hydrogeologist for the ASR system construction and testing. The initial ASR well system is completed and permitted, and construction is underway. An FDEP Class V, Group 3 UIC permit for three ASR wells and three storage zone monitoring wells and a rule variance for six water quality parameters were issued in July 2018. ASR well construction and testing; ASR system expansion; cycle testing infrastructure design, permitting, and construction; and ASR cycle testing is expected to continue into 2020.

LCU's feasibility study evaluated if an RWASR system is feasible based on site hydrogeology, WWTP effluent water quality and availability, site constraints, RW demands, and estimated capital and operations and maintenance (O&M) costs.

Project Similarities

Florida Government Project	✓
UIC ASR/Recharge Well	✓
Design (Wells and Infrastructure)	✓
Survey	✓
Subsurface Utility Engineering	✓
Geotechnical Investigations	✓
Feasibility Study	✓
Permitting	✓
Process/Mechanical	✓
UIC Well Testing	✓
Construction Services	✓



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Reclaimed Water ASR Well Cycle Testing and Operating Permit, City of Palmetto, FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
2017	Tom Farkas; Niel Postlethwait, Jon Ouverson, Amanda Berens; Chris Sharek	Allen Tusing, Director of Public Works, City of Palmetto, 941.723.4580, atusing@palmettofl.org

The City of Palmetto has implemented a reclaimed water ASR test well system at its wastewater treatment facility to better manage its reclaimed water supply and demand, and to enhance overall system reliability. Reclaimed water ASR will reduce demand of the City's potable water supplies typically used for irrigation and eliminate the need for surface water discharge of excess reclaimed water to Terra Ceia Bay. The project included construction and testing of an ASR well and associated monitor wells, ultraviolet disinfection treatment system, and pumping, piping, structural, electrical, and I&C systems. ASR well system design, construction, and testing was completed under the leadership of Tom Farkas as Project Manager, in association with Sharek Solutions.

ASR cycle testing was completed in December 2016. To fully integrate the ASR well into the City's reclaimed water system, the City requested that Jacobs (as CH2M) provide services to complete the ASR cycle test summary report, prepare an FDEP Class V ASR Well Operating Permit application, and a water use permit (WUP) modification from the Southwest Florida Water Management District (SWFWMD). We submitted the cycle test summary report to FDEP in March 2017, FDEP Class V Well operating permit application in April 2017, and SWFWMD WUP modification application in May 2017. Both permits were issued to the City by November 2017. The project was completed on time and within budget with exceptional quality.

Project Similarities

Florida Government Project	✓
UIC ASR/Recharge Well	✓
Permitting	✓
UIC Well Testing	✓
Public Involvement	✓

Completed Reclaimed Water ASR Wellhead facility with ultraviolet disinfection treatment and sodium bisulfite pretreatment.

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Partially Treated Surface Water ASR Pilot Study, Peace River Manasota Regional Water Supply Authority, FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
2018	Tom Farkas, Ryan Messer, Niel Postlethwait, Tao Fu, Jon Ouverson, Allison Lewis, Chris Sharek	Mike Coates, P.G., 941.316.1776, MCoates@regionalwater.org

Jacobs (as CH2M) has helped the Authority expand its monitoring well network associated with its potable ASR system for over a decade. The Authority recently performed a pilot study to determine the benefits and potential impacts of using partially treated surface water (filtered only) as a source water for its potable water ASR Class V well system. The Authority operates two ASR Wellfields, referred to as Wellfield 1 (WF1) and Wellfield 2 (WF2). WF1 has been in operation since 1987 and consists of nine ASR wells. WF2 consists of 12 ASR wells located southwest of the Peace River Facility, south of Reservoir No.1. Both wellfields were issued operation permits in 2013 with Jacobs assistance.

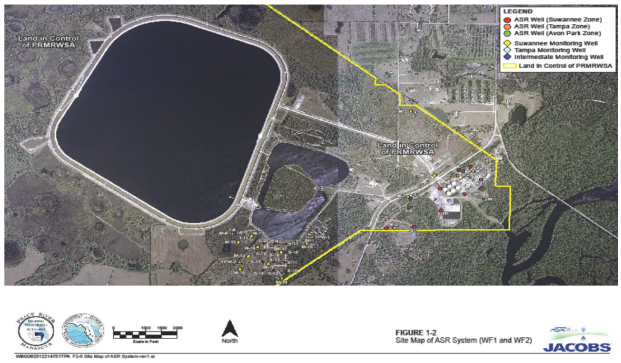
The recent pilot study encompassed two wells within WF2. For the study, surface water stored in Reservoir No. 1 was pulled through a floating intake tube with 1/4-inch inlet holes, pumped at 2 to 3 mgd through four parallel in-line filter pods prior to being recharged into the two test wells. The filtration opening sizes varied during recharge, with the use of mesh filter bags and a steel strainer basket, between 50-micron and 1/8-inch openings. After recharge, partially treated surface water was stored and monitored at existing monitoring wells. After storage, water was recovered directly back to Reservoir No. 1.

Jacobs contracted directly with Xylem Dewatering Solutions, Inc. to rent the equipment for the cycles, and coordinated with that firm for mobilizations, demobilizations, and setup modifications.

We also conducted two recharge-storage-recovery cycles for this study and developed a final report that analyzes the collected flow and water quality data.

Project Similarities

Florida Government Project	✓
UIC ASR/Recharge Well	✓
Feasibility Study	✓
Process/Mechanical	✓
UIC Well Testing	✓



Site Map of ASR System (WF1 and WF2).

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Boynton Beach ASR Well System and Permitting, FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
Ongoing	Gerrit Bulman, PG	City of Boynton Beach Utilities Department, Michael R. Low, Deputy Director Operations & Maintenance, 561.742.6403, lowm@bbfl.us

Jacobs (as CH2M) began our relationship with the City of Boynton Beach in 1988; we have since completed a significant number of major wellfield, water treatment, and general civil engineering services for the City, including project management; master planning; civil, process, geotechnical, electrical, heating, ventilation, and air conditioning (HVAC), mechanical, structural, and WTP and wellfield engineering; environmental/permitting; hydraulic modeling; hydrogeological; cost estimating; financial assistance; grant writing support; economics; and construction management and administration.

As part of our WTP and wellfield services, we designed and constructed the first ASR well in Southeast Florida; it has been in operation since 1993. The nanofiltration WTP, designed and constructed by Jacobs, was the first major WTP in Palm Beach County designed for compliance with the wellhead protection ordinance. As part of this project, we closely coordinated tie-ins with the owner, to ensure water production continued during construction for the nanofiltration plant, and aesthetically designed the plant to blend into the highly residential environment. We also obtained permits from the FDEP Southeast District and Palm Beach County Health Department for the West WTP, West WTP Phase II improvements, and East WTP improvements projects, as well as permits from the South Florida Water Management District (SFWMD) for the East and West wellfields.

ASR-1 and ASR-2 Wellfield Development

Jacobs prepared a preliminary ASR feasibility study to help the City meet the rising water demands on its potable water supply system. At that time, water supply and treatment capacity equaled the actual demands on the system. To address the City's needs, we reviewed historical water demands and water treatment practices to identify the optimum application of ASR and identified three potential ASR applications: canal

Project Similarities

Florida Government Project	✓
Production Well	✓
UIC ASR/Recharge Well	✓
Design (Wells and Infrastructure)	✓
Survey	✓
Subsurface Utility Engineering	✓
Geotechnical Investigations	✓
Feasibility Study	✓
Permitting	✓
Process/Mechanical	✓
UIC Well Testing	✓
Construction Services	✓
Public Involvement	✓

water storage, raw and treated water storage in existing wells, and seasonal storage of drinking-quality water in the Upper Floridan Aquifer System.

We recommended treated water storage in the upper Floridan aquifer system as the most cost-effective alternative that could be quickly implemented to offset the City's peak demands in both the short term and, with subsequent expansion, in the long term. In 1992, Jacobs completed Phase I, comprising design, permitting, construction, and cycle testing of a 16-inch-diameter ASR well (ASR-1) that recovers up to 2 mgd, providing additional capacity to meet peak demands during the past 15 years. ASR-1 typically stores around 90 million gallons annually.

As a result of the success of this ASR well, we were selected to assist the City with Phase II, constructing a second ASR well at the East WTP in 2002. On behalf of the City, we applied for and were awarded a grant for $200,000 by the SFWMD for alternative water supply systems.

In June 2007, we completed the design, permitting, bidding, construction, and hydrogeologic testing of the second well (ASR-2) with an improved 24-inch-diameter fiberglass casing design. ASR-2 uses the same storage zone as ASR-1. Results of aquifer performance testing demonstrate the utility of operating both wells together.

Ongoing ASR Permitting Assistance

We assisted the City with a construction and testing permit renewal application for ASR-2 at the East WTP, submitted in October 2009, and then responded to a subsequent FDEP Request for Information (RFI) in March 2011. In 2012, we subsequently reviewed the draft permit issued by FDEP, provided numerous revisions to permit language, and supported the City at the public meeting preceding the Notice of Intent to Issue.

In 2015, we supported the City with a review of the operating data and water quality for both ASR-1 and ASR-2. Currently, in 2018, we are assisting the City with an operation permit application, an FDEP permitting process of converting from the testing permit to an operation permit, which is expected to be concluded later this year.

Jacobs has successfully completed more than 100 projects for the City of Boynton Beach. Currently, we are helping the City convert its testing permit into an operation permit for ASR-1 and ASR-2.

The City of Boynton Beach and Jacobs (formerly CH2M) authored a conference paper for the Florida Section of the American Water Works Association in Orlando, describing the testing and unique storage zone ASR. Hydrostratigraphic, geophysical logging, and water quality data were interpreted and summarized by Jacobs.

Bee Ridge Water Reclamation Facility Recharge Well System, Sarasota County Public Utilities (SCPU), FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
2021 (estimated)	Tom Farkas, Niel Postlethwait, Jon Ouverson	Cliff Harrison, County Senior Hydrogeologist, 941.677.2762; hhariso@scgov.net

SCPU has developed and operates an extensive reclaimed water reuse and storage program for the North County Service Area. Due to the continued planned expansions of WRFs in this service area, SCPU requires emergency disposal capacity during wet weather conditions when irrigation demands are at their lowest and storage facilities are fully maximized. The County identified a recharge well system as a viable backup disposal option.

A feasibility study was performed in 2013 under the leadership of Tom Farkas as Project Manager (while with another consulting firm), which determined that a Class I DIW in the upper Floridan aquifer (UFA) was not feasible at the Bee Ridge site, given UFA's relatively fresh groundwater quality. However, as part of the same study, it was determined that the UFA may be feasible for a recharge well system and that the lower Floridan aquifer (LFA) may have the potential for deep well injection.

A deep exploratory well (through an FDEP Class V exploratory well construction permit) was installed at the Bee Ridge site to collect the hydrogeologic and groundwater quality data required to confirm the feasibility of a UFA recharge well and/or LFA for deep well injection. The exploratory well was constructed to a total depth of approximately 4,500-feet below land surface (bls) as part of Phase I, which confirmed a recharge well system in the UFA was the best option for managing excess reclaimed water. This exploratory well is the deepest non-petroleum exploratory well drilled in Sarasota County.

Project Similarities

Florida Government Experience	✓
UIC ASR/Recharge Well	✓
Design (Wells and Infrastructure)	✓
Survey	✓
Subsurface Utility Engineering	✓
Permitting	✓
Process/Mechanical	✓
UIC Well Testing	✓
Construction Services	✓
Public Involvement	✓

Jacobs helped secure an FDEP UIC Class V Test Well Permit, which involves recharging the UFA with reclaimed water containing less than 10,000 mg/L of total dissolved solids.

After Tom joined Jacobs in 2016, Jacobs was subcontracted by his previous consulting firm to complete the well construction report and assist in completing the project. An FDEP Class V Recharge Test Well Construction Permit was obtained in 2017 for constructing and testing two recharge test wells, which will have a 24 inch final casing depth of 1,200 feet bls, and total depth of 1,700 feet bls with a maximum 18-mgd recharge capacity.

Phase 2, currently underway, includes a survey of existing site conditions, preliminary design report for anticipated infrastructure needs, design of two Class V recharge wells, monitoring wells, wellheads, pumping, piping, instrumentation and controls (I&C), construction management and resident inspection services, preparation of a final engineering report, and operational testing and Class V operation permit submittal.

This project includes many similar major tasks as the City of Venice's Class V ASR Well, including UIC Class V test well construction and operation permitting, well design, bidding, construction, and operational testing, and major infrastructure design and construction for pumps, piping, electrical, I&C, structural, and treatment system modifications.

Bonita Springs Utilities (BSU) RO Wellfield Expansion, Bonita Springs, FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
2018	Tom Farkas, Bill Beddow, David Ashman, Jon Ouverson, David Vanegas, Joe Goldbach, David Paiko, Rich Morrison, David Nicholson, Cyrus Saharkhiz, Tao Fu	Kim Hoskins, BSU Director of Engineering, 239.390.4985; khoskins@bsu.us

To provide the needed brackish water supply for a 2-mgd RO WTP expansion project, BSU added five new upper Floridan aquifer (UFA) RO supply wells. Phase 1 consisted of planning, permitting, design, and hydrogeologic services for installing the wells. The well heads, pumps, and piping were completed as part of Phase 2.

Well drilling construction was executed under a standard project delivery contract. Jacobs prepared design specifications for bidding and then oversaw the well drilling contractor that was contracted directly to BSU. The wellhead, pump, and piping infrastructure was completed under a design-build contract with Jacobs contracted directly to BSU and the infrastructure contractor subcontracted to Jacobs. This unique contracting approach saved BSU hundreds of thousands of dollars.

As part of the Phase 1 work to site, design, permit, and provide professional services during well construction, Jacobs provided the following services:

- Wellfield site planning, including updating new hydrogeologic and BSU operating data.
- Design, bidding assistance, and hydrogeological services for the new RO production wells. Each well was completed with 14-inch final casing to approximately 800 feet bls and an open borehole to approximately 1,100 feet bls. Well design capacities ranged from 1 to 2 mgd at specific capacities between 25 and 90 gpm/foot of drawdown.
- Prepared and submitted a minor modification to BSU's water use permit to SFWMD for the new wells.
- Prepared and submitted an exception request to well setback requirements to Lee County Health Department.

Project Similarities

Florida Government Project	✓
Production Well	✓
Design	✓
Survey	✓
Subsurface Utility Engineering	✓
Geotechnical Investigations	✓
Permitting	✓
Process/Mechanical	✓
UIC Well Testing	✓
Construction Services	✓

This project included engineering and hydrogeological design, including extensive geotechnical investigations for raw water line piping design and installation, as well as construction management for five new RO supply wells—similar to the City's requirements for RO Well 8.

- Met with the City of Bonita Springs to discuss the project and obtain City permits for well construction.
- Coordinated with interested parties regarding the discharge of groundwater required for well development.

Although Hurricane Irma delayed the project by 1 month, our rigorous project management and controls enabled well construction costs to come in under budget by approximately $100,000.

Southwest Water Reclamation Facility Well System, Manatee County Public Works and Utilities, FL

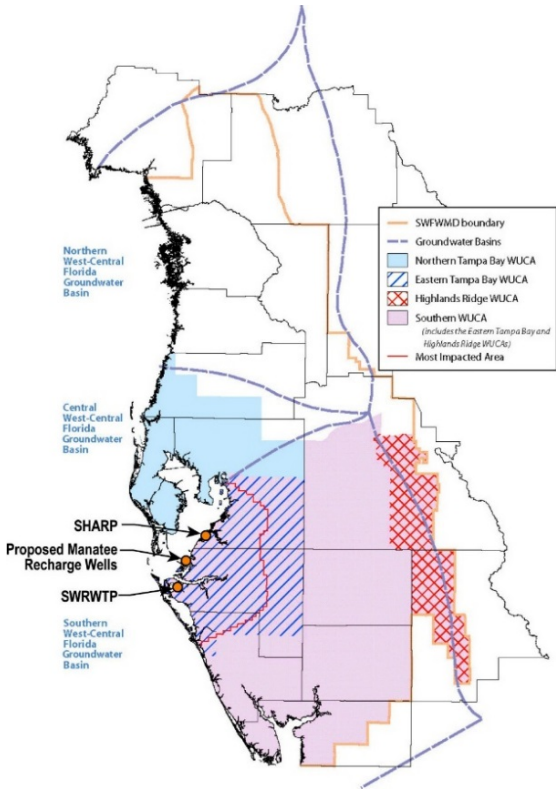
Completion Date:	Proposed Team Member Involvement:	Client Reference:
2017	Niel Postlethwait, Ryan Messer, Jeff Lehnen, Jon Ouverson, Allison Lewis, Tao Fu, Joe Goldbach	Jeff Goodwin, Wastewater Division Manager, 941.792.8811 ext. 5235, jeff.goodwin@mymanatee.org

Manatee County has determined that there is a need for additional wet weather disposal at the Southwest Regional Water Reclamation Facility (SWWRF). Currently, wet weather flows are managed through a series of storage ponds and a single Class I injection well (IW-1) located to the west of the SWWRF on Cortez Road. IW-1 has a capacity of approximately 13 mgd at the reuse system distribution pressure of approximately 82 psi. Another well would allow additional wet weather disposal capacity and would provide the County with redundancy in its injection well system.

The conceptual proposed injection well includes a Class V recharge well to dispose of excess reclaimed water during the wet season. The injection zone of the Class V recharge well will be in the same zone as IW-1 (Avon Park upper permeable unit). However, since it will be located further inland, the injection zone will likely be classified as an underground source of drinking water (USDW). The injected water will be required to meet primary and secondary drinking water standards, though a water quality criteria exemption or zone of discharge can be requested for secondary standards. The current conversion of the SWWRF treatment process to a Modified Ludzack-Ettinger (MLE) process will cause the new effluent to have minimal ammonia concentration, which could cause the sodium hypochlorite dosage to create disinfection byproducts (DBPs) in the effluent. To counteract this DBP formation, ammonium sulfate will be injected at the same points as the current sodium hypochlorite: at the head of the chlorine contact chambers and on the effluent side of the Reuse Storage Pond disk filters. By locating the well at the SWWRF to reduce the transmission time of the water from the plant to the well, water quality should meet the requirements for injection into a USDW that has a total dissolved solids

Project Similarities

Florida Government Project	✓
UIC ASR/Recharge Well	✓
Design (Wells and Infrastructure)	✓
Survey	✓
Subsurface Utility Engineering	✓
Geotechnical Investigations	✓
Feasibility Study	✓
Permitting	✓
Process/Mechanical	✓
UIC Well Testing	✓
Construction Services	✓



concentration greater than 3,000 milligrams per liter (mg/L).

One important criterion for permitting an injection well is the location of the USDW. The USDW, as defined by FDEP, is an aquifer with a total dissolved solids (TDS) concentration of less than 10,000 mg/L. Based on available literature, the 10,000 TDS interface in this region was near the targeted zone for injection, the highly permeable upper Avon Park unit.

Jacobs (as CH2M) developed the design for a Class V aquifer recharge system permitted by following the Florida Reuse Rule (Ch. 62-610.560, FAC) as a Groundwater Recharge by Injection system. The recharge system will not only provide additional wet weather disposal for the County, but will also provide benefit to regional groundwater resources by providing a saltwater intrusion barrier for the upper Floridan aquifer in the Southern Water Use Caution Area (SWUCA) Most Impacted Area (MIA) as defined by the SWFWMD. Jacobs also assisted the County with obtaining a permit and has completed design of the well and supporting infrastructure.

Master Reuse Wet Weather Management Recharge Well System, Manatee County Public Works and Utilities, FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
2020 (estimated)	Tom Farkas, Niel Postlethwait, Ryan Messer, Jeff Lehnen, Amanda Berens, Jon Ouverson, Tao Fu, Allison Lewis, Matt Tennant	Jeff Goodwin, Wastewater Division-Utilities Manager; 941.792.8811 x5235, jeff.goodwin@mymanatee.org.

Manatee County has determined that three Class I injection wells need to be constructed to provide for additional wet weather disposal of reuse water that is treated according to high level disinfection (HLD) standards. Jacobs (as CH2M) has been selected as the consultant to provide professional engineering services that include design, permitting, bid phase services, and services during construction.

The wells are being permitted under the FDEP UIC program. The injection zone of the Class I injection wells is targeted to be in the lower Floridan aquifer (LFA). However, since little information on the hydrogeology of the LFA in the region is available, the wells will be permitted as Class V exploratory wells and will be subsequently converted to Class I wells through a permit modification to allow injection testing to begin. This permitting approach is used when the hydrogeology and ambient groundwater quality are uncertain. It requires less information to be included in the permit application and allows more flexibility in the final design of the wells.

A basis of design report will be prepared to establish design criteria for the injection well system and provide a conceptual layout of the infrastructure related to the new wells. This report will include design criteria for civil, mechanical, structural, electrical, and I&C disciplines as well as preliminary estimates of probable construction cost. Complete construction plans and technical specifications will be prepared and reviewed with the County and FDEP before bidding the project.

Services during the drilling of these three LFA injection wells and associated monitoring wells will include assistance with regulatory reporting during construction and testing, onsite presence of personnel to observe the progress of construction, and a well completion report.

Project Similarities

Florida Government Project	✓
UIC ASR/Recharge Well	✓
Design (Wells and Infrastructure)	✓
Survey	✓
Subsurface Utility Engineering	✓
Geotechnical Investigations	✓
Feasibility Study	✓
Permitting	✓
Process/Mechanical	✓
UIC Well Testing	✓
Construction Services	✓

Construction of the Class V exploratory well was completed in January 2018 and an FDEP Class I Construction Permit Application is pending for the well to be converted to IW-1 for operational testing.

The nature of subsurface construction for these wells is not simply the implementation of a design, but rather a drilling investigation that results in a final completion of the well based on the hydrogeologic conditions actually encountered.

Construction of the Class V exploratory well at the North Water Reclamation Facility (NWRF) site was completed in January 2018 and an FDEP Class I Construction Permit Application is pending for the well to be converted to IW-1 for operational testing. IW-2 construction began in February 2018.

Polk County Lower Floridan Aquifer (LFA) Investigation, Southwest Florida Water Management District, FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
2019 (estimated)	Tom Farkas, Niel Postlethwait, Amanda Berens, Jon Ouverson	George Schlutermann, PG, SWFWMD, 352.796.7211, ext. 4212, George.Schlutermann@swfwmd.state.fl.us

To help the SWFWMD develop new water supplies as part of the Central Florida Water Initiative (CFWI), Jacobs (as CH2M) was selected to explore the LFA in central Polk County for future brackish groundwater supply and initial availability for an injection zone to manage generated membrane treatment process concentrate.

As part of these activities, Jacobs is leading the design, construction, and testing of a UFA monitoring well (completed), 2,500-foot-deep multi-zone monitoring well (MZMW), and 2,500-foot-deep test production well (TPW) at a site near Frostproof. The project includes construction of a 5-million-gallon lined temporary storage pond to manage brackish test production water that will be returned to its source aquifer. The pond is needed to protect the quality of surrounding wetlands and the surficial aquifer. The investigation includes drilling and testing the Floridan aquifer to its base through the MZMW, estimated at 3,200 feet deep, for supply potential and deeper injection well potential. After testing, the MZMW will be back-plugged from 3,200 feet to 2,500 feet to complete as a monitoring well. MZMW construction and testing are underway with the hydrogeologic investigation complete to 1,600 feet deep. The project is expected to continue to the end of 2019.

Amanda Berens is the Project Manager with close support from Tom Farkas, as Senior Hydrogeologist, and other proposed team members.

Project Similarities

Florida Government Project	✓
Production Well	✓
Design (Wells and Infrastructure)	✓
Permitting	
Construction Services	✓
Public Involvement	✓

Lower Floridan Aquifer Exploratory Well

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Green Meadows RO / Ion Exchange (IX) Water Treatment Plant and Wellfield, Lee County, FL

Completion Date:	Proposed Team Member Involvement:	Client Reference:
2018	Tom Farkas, Bill Beddow, Jon Ouverson, Amanda Berens, Cyrus Saharkis	Mikes Maillakakis, Project Manager 239.533.5672 MMaillakakis@leegov.com

The Green Meadows Water Treatment Plant treats water from multiple aquifers using the latest, large-scale treatment technologies. The facility includes an RO and IX system to produce up to 14 mgd of potable water. The WTP is fed by 34 wells from three aquifers: surficial, Sandstone, and brackish water from eight new Floridan aquifer wells.

The project included eight new UFA supply wells, Class I industrial deep injection well and monitor well system, 5-mile wellfield roadway improvements including elevation and paving, raw water transmission mains, fresh water supply wellhead improvements, pre- and post-water treatment systems new administrative and process buildings, roadways and site improvements.

The project began with Jacobs completing two full-scale test UFA wells to pilot test the RO and IX systems and to confirm water quality and aquifer characteristics to update the County's groundwater flow model. The model was used to support a new county-wide water use permit.

Project Similarities

Florida Government Project	✓
Production Well	✓
UIC ASR/Recharge Well	✓
Design (Wells and Infrastructure)	✓
Survey	✓
Subsurface Utility Engineering	✓
Geotechnical Investigations	✓
Simulation Modeling	✓
Feasibility Study	✓
Permitting	✓
Process/Mechanical	✓
Construction Services	✓
Public Involvement	✓

Jacobs provided services from RO Membrane Water Treatment technology to brackish groundwater wellfield development and concentrate disposal through UIC injection well.

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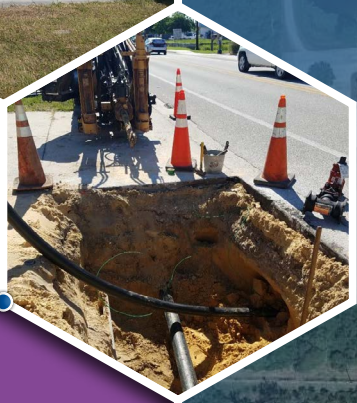
4. Ability to Perform the Services Expeditiously at the City's Request + Team Location and Availability



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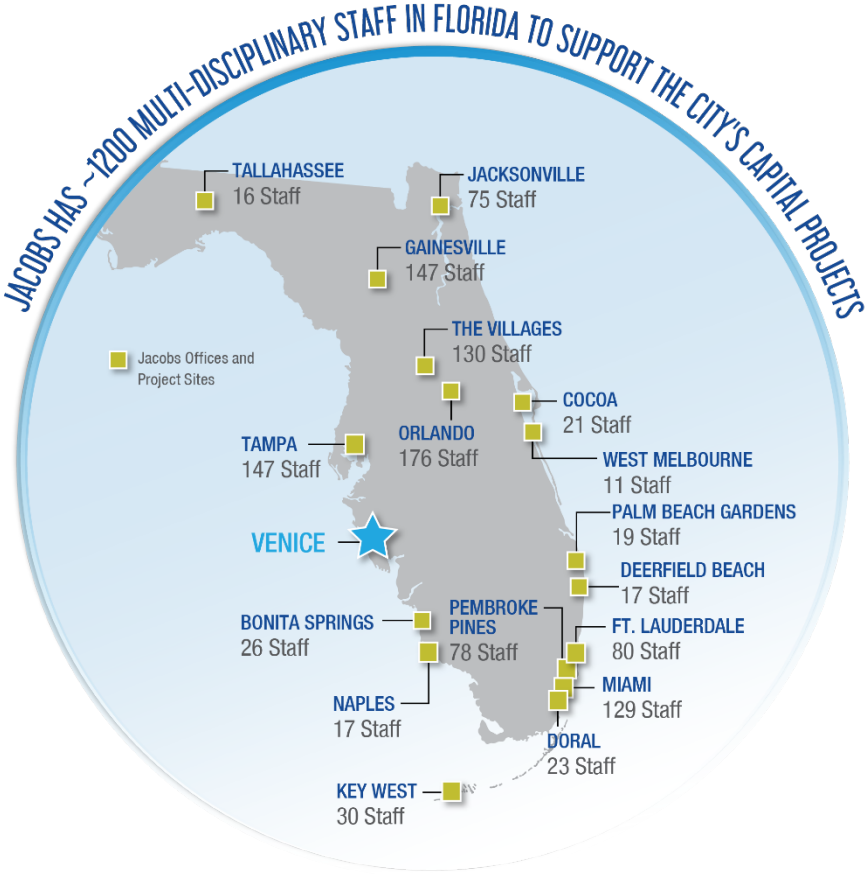
4. Ability to Perform Services Expeditiously at the City's Request + Team Location and Availability

Full-Service, Global Resources Applied Locally

Jacobs leads the global professional services sector delivering solutions for a more connected, sustainable world. Founded in 1947 by Dr. Joseph J. Jacobs, the company has continued to expand its service base and presence, most recently with the merger in December 2017 of CH2M HILL. With $15 billion in fiscal 2017 revenue (when combined with full-year CH2M revenues) and a talent force more than 77,000-strong,



Critically, Jacobs provides a full spectrum of architectural and engineering services to government clients throughout Florida. Our full-service capabilities provide the City with sole source accountability and the capabilities of in-house multidisciplinary staff with expertise in all areas of services required to deliver well projects in connection with the City's capital improvement projects.

Depth and Breadth of Florida Resources Ensures Immediate Access to Highly Qualified Local Staff Matched to Project Requirements

Our local team is available to meet all immediate needs and expectations stated by the City of Venice in the RFQ. Our proposed project team members have worked closely together in successfully delivering multiple projects with similar scopes of services. This not only provides the technical expertise and coordination to complete project goals on time and within budget, but also provides the City assurance in knowing that the Jacobs team has an advanced level of familiarity with delivering the required services using the most innovative technology and resources available.

Jacobs' capacity, diversity in skills, and technical expertise allow us to draw upon staff with expertise that aligns with requests from our clients—ensuring the right people at the right time for a specific task request.

Jacobs (through the CH2M legacy) has been serving Florida clients since 1953. We currently have 3,659 staff members throughout the state, with 1,239 dedicated to infrastructure work. Our Tampa office (4350 W Cypress Street, Suite 600, Tampa, FL 33607) will manage all aspects of your project. To bring to the City appropriately skilled, available team members, we will draw upon the specialized expertise of our experienced production and ASR well staff, as needed, from other Florida offices.

While Jacobs has the capacity and capability to manage all aspects of engineering projects in-house through our local and global resources, our experience has shown that there are certain tasks which are best handled by local subconsultant team members with relevant experience in the unique conditions of individual project sites and client-specific requirements. For this reason, we have chosen to partner with **Hyatt Survey Services, Inc. (Hyatt)** and **Sharek Solutions, Inc.** (Sharek).

Hyatt is a certified WBE/MBE with the State of Florida Office of Supplier Diversity and a DBE with the Florida Department of Transportation. Located in Bradenton in Manatee County, Hyatt is a full-service firm providing boundary, topographic, hydrographic, construction, and GPS surveying services throughout the state of Florida for over 15 years, including several projects for the City. Hyatt has a professional staff of 25 employees with over 80 years of experience in the surveying and mapping field. The firm has worked on numerous projects in the City in recent years, including Venice Municipal Airport Drainage Improvements (2018), Venice East Gate Terrace. Ph. 1 (2017), City of Venice Ph. 4 Watermain Replacement (2017), and City of Venice Ph. 3 Watermain Replacement (2014).

Sharek Solutions was founded 2011 and provides utility engineering and design, utility operation, maintenance and compliance, project and program management, peer review and value engineering, and electric vehicle and charging equipment expertise. The firm offers licensed professional engineers and certified project managers who serve clients that include regional water supply authorities, municipal and county utilities, community development districts, water management districts, and private developers. Sharek provided services on the Phase 2C Pipeline Evaluation Study for the Peace River / Manasota Regional Water Supply Authority in the City of Venice. Prior to founding Sharek Solutions, Chris Sharek worked at the same engineering firm with our Project Manager, Tom Farkas. Together they developed a successful working relationship providing engineering and hydrogeological services to numerous clients, such as City of Sarasota, Sarasota County, and City of Palmetto, for a variety of UIC well and RO supply well projects. Sharek's local office in Sarasota enables our team to be present at a moment's notice for any critical planning and construction need.

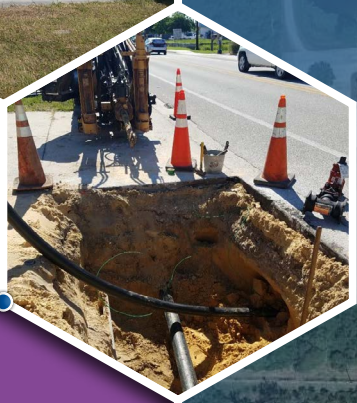
Team Location and Availability Provides a Direct Point of Contact and a Collaborative Partnership with the City through All Project Phases

The City of Venice's success is our team's highest priority. To that end, we pledge our corporate and management support to the City and our proposed delivery team. We will manage this contract from our Tampa office under the leadership of Project Manager Tom Farkas. As shown in Section 2, most of our key staff are located in Tampa and work closely with one another on a diverse spectrum of projects. These working relationships and collaboration deliver a proven track record of successful projects that we will apply for the City's benefit.

Our Florida-based team is readily available to meet any project request. We selected our team based on their qualifications and ability to fully commit to the City for the duration of this contract. Whatever project needs or challenges arise, our local team will devote the time, creativity, enthusiasm, and expertise needed to deliver project success.

Tom is fully available to oversee any task executed under this contract, and pledges to deliver services to your complete satisfaction. We have also ensured that each of our task leads' workloads are such that they can provide any level of support required to deliver cost-effective, high-quality services.

5. Additional Considerations



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5. Additional Considerations

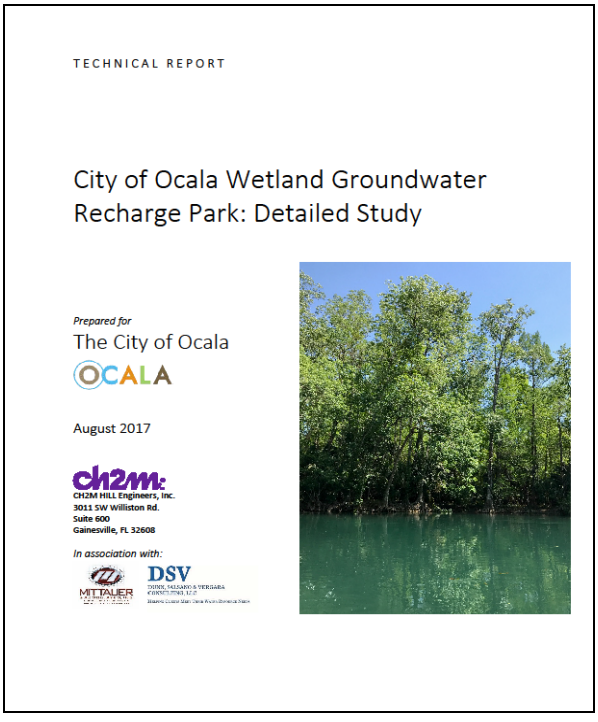
Preliminary Approach to Class V ASR Well and RO Well Projects

Our proposed Project Approach is based on successful project approaches implemented by our team on several similar RWASR well and RO production well projects in Florida. Our project approach is broken into the following major tasks to manage the successful outcome of the project.

ASR Feasibility and Preliminary Design Report

We will perform an RWASR feasibility study to evaluate if an RWASR system is feasible based on site hydrogeology, WWTP effluent water quality and availability, permitting and site constraints, RW demands, and estimated capital and O&M costs. It is important that all of these factors be considered along with any mitigation needs, if required, before proceeding with design and construction of an RWASR system.

An important hydrogeology design criterion that will be included in the RWASR feasibility study relates to the native groundwater quality of the storage zone. A storage zone containing less than 1,000 mg/L TDS requires membrane treatment to meet storage regulations. This is cost-prohibitive in most cases, and likely so at these facilities. The ideal RWASR storage zone ambient water quality typically falls in the range of 2,000 to 4,000 mg/L TDS, which requires meeting primary and secondary drinking water standards, but should not require extensive process changes from the existing wastewater treatment. Typically the WWTP location is the preferred location for an ASR well, due to security and operational considerations. **Our review of the Venice WWTP indicates there is ample space available to construct and test an ASR well.**


TECHNICAL REPORT

City of Ocala Wetland Groundwater Recharge Park: Detailed Study

Prepared for
The City of Ocala
OCALA

August 2017

ch2m:
CH2M HILL Engineers, Inc.
3011 SW Williston Rd.
Suite 600
Gainesville, FL 32608

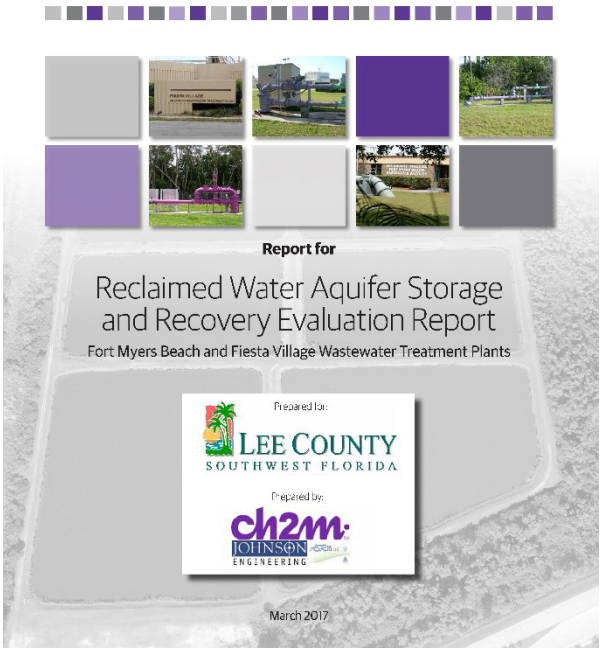
In association with:
MITTAUER
DSV

Jacobs (as CH2M) performed a feasibility study for the City of Ocala Wetland Groundwater Recharge Park.

Well Construction Permitting

The RWASR well and associated monitoring well system can be constructed under two different types of FDEP construction permits. A Class V Exploratory Well is typically used in areas where the geology or ambient water quality is not well defined. However, alternately, a Class V Test/ Injection Well permit can be issued by FDEP if the storage zone and associated geology are better understood in the area, as is the case in the vicinity of the City's WWTP.

The Class V Test/Injection Well permit allows cycle testing authorization within the permit, whereas under the Exploratory Well permit, no operational testing is allowed, essentially making it a "no flow" permit. There are advantages and disadvantages associated with each type of permit. Our project team is prepared to discuss these with the City to make sure that the appropriate permit is issued that provides the most flexibility during well construction and testing to ensure that the optimum storage zone is utilized. We have considerable experience with each type of permit for RWASR projects. This permitting task is expected to take approximately 9 months to complete, due largely to the two separate public notice requirements needed to complete this phase of the permitting.



Jacobs evaluated the Fort Myers Beach and Fiesta Village WWTPs and developed a Class V permitting approach based on actual water quality data. UFA was the best option for managing excess reclaimed water.

FDEP recently back-tracked from issuing a Zone of Discharge and also a Rules Variance from 62-610 related to several select water quality parameters, such as total trihalomethanes, total coliforms, and nitrates, in reclaimed water from exceeding primary drinking water standards at either the point of injection or at the project site property boundary. These regulatory relief mechanisms would appear to be no longer available for an RWASR well project to achieve regulatory water quality compliance. Therefore, any reclaimed water from the City's WWTP would have to meet all primary drinking water standards in order for FDEP to issue a Class V Test Well permit. Jacob's comprehensive experience with designing WWTP treatment systems will allow us to provide the City with recommendations for any treatment system modifications needed to achieve RW quality requirements. Our evaluation of the City's WWTP data from 2017 suggests that total trihalomethanes will need to be evaluated during the feasibility stage of the project.

Our evaluation of the City's WWTP data from 2017 suggests that total trihalomethanes will need to be evaluated during the feasibility stage of the project.

With regard to RO Well 8E, also referenced as SWFWMD ID 79, this well is already included in the City's Water Use Permit (WUP). The only permit needed for this well will be an SWFWMD well construction permit, which will be issued to the licensed Well Drilling Contractor selected by the City to construct the well.

Other Permitting Activities

WWTP Substantial Modification

The FDEP Domestic Wastewater permit must be modified to accept the recovered ASR water back into the reuse system. As one of the top-ranked wastewater firms in the country, Jacobs has performed this task for the Englewood Water District, City of St. Petersburg, and Hillsborough County, as these were three of the first RWASR wells to come online. Our team has worked extensively with other domestic wastewater facilities in South Florida and will work with the City and FDEP to modify the permit to allow the most flexibility with reintroducing the recovered water back into the City's reuse system.

SWFWMD WUP and Environmental Resource Permit (ERP)

After the RWASR well has completed all cycle testing and an FDEP operations permit has been issued, the RWASR well also requires to be added to the City's WUP. The RWASR well is included in the WUP with an annual average and peak month groundwater withdrawal of 1 gallon per day. Jacobs assisted the City of Palmetto in including an RWASR well into its WUP. SWFWMD included the following permit language:

Including the RWASR well into a WUP enables regulatory oversight of any potential operational well impacts on other existing legal users and surrounding environmental features.

> "This is a modification of an existing wholesale water use permit for public supply use. The modification adds an operational Aquifer Storage & Recovery (ASR) system consisting of a single well completed in the upper Floridan aquifer (DID No. 12) and three monitor wells. The primary purpose of the ASR system is to reduce or eliminate surface water discharge of excess reclaimed water flows to Terra Ceia Bay. The ASR also provides a small amount of additional storage for a large, existing reclaimed water system which delivered approximately 357 million gallons to reuse customers from June 2016 through May 2017. There are no other authorized withdrawals associated with this wholesale permit. This permit is located within the Most Impacted Area of the Southern Water Use Caution Area (SWUCA-MIA) and relies in part on an Alternative Water Supply (AWS) to meet demand.
>
> Special conditions include those that require the Permittee to maintain a water-conserving rate structure, submit an annual water use report, maintain a compliance per capita rate of 150 gpcd or less, report potable deliveries through the interconnects on a monthly basis, ensure that ASR recovery volumes do not exceed recharge volumes, report ASR volumes, groundwater levels, and water quality data monthly, provide an ASR annual report by April 1 each year, and comply with the SWUCA recovery goals."

Inclusion of the RWASR well into a WUP is done to allow for regulatory oversight for any potential operational impacts of the RWASR well on other existing legal users and surrounding environmental features.

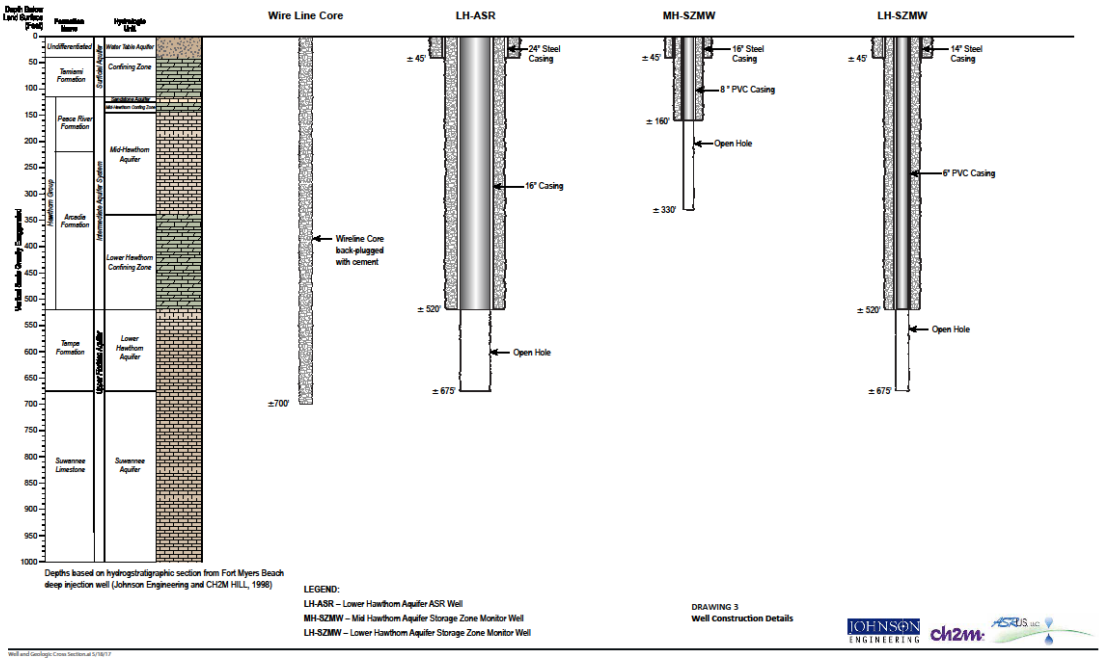
It is not known if an ERP will be required from the SWFWMD at this time and will be better defined at the project feasibility stage. Factors affecting the requirement of an ERP include adding impervious area created by well pads, access roads, and associated structures at the WWTP site.

Well Design

Design of the RWASR well and associated monitoring well network is paramount to successful operation of the ASR system. It begins with a drilling and testing program designed to adequately test and evaluate the various hydrogeologic intervals. At this site, we believe the Suwannee Limestone unit of the UFA has the potential for storing high-quality reclaimed water. Our proposed drilling and testing program outlined in the ASR Feasibility Evaluation and Preliminary Design Report will allow the City to select the ideal zone for storing the reclaimed water while minimizing any additional process changes needed to permit storage.

Materials of construction are also an important aspect of the well design. Many of our RWASR systems have utilized 0.5-inch-thick carbon steel final casing in the ASR well. Unlike potable water wells, where very low turbidity must be achieved in the recovered water, RWASR systems need only meet 5 mg/L TSS in the recovered water. Our experience has shown that these standards are easily achievable with carbon steel casing completion, providing a durable and easily constructable well for a number of drilling contractors. However, the recent turmoil in the steel industry, with tariffs and other federal imposed duties, has caused steel prices to skyrocket and made it difficult to obtain certain casing sizes in a timely manner. As part of the feasibility study, we will evaluate other casing materials, such as PVC and FRP pipe. We will apply the same level of diligence to designing and selecting casing for RO Well 8E.

The recent turmoil in the steel industry, with tariffs and other federal imposed duties, has caused steel prices to skyrocket and made it difficult to obtain certain casing sizes in a timely manner.



Jacobs' experience with local hydrogeology led to the design of Lee County's RWASR Well System.

Surface Facilities Design

Our team has considerable experience with the design of Class V ASR/Recharge well surface facilities. RWASR applications are unique in that multiple points of discharge are often designed to accommodate varying water quality recovered from the ASR well. For example, during the early phases of recovery, elevated turbidity may be experienced, requiring the recovered water to either undergo re-treatment prior to delivery to the reuse system or to be discharged entirely to waste at the reject pond. Once turbidity is reduced, which typically takes a few hours, the water can be recovered directly into the reuse system to be blended with other public-access reuse quality water produced at the treatment facility. While no additional treatment is required from a regulatory standpoint, we will work with the City to identify the

Inline UV System and Sodium Bisulfite Feed.

best point of entry into the reuse system. We have designed the recovered water to be delivered directly in reuse storage tanks, into a clearwell downstream of the chlorine contact chamber, upstream of the filters to undergo HLD, or various combinations. Recently, at Polk County, we designed ASR recovery to allow the County to recover at any of three points in the treatment process based on the quality of water recovered from the ASR well.

One common process change that our team has helped implement at multiple RWASR facilities is control of DBPs in the reclaimed water stored. Total trihalomethanes and haloacetic acids are often above the drinking water standards of 80 ppb and 60 ppb, respectively. We have assisted with conversion of free-chlorine disinfection facilities to the use of chloramine disinfection by adding a minor amount of ammonia back into the reclaimed water. This is not necessary for facilities that pass ammonia in the reclaimed water, but for facilities with little to no ammonia available, chloramine disinfection is a cost-effective method to control DBPs. Tom Farkas, our Project Manager, also helped implement the concept of using a sodium bisulfite chemical feed to the RW prior to injection to suppress the generation of arsenic at the City of Palmetto's RWASR well. This was the first fully operational RWASR well to implement such a treatment alternative, and arsenic levels in the aquifer have remained below the regulatory requirements at the property boundary, which is less than 250 feet from the RWASR well. We will evaluate, during the feasibility study, whether a sodium bisulfite treatment application is needed for the City's project.

Tom Farkas, our Project Manager, helped implement the concept of using a sodium bisulfite chemical feed to the RW prior to injection to suppress the generation of arsenic at the City of Palmetto's RWASR well.

Our team's design of RO well infrastructure for multiple wells, including wellheads, pumps, valves, piping, electrical, and instrumentation/controls, such as for Bonita Springs Utilities and Jacksonville Electric Authority, highlights our ability to deliver RO wells with the latest technology at the most affordable pricing.

Well Construction Bidding Services

From the Fort Myers Beach and Fiesta Village RW ASR Well project to Manatee County's Class V Recharge Wells, our team has proven experience in bidding UIC permitted wells within west-central Florida. Regardless of function, municipal wells require experienced well drillers to compete for these projects, and we typically recommend a two-step process that involves prequalification followed by hard bidding by the prequalified firms. It is also important for the prospective bidders to be made aware of the project well in advance of the bid dates.

Some consulting firms are noted for driving up prices based on how they interact with well contractors. Our seasoned engineers and hydrogeologists are well known by all statewide drilling contractors as being fair and professional while maintaining the Owners' interests.

Often, particularly when well drilling firms are busy, bid prices may be affected by which engineer or hydrogeologist is overseeing the project. Some consulting firms are noted for driving up prices based on how they interact with well contractors. Our team comprises seasoned engineers and hydrogeologists who are well known by all statewide drilling contractors as being fair and professional while maintaining the Owners' interests.

Services During Construction

Our proposed approach during ASR well construction is to provide the full range of services as requested in the City's RFQ. The FDEP permit typically requires that all hydrogeologic testing be performed under the direction of a Professional Engineer or Professional Geologist. Our proposed Project Manager, Tom Farkas, PG, will be overseeing these services as the responsible professional. Tom has considerable experience overseeing UIC well construction and testing activities. We also have regular onsite resident observation services performed by a staff of experienced geologists to provide accurate and thorough lithologic descriptions during drilling and to properly analyze testing activities, such as geophysical logging and packer testing. We are also conscious of the City's budget for field services and will align our services to cover activities that provide real value, and with less emphasis on pilot hole reaming, rig maintenance, and other activities that do not require continuous oversight by the professionals.

Completed RO production well facilities for Bonita Springs Utilities.

We are conscious of the City's budget for field services and will align our services to cover activities that provide real value, with less emphasis on pilot hole reaming, rig maintenance, and other activities that do not require continuous professional oversight.

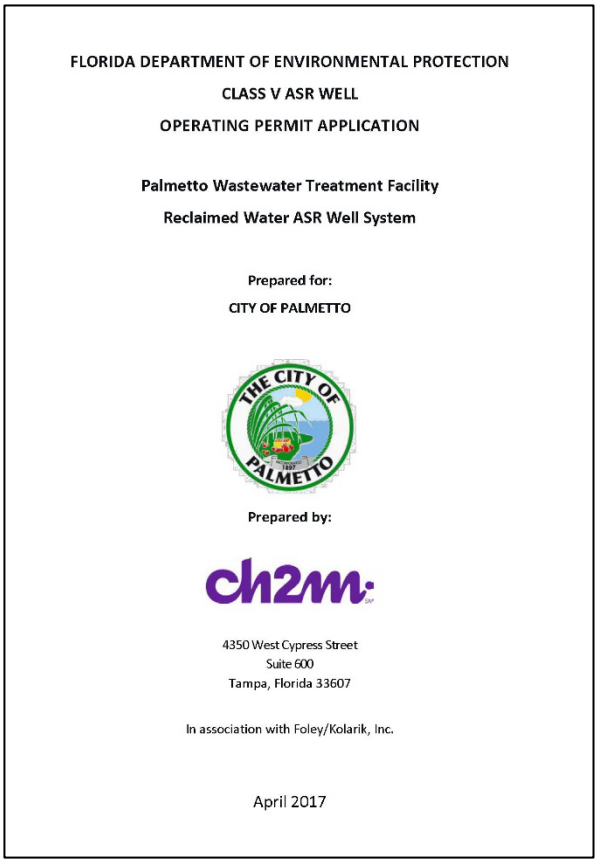
Cycle Testing

Cycle testing is key to the successful implementation of any ASR program. In our experience, we have seen numerous examples of cycle tests that were not designed to properly test the recovered water quality from the ASR well. It is important to be patient during this period and not attempt to draw too many conclusions on an incomplete data set. It is also important to have regular communication with FDEP Tallahassee staff to make sure that the data collected will

ultimately support issuance of an Operation Permit for the facility. Our team has a proven track record with cycle testing programs that result in Class V Operation Permits. We believe it is important early in the cycle testing process to recover water for beneficial use, if possible, rather than recovering to waste. This allows all interested parties to begin to see the vision of how the ASR well will be used to provide not only a robust wet weather storage option but also a supplemental supply to the reuse system during extended dry weather periods.

Operational Permitting

One of our primary project goals is to get the RWASR well fully permitted at the first opportunity possible. Our team was responsible for obtaining some of the first Class V Operation permits issued by FDEP for RWASR wells, including the Englewood Water District, the City of St. Petersburg, Sarasota County, and City of Palmetto. Two of the key advantages to progress the site to Operation Permit status is that this usually: 1) corresponds to a considerable reduction in analytical testing, and 2) results in the future well use on an as-needed basis rather than a rigid cycle testing program. **As a result of our active, open dialog with FDEP Tallahassee UIC staff during the cycle testing period, our ASR clients benefit by moving into a fully permitted ASR well at the earliest time possible**. Potential hurdles to delay an Operation Permit are identified early in the cycle testing process to allow collection of sufficient data to support the permit along with any variances that may be needed to allow issuance of the permit.



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

CLASS V ASR WELL

OPERATING PERMIT APPLICATION

Palmetto Wastewater Treatment Facility

Reclaimed Water ASR Well System

Prepared for:

CITY OF PALMETTO

Prepared by:

ch2m:

4350 West Cypress Street
Suite 600
Tampa, Florida 33607

In association with Foley/Kolarik, Inc.

April 2017

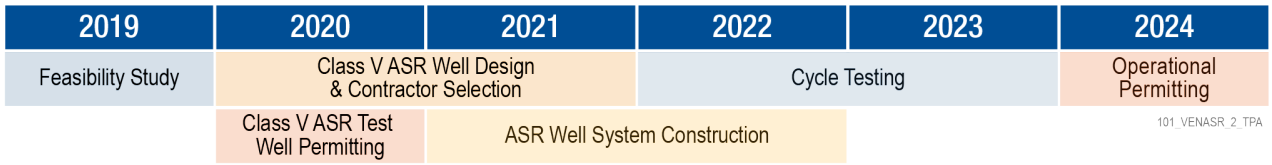
For the City of Palmetto, our FDEP Class V ASR Well Operating Permit application and SWFWMD WUP modification were issued in only 7 months.

Project Delivery Schedule

Exhibit 5-1 provides an abbreviated schedule based on the scope of work provided in the RFQ. We would welcome discussing the City's needs and working together to develop a schedule that best meets the overall project objectives. We have found that many of these activities can be performed more concurrently than shown while still maintaining conservative practices. In a recent project, we worked with FDEP to allow cycle testing injection before all surface facilities were complete. This facilitated water storage during the rainy season, a period when water would otherwise be lost.

The schedule for an RO well construction is much less time consuming without the need for feasibility study, permitting, and long-term cycle testing. Typically, an RO well project can be designed, bid, and constructed in under 2 years, depending upon the City's need to accelerate the project schedule.

Exhibit 5-1. Abbreviated Project Schedule



Project Management

We are fully aware of the City's responsibility to taxpayers and stakeholders. There is a strong focus for meeting schedules and budgets for both local cooperators and consultants; Jacobs is fully committed to meeting these requirements. Our tools and process allow us to fulfill this commitment and provide the City the assurance that all budgets and schedules will be met. Our tools and process are discussed below.

> *"…All of these factors have resulted in one of the most successful capital improvement programs for the City of Tampa. I extend my sincere appreciation to you and the entire team for their dedication, performance and commitment to the City of Tampa. Thank you!…"*
>
> S.W. Daignault, P.E., Administrator

Method for Providing Consulting Services

Our method of providing consulting services for the City is based on an understanding of the City's organization and methods of doing business, along with more than 70 years of Jacobs' experience in performing successfully on similar contracts. The following elements are key to our method for delivering professional services to the City.

- Identification and chartering of team
- Ability to work effectively with our subconsultants
- Integration of City and team staff
- Incorporation of City input
- Prepare meeting highlights

Ability to Complete Projects on Time and Budget

We will implement the following approach to ensure budget, schedule, and quality goals are met: A Project Delivery System (PDS) that provides a structure for successful project delivery, supported by project controls that integrate scope, schedule, and financial data into one database, ensuring budget and schedule are met.

Project Delivery System

Our formal PDS was developed from the review of more than 3,000 projects to identify the characteristics of successful projects and the most frequent and costly contributors to negative performance. This review concluded that successful projects are executed as a system, not as a series of tasks. The key elements of our PDS are people, structure, process, and tools, and are briefly discussed in the following paragraphs.

Step 1. Charter the Team

A successful project is collaboration between Jacobs and the City, undertaken by the team acting as an extension of your staff, galvanized under a common vision. Project chartering expedites the development of a cohesive team as it works together to define a common purpose, roles, operating guidelines, and expectations.

Step 2. Plan the Work

Tom Farkas and the respective discipline leads will develop a clear, focused plan for each Project Task Assignment, emphasizing project definition and application of the skills, technologies, processes, and procedures to use in delivering the project. An essential part of the planning process will involve working with the City and stakeholders to identify the project parameters so that economic efficiencies can be achieved.

Step 3. Gain Endorsement of the Plan

During Step 3, full endorsement of the project plan by the City and project team is achieved. This task involves a higher level of commitment and validation than the traditional passive acceptance of others' ideas. The endorsement process will be conducted in a manner that builds advocacy for jointly crafted solutions, promoting consensus and project understanding, as well as the path forward.

Step 4. Do the Work and Manage Change

For a project management team to provide effective oversight during the project delivery process, it must have a detailed understanding of the activities involved in the project. Our approach for delivery consists of a well-planned sequence of tasks, and regular meetings that involve the City and other project stakeholders throughout the process. We will review deliverables by our subconsultants (i.e., conducting field walk-throughs on surveys) and request that any changes or edits be made if data or information are missing.

Our PDS promotes development of a project approach that meets City cost and schedule delivery requirements.

Step 5. Close and Learn

During project closeout, the project team is demobilized and project documents, such as as-builts, budgetary information, and a final report are finalized. Project files will be provided to the City at the end of each project in hard copy or electronic format. “Lessons learned” will be documented in the form of a post-mortem that is distributed so that future City projects benefit from the experience.

Project Controls that Ensure Budget and Schedule Are Met

Our firm’s project controls practice is committed to implementing processes and procedures that successfully drive project-critical activities to completion. We have a robust project controls system that combines scope, schedule, budget, actual, and forecast data into one database. This real-time reporting project control system assists project teams in the day-to-day management of their projects. State-of-the-art technology enables us to host these tools on the Internet, streamlining access to all team members.

Planning

Proper planning forms the foundation for all successful programs. Jacobs uses the Work Breakdown Structure (WBS) process, a planning tool that provides a formal structure to identify all work products and relate all work efforts. The appropriate level of detail for the WBS depends on size, complexity, risk, and schedule constraints. All elements of scope must correlate to a WBS element, preventing any scope from being omitted in the planning process.

Scheduling

The keys to an intelligent schedule include direct integration with the WBS, resource-loading to assist with funding needs and budget “what-if” exercises, identification of milestones or deliverables, logical depiction of work processes, and regular updates to assess project performance.

Cost Estimating

Cost estimates are developed at a predetermined level of the WBS. Elements of cost to be estimated include, but are not limited to: labor, materials, and equipment; expenses; and coordinating with our subconsultant partners at the earliest stages for inputs. Cost estimates are loaded into the schedule to fully integrate scope, schedule, and budget by WBS element. This framework supports earned value reporting. By integrating these elements, the schedule database includes the Statement of Work, period of performance to accomplish that scope, and estimate to accomplish that scope.

Change Control

The ability to control change is based on timely issue identification and the quality of the corrective management actions taken. Jacobs’ project control tools provide a foundation of real-time cost and schedule information from which experienced project managers can forecast future results by applying various management action scenarios. Assignments for WBS responsibility are issued to the project manager, who is held accountable for the scope, schedule, and budget for his or her assigned projects.

Jacobs maintains change control by using a time-tested process that combines the following critical elements: scoping, planning, scheduling, estimating, cost capture, accurate cost and performance reporting, cost and performance projections, and proactive task and project management.

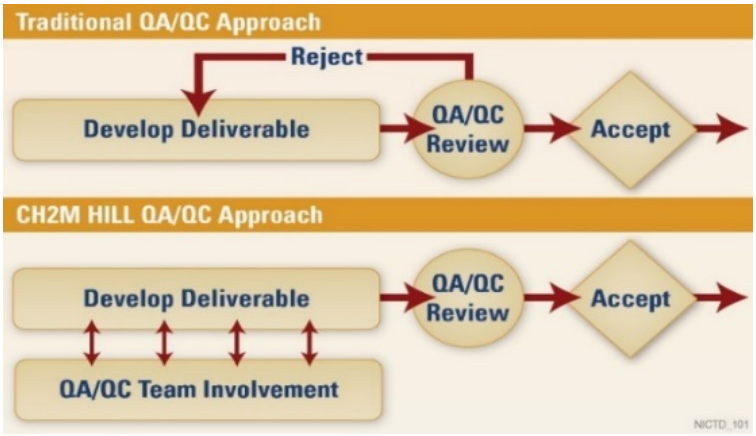
Reporting

Jacobs' financial management tools are based on an Oracle system and are available via the firm's intranet 24/7 for immediate review and use.

Quality Assurance/Quality Control Procedures

Delivering superior quality service is our key marketplace strategy and is reinforced in every aspect of our business. Our QA/QC approach contains four layers of review:

- **Self-check by team-member** originating the work under a task.
- **"Sanity check" and second-tier review** by a dedicated internal team member for data anomalies and consistency. Specific QA/QC reviewers will be assigned to review the work.
- **Approval of sub-tasks** by an identified manager – typically the Task Leader.
- Responsibility for **"Final Approval" of deliverables** resides with the Project Manager.



Jacob's quality management process is implemented throughout the project life cycle to identify project issues before they become costly mistakes.

Our QC procedures are perhaps the most fundamental to our Quality Plan. We will provide a project-specific QA/QC Plan to the City upon project assignment. Quality reviews will be planned and organized in advance for specific deliverables. We will ensure that appropriate reviewers are assigned and will audit each project to verify that reviews have been completed according to plan.

Formal QC reviews will be performed at the key stages of each project, such as draft project instructions, draft project deliverables, and final deliverables. Reviewers are directed to not only assure that the reviewed work conforms to the project requirements, but also to recommend alternative solutions meriting further evaluation by the originating project team, emphasizing challenge for benefit.

Communications

The success of any project is proportional to the level of communication and the consistency of how it is maintained. Our communication philosophy is based on the following ***"Never send an email when you can call, never call when you can meet in person.***" Applying this philosophy, Tom and his task leads will formally meet with our team on a regular basis to ensure that all team members are fully engaged in the technical, administrative, and procedural requirements. To help eliminate misunderstandings and misconceptions, and to maximize efficiency, we will use Web-based meetings, conference calls, and face-to-face meetings. We have successfully applied our communication philosophy on hundreds of successful projects and will continue to do so moving forward.

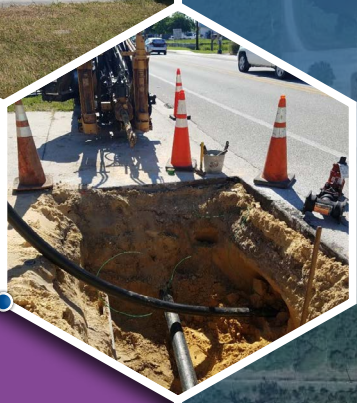
Managing and Ensuring Subconsultant Quality Work

As a subconsultant need arises, Jacobs will engage them early in the process and manage them to deliver a high-quality work product to the City. While managing the subconsultants, we will incorporate the following to ensure timely communication and coordination and maintain quality:

- An ***internal communications plan*** will be developed, understood, and agreed to by all team members at the team chartering session.
- Adherence to our ***safety protocols and requirements*** throughout project execution.
- The Project Manager and qualified QC leads will ***communicate within their areas of expertise***, whether a subconsultant or a Jacobs employee.
- A ***mandatory regularly scheduled telephone conference call or meeting*** for team members will provide timely and consistent team communications.

Each subconsultant will retain primary responsibility for the quality of their work and submit a project-specific QC work plan; however, all subconsultant work will be reviewed against the same quality standards as work completed in-house before any submittal.

6. Required Forms, Certificate of Insurance, Certifications



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JACOBS®

Acknowledgement of Addenda

CITY OF VENICE PROCUREMENT- FINANCE DEPARTMENT
401 W. VENICE AVE. - ROOM # 204
VENICE, FL. 34285
(941) 486-2626
FAX (941) 486-2790

ADDENDUM NO. 1

Date: November 5, 2018

To: All Prospective Proposers

Re: RFQ #3092-18 Professional Engineering Services For Large Utilities Capital Projects

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This addendum sets forth changes and/or information as referenced and is hereby made part of and should be attached to the subject Contract Documents. Receipt of this Addendum shall be acknowledged below and in the submitted proposal. It shall be the responsibility of each proposer, prior to submitting a proposal, to contact the City of Venice- Procurement- Finance Department to determine if addenda were issued and to make such addenda a part of their proposal.

The following questions were received in writing:

Q1: We work with various subconsultants on projects. Do subconsultants need to be stated in the proposal?
If the sub-consultant is going to be performing a significant part of the work please provide their information. You can also provide information on any sub-consultant that you feel would be important for the City to consider in the evaluation of the qualifications.

Q2: Does the city have available asbuilts, record drawings of utilities, preliminary reports, or feasibility studies?
Yes, these will be provided to the selected firms to assist in developing the proposal cost estimate.

Q3: For the Water Main Replacement Phases 7 and 8 project, are we able to receive a copy of the preliminary assessment from Black & Veatch for this proposal?
This report is still in the draft stage. See response to Q2 above.

Q4: Water System Improvements: Phase 1 – Water Booster Station, GST, and Emergency Interconnection; and Phase 2, Second Stage RO System Project – Given that Phase 1 and Phase 2 of the Proposed Water System Improvements are two separate and distinct capital improvements, would the City allow the RFQ response to present these (and be evaluated) as two separate projects?
Yes, the respondent may propose to be evaluated on these two projects separately and, as such, may submit on one or the other if that is the desire. Please be clear in your submittal on what you are proposing.

Q5: If we pursue more than one of the five capital projects, do we provide an organizational chart for each project?
Yes

Q6: Similarly, do we provide a Project Team Form for each project?
Yes

Q7: Please clarify if Phase 2, Second Stage RO System of the Water System Improvements project only includes the preliminary design, including pilot testing. It is unclear if detailed design, permitting and construction administration/inspection services are also part of this phase.
This project will include preliminary design, final pilot testing, final design, permitting, and the construction phase of the project.

Peter A. Boers
Procurement Department

Acknowledgment is requested even if you have elected not to respond to this bid. A designated management representative of your firm can sign the receipt for this addendum. Please acknowledge receipt of this addendum immediately by fax to (941) 486- 2790 or mail to the above noted address, if a fax is not possible.

Receipt Acknowledged:

Signature

Jacobs Engineering Group Inc.
Company

November 19, 2018
Date

A copy of this addendum (excluding attachments) is to be included with the proposal response.

CITY OF VENICE PROCUREMENT- FINANCE DEPARTMENT
401 W. VENICE AVE. - ROOM # 204
VENICE, FL. 34285
(941) 486-2626
FAX (941) 486-2790

ADDENDUM NO. 2

Date: November 14, 2018

To: All Prospective Proposers

Re: RFQ #3092-18 Professional Engineering Services For Large Utilities Capital Projects

---

This addendum sets forth changes and/or information as referenced and is hereby made part of and should be attached to the subject Contract Documents. Receipt of this Addendum shall be acknowledged below and in the submitted proposal. It shall be the responsibility of each proposer, prior to submitting a proposal, to contact the City of Venice- Procurement- Finance Department to determine if addenda were issued and to make such addenda a part of their proposal.

The following questions were received in writing:

Question: The written description in Section 2 (Scope of Services) of the boundary of Project 4, Phase Two with the easterly boundary of Peach Street, as well as some of the verbiage of the Phase 3 description, is somewhat confusing. Can a graphic of the boundaries of Project 4 be provided for clarification?
Response: The Phase 2 area of Project 4 should have said, "...bounded on the west by US 41 and on the east by *Hatchett Creek...*" not on the east by Peach St. The rest of the description should remain the same.

Question: Pursuant to the responses for Q5 and Q6 from Addendum 1 , if the exact same Organizational Chart and the same Personnel are proposed for multiple projects, can just one Organizational Chart and one Project Team/Resumes be included, provided it is made very clear that the same team/org chart is being proposed for the multiple listed projects?
Response: Yes, provided it is made very clear that the same team/org chart is being proposed for the multiple listed projects.

Question: Or, should the org chart, project team and resumes be included multiple times?
Response: No. that is not necessary.

Peter A. Boers
Procurement Department

Acknowledgment is requested even if you have elected not to respond to this bid. A designated management representative of your firm can sign the receipt for this addendum. Please acknowledge receipt of this addendum immediately by fax to (941) 486- 2790 or mail to the above noted address, if a fax is not possible.

Receipt Acknowledged:

Signature

Jacobs Engineering Group Inc.

Company

November 19, 2018

Date

A copy of this addendum (excluding attachments) is to be included with the proposal response.

Qualifications Statement

SEALED REQUEST FOR QUALIFICATIONS
CITY OF VENICE, FLORIDA

QUALIFICATIONS STATEMENT

The undersigned certifies under oath the truth and correctness of all statements and all answers to questions made hereinafter:

SUBMITTED TO: CITY OF VENICE
Procurement- Finance Department
401 W. Venice Avenue Room # 204
Venice, Florida 34285

CHECK ONE:
- [x] Corporation
- [ ] Partnership
- [ ] Individual
- [ ] Joint Venture
- [ ] Other

SUBMITTED BY:

NAME: Jacobs Engineering Group Inc.
ADDRESS: 201 North Franklin Street, Suite 1400, Tampa, FL 33602
PRINCIPLE OFFICE: 1999 Bryan Street, Suite 1200, Dallas, TX 75201

1. State the true, exact, correct and complete legal name of the partnership, corporation, trade or fictitious name under which you do business and the address of the place of business.

   The correct name of the Proposer is: Jacobs Engineering Group Inc.

   The address of the principal place of business is: 1999 Bryan Street, Suite 1200, Dallas, TX 75201

2. If the Proposer is a corporation, answer the following:

   a. Date of Incorporation: 2/12/1987

   b. State of Incorporation: Delaware

   c. President's Name: Steven J. Demetriou

   d. Vice President's Name: Kevin C. Berryman; Joseph G. Mandel

   e. Secretary's Name: Michael R. Tyler

   f. Treasurer's Name: Michael Carlin

   g. Name and address of Resident Agent: CT Corporation System, 1200 S. Pine Island Road, Plantation, FL 33324

3. If Proposer is an individual or partnership, answer the following: N/A

   a. Date of Organization: _____

   b. Name, address and ownership units of all partners:

   _____

   _____

   _____

   c. State whether general or limited partnership: _____

4. If Proposer is other than an individual, corporation, partnership, describe the organization and give the name and address of principals: N/A

5. If Proposer is operating under fictitious name, submit evidence of compliance with the Florida Fictitious Name Statute. **N/A**

6. How many years has your organization been in business under its present business name?
   71 years

   a. Under what other former names has your organization operated?
      N/A

Thomas J. Meinhart, Vice President — 11/19/18 Date

ACKNOWLEDGEMENT

State of Georgia }
County of Fulton } SS.

On this the 19th day of November, 2018, before me, the undersigned Notary Public of the State of Georgia, personally appeared Thomas J. Meinhart and (Names of individual(s) who appeared before Notary) whose name(s) in/are Subscribed to within instrument, and he/she/they acknowledge that he/she/they executed it.

JANET H WOMACK NOTARY PUBLIC GWINNETT COUNTY, GEORGIA MY COMMISSION EXPIRES MARCH 11, 2019

NOTARY PUBLIC
SEAL OF OFFICE

NOTARY PUBLIC, STATE OF FLORIDA Georgia
Janet H. Womack
(Name of Notary Public: Print, stamp, or type as commissioned)

☑ Personally known to me ☐ Produced Identification: _____ ☑ **DID** take an oath, or ☐ **DID NOT** take an oath

Project Team

PROJECT TEAM

TEAM NAME: Jacobs Engineering Group Inc.

FEDERAL ID No.: 95-4081636

Prime Role	Name & City of Residence of Individual Assigned to the Project	No. of Years Experience	Education, Degree(s)	Florida Active Registration Nos.
Client Manager	Thomas Farkas, PG / Tampa, FL	28	MS; BA	PG: #2074
Project Manager	Thomas Farkas, PG / Tampa, FL	28	MS; BA	PG: #2074
Quality Control	Bill Beddow, PE / Naples, FL	25	ME; BS	PE: #52581
Feasibility Studies	Rafael Vazquez-Burney, PE / Tampa, FL	12	MCE; BS	PE: #70768
Other Key Member Principal in Charge	Niel Postlethwait, PE / Tampa, FL	16	MS; BS	PE: #64034
Other Key Member FDEP WWTP Permits	Ryan Messer, PE / St. Petersburg, FL	8	ME; BS	PE: #79332
Other Key Member Process/Mechanical	Matt Tennant, PhD, PE / Gainesville, FL	16	PhD; BS	PE: #68302
Sub-consultant Role	**Company Name and Address of Office Handling this Project**		**Projected % of Overall Work on the Entire Project**	**Name of Individual Assigned to Project**
Permits; Sustainability; Construction	Sharek Solutions, Inc. 4080 Middlesex Place Sarasota, FL 34241		5%	Chris Sharek, PE, BCEE, PMP, ENV SP
Survey	Hyatt Survey Services, Inc. 2012 Lena Rd, Bradenton, FL 34211		5%	Pamela A. Hyatt
Electrical Engineering	N/A			
Structural Engineering	N/A			
Landscape Architecture	N/A			
Civil Engineering	N/A			
Geotechnical Engineer	N/A			
Other Key Member	N/A			
Other Key Member	N/A			

PROJECT TEAM (CONTINUED)

TEAM NAME: Jacobs Engineering Group Inc.

FEDERAL ID No.: 95-4081636

Prime Role	Name & City of Residence of Individual Assigned to the Project	No. of Years Experience	Education, Degree(s)	Florida Active Registration Nos.
Client Manager				
Project Manager				
Quality Control				
Feasibility Studies				
Other Key Member Feasibility Study, Env/Ecology Permits, Facilities Const	Allison Lewis PE / Tampa, FL	7	ME; BS	PE: #85332
Other Key Member Facilities Construction	David Ashman / Tampa, FL	25	BS	N/A
Other Key Member				
Sub-consultant Role	**Company Name and Address of Office Handling this Project**		**Projected % of Overall Work on the Entire Project**	**Name of Individual Assigned to Project**
Permits; Sustainability; Construction				
Survey				
Electrical Engineering				
Structural Engineering				
Landscape Architecture				
Civil Engineering				
Geotechnical Engineer				
Other Key Member				
Other Key Member				

Public Entity Crimes Form

PUBLIC ENTITY CRIME INFORMATION

A person or affiliate who has been placed on the State of Florida's convicted vendor list following a conviction for a public entity crime may not submit an RFQ proposal on a contract to provide any goods or services to a public entity, may not submit a response on a contract with a public entity for services in the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a Contractor, supplier, Sub-Contractor, or Contractor under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in **Section 2876.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.**

I, Thomas J. Meinhart being an authorized representative of the firm of Jacobs Engineering Group Inc., located at City: Tampa State: Florida Zip: 33602, have read and understand the contents of the Public Entity Crime Information and of this formal RFQ package, hereby submit our proposal accordingly.

Signature: _____ Date: 11/19/18

Phone: 404.751.2135 Fax: N/A

Federal ID#: 95-4081636

Drug Free Workplace Form

DRUG FREE WORKPLACE

Preference shall be given to business with drug-free workplace programs. Whenever two or more RFQs, which are equal with qualifications and service, are received by the City for the procurement of commodities or contractual services, an RFQ received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, your firm shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the action that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under an RFQ, a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that as a condition of working on the commodities or contractual services that are under RFQ, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of the United Sates or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by an employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Concur X Variance _____

11/19/18
Date

Contractor's Signature

Indemnification/Hold Harmless Statement

INDEMNIFICATION/HOLD HARMLESS

The elected firm shall indemnify and hold harmless the City and its officers and employees from liabilities, damages, losses, and costs, including, but not limited to, reasonable attorneys' fees, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the elected firm and other persons employed or utilized by the elected firm in the performance of the contract.

I, Thomas J. Meinhart, being an authorized representative of the firm of Jacobs Engineering Group Inc. located at City Tampa, State Florida, Zip Code 33602 Phone: (404) 751-2135 Fax: N/A

_____. Having read and understood the contents above, hereby submit accordingly as of this Date, 11/19, 2018.

Thomas J. Meinhart
Please Print Name

Signature

This signed document shall remain in effect for a period of one (1) year from the date of signature or for the contract period, whichever is longer.

Certification Regarding Debarments, Suspension, Ineligibility and Voluntary Exclusion

CERTIFICATION REGARDING DEBARMENTS, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION-LOWER TIER FEDERALLY FUNDED TRANSACTIONS STATE OF FLORIDA GRANT ASSISTANCE PURSUANT TO AMERICAN RECOVERY AND REINVESTMENT ACT UNITED STATES DEPARTMENT OF ENERGY AWARDS

1. The undersigned hereby certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. The undersigned also certifies that it and its principals:
    a. Have not within a three-year period preceding this certification been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.
    b. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 2.(a) of this Certification; and (b) Have not within a three-year period preceding this certification had one or more public transactions (Federal, State or Local) terminated for cause or default.
3. Where the undersigned is unable to certify to any of the statements in this certification, an explanation shall be attached to this certification.

Dated this 19th day of November, 2018.

By: _____
Authorized Signature

Vice President
Typed Name of Title

Jacob Engineering Group Inc.
Recipient's Firm Name

201 North Franklin Street, Suite 1400
Street Address

Tampa, FL 33602
City/State/Zip Code

THIS PAGE MUST BE COMPLETED & SUBMITTED WITH OFFER

Conflict of Interest, and Litigation Statement

CONFLICT/NON CONFLICT OF INTEREST AND LITIGATION STATEMENT

CHECK ONE

☒ To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients, contracts, or property interest for this project.

OR

☐ The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients, contracts, or property interest for this project.

LITIGATION STATEMENT

IN FLORIDA ONLY, JUDGMENTS AGAINST THE FIRM, AND SUITS AGAINST CITY OF VENICE. INCLUDE ACTIONS AGAINST THE FIRM BY OR AGAINST ANY LOCAL, STATE, OR FEDERAL REGULATORY AGENCY.

CHECK ONE

☐ The undersigned firm has had no litigation adjudicated against the firm on any projects in the last five (5) years and has filed no litigation against City of Venice in the last five (5) years.

OR

☒ The undersigned firm, BY ATTACHMENT TO THIS FORM, submits a summary and disposition of individual cases of litigation in Florida adjudicated against the firm during the past five (5) years; all legal actions against City of Venice during the past five (5) years; and actions by or against any Federal, State and local agency during the past five (5) years.

Company Name: Jacobs Engineering Group Inc.

Authorized Signature: 

Name (print or type): Thomas J. Meinhart

Title: Vice President

Failure to check the appropriate blocks above may result in disqualification of your proposal. Failure to provide documentation of a possible conflict of interest, or a summary of past litigation, may result in disqualification of your proposal. Should additional information regarding the above items come to the attention of City of Venice after award, the awarded contract shall be subject to immediate termination.

Attachment A

The Submitting Firm, Jacobs Engineering Group Inc., and its subsidiaries form an organization that is comprised of approximately 250 operating companies and affiliates, having a total current employment complement of approximately 74,000 persons and revenues approaching $15 billion. From time to time and in the ordinary course of its business, the Company is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is the Company's practice to vigorously defend itself in such actions, many of which are generally subject to insurance and none of which are expected to have a materially adverse effect on the Company's consolidated financial statements.

The Submitting Firm, Jacobs Engineering Group Inc., has not been sued by or taken legal action against the City of Venice within the last five (5) years.

Non-Collusion Affidavit

NON-COLLUSION AFFIDAVIT

State of Florida }
SS.
County of Hillsborough

Thomas J. Meinhart being first duly sworn, deposes and says that:

1. He/she is the Representative, (Owner, Partner, Officer, Representative or Agent) of Jacobs Engineering Group Inc. the Proposer that has submitted the attached Proposal;

2. He/she is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;

3. Such Proposal is genuine and is not a collusive or sham Proposal;

4. Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or have in any manner, directly or indirectly sought by agreement or collusion, or have in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference with any Proposer, firm, or person to fix the price or prices in the attached Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposal price or the Proposal price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposal Work.

Signed, sealed and delivered
in the presence of:

_____

_____

By: _____

Thomas J. Meinhart
(Printed Name)

Vice President
(Title)

ACKNOWLEDGEMENT

State of Georgia
County of Fulton

On this the 19th day of November, 2018, before me, the undersigned Notary Public of the State of Georgia, personally appeared Thomas J Meinhart and (Names of individual(s) who appeared before Notary) whose name(s) in/are Subscribed to within instrument, and he/she/they acknowledge that he/she/they executed it.

Janet H Womack
NOTARY PUBLIC, STATE OF ~~FLORIDA~~ georgia

Janet H Womack
(Name of Notary Public: Print, stamp, or type as commissioned)

SEAL OF OFFICE:

JANET H WOMACK NOTARY PUBLIC GWINNETT COUNTY, GEORGIA MY COMMISSION EXPIRES MARCH 11, 2022

☑ Personally known to me, or ☐ Produced Identification: _____ ☑ **DID** take an oath, or ☐ **DID NOT** take an oath

THIS PAGE MUST BE COMPLETED & SUBMITTED WITH OFFER

Hyatt Survey Forms

PUBLIC ENTITY CRIME INFORMATION

A person or affiliate who has been placed on the State of Florida's convicted vendor list following a conviction for a public entity crime may not submit an RFQ proposal on a contract to provide any goods or services to a public entity, may not submit a response on a contract with a public entity for services in the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a Contractor, supplier, Sub-Contractor, or Contractor under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in **Section 2876.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.**

I, Pamela A. Hyatt, being an authorized representative of the firm of Hyatt Survey Services, Inc., located at City: Bradenton State: Florida Zip: 34211, have read and understand the contents of the Public Entity Crime Information and of this formal RFQ package, hereby submit our proposal accordingly.

Signature: Pamela A. Hyatt Date: 11/15/2018

Phone: 941-748-4693 Fax: 941-744-1643

Federal ID#: 03-0476653

DRUG FREE WORKPLACE

Preference shall be given to business with drug-free workplace programs. Whenever two or more RFQs, which are equal with qualifications and service, are received by the City for the procurement of commodities or contractual services, an RFQ received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, your firm shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the action that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under an RFQ, a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that as a condition of working on the commodities or contractual services that are under RFQ, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of the United Sates or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by an employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Concur X

11/15/2018
Date

Variance _____

Pamela A. Hyatt
Contractor's Signature
Hyatt Survey Services, Inc.

CERTIFICATION REGARDING DEBARMENTS, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION-LOWER TIER FEDERALLY FUNDED TRANSACTIONS STATE OF FLORIDA GRANT ASSISTANCE PURSUANT TO AMERICAN RECOVERY AND REINVESTMENT ACT UNITED STATES DEPARTMENT OF ENERGY AWARDS

1. The undersigned hereby certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. The undersigned also certifies that it and its principals:
    a. Have not within a three-year period preceding this certification been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.
    b. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 2.(a) of this Certification; and (b) Have not within a three-year period preceding this certification had one or more public transactions (Federal, State or Local) terminated for cause or default.
3. Where the undersigned is unable to certify to any of the statements in this certification, an explanation shall be attached to this certification.

Dated this 15th day of November, 2018.

By: Pamela A. Hyatt
Authorized Signature

Pamela A. Hyatt, PSM, President
Typed Name of Title

Hyatt Survey Services, Inc.
Recipient's Firm Name

2012 Lena Road
Street Address

Bradenton, FL 34211
City/State/Zip Code

CONFLICT/NON CONFLICT OF INTEREST AND LITIGATION STATEMENT

CHECK ONE

☒ To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients, contracts, or property interest for this project.

OR

☐ The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients, contracts, or property interest for this project.

LITIGATION STATEMENT

IN FLORIDA ONLY, JUDGMENTS AGAINST THE FIRM, AND SUITS AGAINST CITY OF VENICE. INCLUDE ACTIONS AGAINST THE FIRM BY OR AGAINST ANY LOCAL, STATE, OR FEDERAL REGULATORY AGENCY.

CHECK ONE

☒ The undersigned firm has had no litigation adjudicated against the firm on any projects in the last five (5) years and has filed no litigation against City of Venice in the last five (5) years.

OR

☐ The undersigned firm, BY ATTACHMENT TO THIS FORM, submits a summary and disposition of individual cases of litigation in Florida adjudicated against the firm during the past five (5) years; all legal actions against City of Venice during the past five (5) years; and actions by or against any Federal, State and local agency during the past five (5) years.

Company Name: Hyatt Survey Services, Inc.

Authorized Signature: Pamela A. Hyatt

Name (print or type): Pamela A. Hyatt, PSM

Title: President

Failure to check the appropriate blocks above may result in disqualification of your proposal. Failure to provide documentation of a possible conflict of interest, or a summary of past litigation, may result in disqualification of your proposal. Should additional information regarding the above items come to the attention of City of Venice after award, the awarded contract shall be subject to immediate termination.

NON-COLLUSION AFFIDAVIT

State of Florida }
SS.
County of Manatee

Pamela A. Hyatt being first duly sworn, deposes and says that:

1. He/she is the President, (Owner, Partner, Officer, Representative or Agent) of Hyatt Survey Services, Inc. the Proposer that has submitted the attached Proposal;

2. He/she is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;

3. Such Proposal is genuine and is not a collusive or sham Proposal;

4. Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or have in any manner, directly or indirectly sought by agreement or collusion, or have in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference with any Proposer, firm, or person to fix the price or prices in the attached Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposal price or the Proposal price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposal Work.

Signed, sealed and delivered
in the presence of:

By: Pamela A. Hyatt

Pamela A. Hyatt, PSM
(Printed Name)

President
(Title)

ACKNOWLEDGEMENT

State of Florida

County of Manatee

On this the 15th day of November, 2018, before me, the undersigned Notary Public of the State of Florida, personally appeared Pamela A. Hyatt and (Names of individual(s) who appeared before Notary) whose name(s) in/are Subscribed to within instrument, and he/she/they acknowledge that he/she/they executed it.

NOTARY PUBLIC, STATE OF FLORIDA

NOTARY PUBLIC SEAL OF OFFICE:

DARLENA M. STRONG
MY COMMISSION # GG 206944
EXPIRES: June 29, 2022
Bonded Thru Notary Public Underwriters

Darlena M. Strong
(Name of Notary Public: Print, stamp, or type as commissioned)

☒ Personally known to me, or ☐ Produced Identification: _____ ☐ DID take an oath, or ☒ DID NOT take an oath

THIS PAGE MUST BE COMPLETED & SUBMITTED WITH OFFER

Sharek Solutions Forms

PUBLIC ENTITY CRIME INFORMATION

A person or affiliate who has been placed on the State of Florida's convicted vendor list following a conviction for a public entity crime may not submit an RFQ proposal on a contract to provide any goods or services to a public entity, may not submit a response on a contract with a public entity for services in the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a Contractor, supplier, Sub-Contractor, or Contractor under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in **Section 2876.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.**

I, ROBERT CHRISTOPHER SHAREK, being an authorized representative of the firm of SHAREK SOLUTIONS INC., located at City: SARASOTA, FL State: FLORIDA Zip: 34241, have read and understand the contents of the Public Entity Crime Information and of this formal RFQ package, hereby submit our proposal accordingly.

Signature: R. Chris Sharek Date: 11/14/18

Phone: 941 915 6003 Fax: N/A

Federal ID#: 45-2557186

CHRIS@SHAREKSOLUTIONS.COM

DRUG FREE WORKPLACE

Preference shall be given to business with drug-free workplace programs. Whenever two or more RFQs, which are equal with qualifications and service, are received by the City for the procurement of commodities or contractual services, an RFQ received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, your firm shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the action that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under an RFQ, a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that as a condition of working on the commodities or contractual services that are under RFQ, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of the United Sates or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by an employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Concur ✓ Variance _____

11/14/18 _____

Date Contractor's Signature

CERTIFICATION REGARDING DEBARMENTS, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION-LOWER TIER FEDERALLY FUNDED TRANSACTIONS STATE OF FLORIDA GRANT ASSISTANCE PURSUANT TO AMERICAN RECOVERY AND REINVESTMENT ACT UNITED STATES DEPARTMENT OF ENERGY AWARDS

1. The undersigned hereby certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. The undersigned also certifies that it and its principals:
   a. Have not within a three-year period preceding this certification been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.
   b. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 2.(a) of this Certification; and (b) Have not within a three-year period preceding this certification had one or more public transactions (Federal, State or Local) terminated for cause or default.
3. Where the undersigned is unable to certify to any of the statements in this certification, an explanation shall be attached to this certification.

Dated this 14th day of NOVEMBER, 2018.

By: R. Christopher Sharek
Authorized Signature

PRESIDENT / R. CHRISTOPHER SHAREK
Typed Name of Title

SHAREK SOLUTIONS, INC.
Recipient's Firm Name

4080 MIDDLESEX PLACE
Street Address

SARASOTA FL 34241
City/State/Zip Code

CONFLICT/NON CONFLICT OF INTEREST AND LITIGATION STATEMENT

CHECK ONE

☑ To the best of our knowledge, the undersigned firm has no potential conflicts of interest due to any other clients, contracts, or property interest for this project.

OR

☐ The undersigned firm, by attachment to this form, submits information which may be a potential conflict of interest due to other clients, contracts, or property interest for this project.

LITIGATION STATEMENT

IN FLORIDA ONLY, JUDGMENTS AGAINST THE FIRM, AND SUITS AGAINST CITY OF VENICE. INCLUDE ACTIONS AGAINST THE FIRM BY OR AGAINST ANY LOCAL, STATE, OR FEDERAL REGULATORY AGENCY.

CHECK ONE

☑ The undersigned firm has had no litigation adjudicated against the firm on any projects in the last five (5) years and has filed no litigation against City of Venice in the last five (5) years.

OR

☐ The undersigned firm, BY ATTACHMENT TO THIS FORM, submits a summary and disposition of individual cases of litigation in Florida adjudicated against the firm during the past five (5) years; all legal actions against City of Venice during the past five (5) years; and actions by or against any Federal, State and local agency during the past five (5) years.

Company Name: SHAREK SOLUTIONS, INC.

Authorized Signature: R. Clisk

Name (print or type): R. CHRISTOPHER SHAREK

Title: PRESIDENT

Failure to check the appropriate blocks above may result in disqualification of your proposal. Failure to provide documentation of a possible conflict of interest, or a summary of past litigation, may result in disqualification of your proposal. Should additional information regarding the above items come to the attention of City of Venice after award, the awarded contract shall be subject to immediate termination.

NON-COLLUSION AFFIDAVIT

State of FLORIDA }
County of SARASOTA } SS.

R. CHRISTOPHER SHAREK being first duly sworn, deposes and says that:

1. He/she is the PRESIDENT/OWNER, (Owner, Partner, Officer, Representative or Agent) of SHAREK SOLUTIONS the Proposer that has submitted the attached Proposal;

2. He/she is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;

3. Such Proposal is genuine and is not a collusive or sham Proposal;

4. Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or have in any manner, directly or indirectly sought by agreement or collusion, or have in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference with any Proposer, firm, or person to fix the price or prices in the attached Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposal price or the Proposal price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposal Work.

Signed, sealed and delivered
in the presence of:

_____

_____

By: R. Christopher Sharek

R. CHRISTOPHER SHAREK
(Printed Name)

PRESIDENT
(Title)

ACKNOWLEDGEMENT

State of FLORIDA

County of HILLSBOROUGH

On this the 14th day of NOVEMBER, 2018, before me, the undersigned Notary Public of the State of FLORIDA, personally appeared R. CHRISTOPHER SHAREK and (Names of individual(s) who appeared before Notary) whose name(s) in/are Subscribed to within instrument, and he/she/they acknowledge that he/she/they executed it.

NOTARY PUBLIC SEAL OF OFFICE:

LETICIA M. HENDERSON
Commission # GG 255603
Expires October 23, 2022
Bonded Thru Troy Fain Insurance 800-385-7019

Leticia M. Henderson
NOTARY PUBLIC, STATE OF FLORIDA

_____
(Name of Notary Public: Print, stamp, or type as commissioned)

☐ Personally known to me, or ☒ Produced Identification: DRIVER LICENSE ☐ **DID** take an oath, or ☑ **DID NOT** take an oath

THIS PAGE MUST BE COMPLETED & SUBMITTED WITH OFFER

Proof of Insurance Coverage

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/20/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER LIC #0437153 1-212-948-1306 Marsh Risk & Insurance Services CIRTS_Support@jacobs.com 633 W. Fifth Street Los Angeles, CA 90071	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): 1-212-948-1306 E-MAIL ADDRESS:
INSURED Jacobs Engineering Group Inc. C/O Global Risk Management 1000 Wilshire Blvd., Suite 2100 Los Angeles, CA 90017	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : ACE AMER INS CO — 22667 INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 54599221 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			HDO G71096750	07/01/18	07/01/19	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 500,000
	X CONTRACTUAL LIABILITY						MED EXP (Any one person)	$ 5,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY	$ 1,000,000
	POLICY PRO-JECT LOC						GENERAL AGGREGATE	$ 1,000,000
	OTHER:						PRODUCTS - COMP/OP AGG	$ 1,000,000
								$
A	AUTOMOBILE LIABILITY			ISA H25158684	07/01/18	07/01/19	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			WLR C6479033A (AOS)	07/01/18	07/01/19	X PER STATUTE OTH-ER	
A	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: N	N / A		WCU C64789533 (LA, OH, TX)	07/01/18	07/01/19	E.L. EACH ACCIDENT	$ 100,000
A	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			SCF C64789570 (WI)	07/01/18	07/01/19	E.L. DISEASE - EA EMPLOYEE	$ 100,000
							E.L. DISEASE - POLICY LIMIT	$ 500,000
A	PROFESSIONAL LIABILITY "CLAIMS MADE"			EON G21655065 009	07/01/18	07/01/19	PER CLAIM/PER AGG AGGREGATE DEFENSE INCLUDED	1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

PROJECT MGR: Tom Farkas. RE: PROFESSIONAL ENGINEERING SERVICES FOR LARGE UTILITIES CAPITAL PROJECTS. CONTRACT NUMBER: RFQ # 3092-18. CONTRACT END DATE: 11/20/2020. SECTOR: Public. *$2,250,000 SIR FOR STATES OF: LA, OH, TX. The City of Venice, its Elected Officials, Officers, Agents, Employees are added as an additional insured for general liability & auto liability as respects the negligence of the insured in the performance of insured's services to cert holder under contract for captioned work. Coverage is primary and certificate holder's insurance is excess and non-contributory. Waiver of subrogation is hereby granted in favor of The City of Venice, its Elected Officials, Officers, Agents, Employees for GL and AL. General Liability coverage includes the severability of interests/Cross Suits Liability

CERTIFICATE HOLDER	CANCELLATION
The City of Venice 401 W. Venice Avenue Venice, FL 34285 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

SUPPLEMENT TO CERTIFICATE OF INSURANCE

DATE
11/20/2018

NAME OF INSURED: Jacobs Engineering Group Inc.

provision in favor of the holder. *THIS IS A SAMPLE CERTIFICATE ONLY*. THE ACTUAL CERTIFICATE FOR THE PROPOSED PROJECT WILL COMPLY WITH THE TERMS AND CONDITIONS NEGOTIATED IN THE FINAL CONTRACT, CONSISTENT WITH POLICY TERMS AND CONDITIONS.

Client#: 8512 HYATTSUR

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 12/08/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Richard Caligiuri	
Bouchard Insurance (FTM) 8191 College Parkway,Suite 202 Fort Myers, FL 33919 239 489-3232	PHONE (A/C, No, Ext): 239 489-3232	FAX (A/C, No): 239 489-1084
	E-MAIL ADDRESS: clcerts@bouchardinsurance.com	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Amerisure Mutual Insurance Company	23396
INSURER B : Hudson Excess Insurance Company	
INSURER C : Beazley Insurance Co Inc	37540
INSURER D : Old Dominion Insurance Company	40231
INSURER E :	
INSURER F :	

INSURED
Hyatt Survey Services, Inc.
11007 8th Ave. E.
Bradenton, FL 34212

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY	Y	Y	GL2085309	12/10/2017	12/10/2018	EACH OCCURRENCE	$1,000,000
	[X] COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	$100,000
	[ ] CLAIMS-MADE [X] OCCUR						MED EXP (Any one person)	$1,000,000
							PERSONAL & ADV INJURY	$1,000,000
							GENERAL AGGREGATE	$2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	$2,000,000
	[ ] POLICY [X] PRO-JECT [ ] LOC							$
D	AUTOMOBILE LIABILITY	Y	Y	B1P9713E	12/10/2017	12/10/2018	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	[X] ANY AUTO						BODILY INJURY (Per person)	$
	[ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	[X] HIRED AUTOS [X] NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
B	[ ] UMBRELLA LIAB [ ] OCCUR	Y		HXS100012801	12/10/2017	12/10/2018	EACH OCCURRENCE	$2,000,000
	[X] EXCESS LIAB [X] CLAIMS-MADE						AGGREGATE	$2,000,000
	[ ] DED [X] RETENTION $0							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N	N / A	Y	WC2052951	12/10/2017	12/10/2018	[X] WC STATU-TORY LIMITS [ ] OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [N]						E.L. EACH ACCIDENT	$1,000,000
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$1,000,000
							E.L. DISEASE - POLICY LIMIT	$1,000,000
C	Professional Ded: $20,000		Y	BINDER292903	12/10/2017	12/10/2018	$1,000,000 Each Claim $1,000,000 Aggregate	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

(See Attached Descriptions)

CERTIFICATE HOLDER

INFORMATIONAL PURPOSES ONLY!!
INFORMATIONAL PURPOSES ONLY!!

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Burns & Wilcox
Florida Surplus Lines Cover Page

Insured's Name: Sharek Solutions, Inc.
Policy Number: PSH03610368

Policy Dates:
From: 07/17/2018 To: 07/17/2019

Surplus Lines Agent's Name: Christopher S. Siegel
Surplus Lines Agent's Address:
400 Colonial Center Parkway Suite 126, Lake Mary, FL 32746

Surplus Lines Agent's License: E169916

Producing Agent's Name (name of individual not company):
Deseriee Wanson

Producing Agent's Physical Address:
1855 West State Road 434, Longwood, FL 32750-

"THIS INSURANCE IS ISSUED PURSUANT TO THE FLORIDA SURPLUS LINES LAW. PERSONS INSURED BY SURPLUS LINES CARRIERS DO NOT HAVE THE PROTECTION OF THE FLORIDA INSURANCE GUARANTY ACT TO THE EXTENT OF ANY RIGHT OF RECOVERY FOR THE OBLIGATION OF AN INSOLVENT UNLICENSED INSURER"

"SURPLUS LINES INSURERS' POLICY RATES AND FORMS ARE NOT APPROVED BY ANY FLORIDA REGULATORY AGENCY."

Policy Premium:	$3,650.00	**Policy Fee:**	$35.00
Inspection Fee:		**Service Fee:**	$3.69
Tax:	$184.25	**Citizen's Assessment:**	
EMPA Surcharge:		**FHCF Assessment:**	

Surplus Lines Agent's Countersignature: 

LLOYD'S

Insurance effected through:
CFC Underwriting Limited
85 Gracechurch Street
London EC3V 0AA
United Kingdom

This is to Certify that in accordance with the authorization granted under the Contract (the unique market reference number which is specified in the Declarations page) to the undersigned by certain Lloyd's Underwriters (whose names and the proportions underwritten by them are shown in this Policy) and in consideration of the premium, the said Underwriters are hereby bound to insure in accordance with the terms and conditions contained herein or endorsed hereon.

The subscribing Insurers' obligations under Contracts of Insurance to which they subscribe are several and not joint and are limited solely to the extent of their individual subscriptions. The subscribing Insurers are not responsible for the subscription of any co-subscribing Insurer who for any reason does not satisfy all or part of its obligations.

In Witness whereof this Certificate has been signed by:

Authorized Official

Please examine this Document carefully. If it does not meet your needs, please return it immediately. In all communications the Policy Number appearing in line one of the Declarations page should be quoted.

DECLARATIONS

POLICY NUMBER:	PSH03610368
UNIQUE MARKET REFERENCES:	B087518C9N5007 B128410135F18
THE INSURED:	SHAREK SOLUTIONS INC
ADDRESS:	4080 MIDDLESEX PLACE SARASOTA, FL 34241 US

THE UNDERWRITERS: Underwritten by certain Lloyd's underwriters, broken down as follows:

In respect of Insuring Clauses: 1, 6 & 8

AMA 1200	19.90000%
BRT 2987	20.05500%
ATL 1861	14.72280%
CHN 2015	7.50000%
ENH 5151	6.86140%
NAV 1221	6.86140%
XLC 2003	6.86140%
HDU 382	3.43070%
EVE 2786	3.43070%
MKL 3000	3.43070%
CGM 2488	3.30000%
CNP 4444	1.93060%
AES 1225	1.71530%

In respect of Insuring Clauses: 2, 4 & 5

No Cover Given

In respect of Insuring Clause: 3

AML 2001	31.81820%
AMA 1200	11.93180%
BRT 2987	15.90910%
ATL 1861	11.93180%
MKL 3000	7.95450%
CHN 2015	7.50000%
CGM 2488	5.00000%
EVE 2786	3.97730%
HDU 382	3.97730%

THE INCEPTION DATE:	00:01 Local Standard Time on 17 Jul 2018
THE EXPIRY DATE:	00:01 Local Standard Time on 17 Jul 2019
TOTAL PAYABLE:	USD3,650.00

Broken down as follows:

Premium:	USD3,650.00
Policy Administration Fee:	USD0.00

BUSINESS ACTIVITIES: Project Management & Environmental Engineering, as more fully described in

	the application form dated 18 Jun 2018 and as held on file by CFC Underwriting Limited
CHOICE OF LAW:	Florida
SERVICE OF SUIT:	Mendes & Mount LLP 750 7th Avenue New York NY10019-9399
LEGAL ACTION:	Worldwide
TERRITORIAL SCOPE:	Worldwide
US CLASSIFICATION:	Surplus Lines
SURPLUS LINES BROKER:	AmWINS Brokerage of Florida Licence No. : A052540 302 Knights Run Avenue 1240 Tampa FL 33602
RETROACTIVE DATE:	17 Jul 2015
OPTIONAL EXTENDED REPORTING PERIOD:	12 months for USD3,065.00 (only payable if you choose to exercise this option)
APPROVED CLAIMS PANEL PROVIDERS:	Wilson Elser Context Security Kivu Consulting Crowdstrike DOSArrest Mullen Coughlin Clyde & Co
CLAIMS MANAGER:	CFC Underwriting Limited newclaims@cfcunderwriting.com
CYBER INCIDENT RESPONSE LINE:	In the event of an actual or suspected cyber incident please call our Cyber Incident Response Team on the toll free 24-hour hotline number: 1 844-677-4155
WORDING:	A&E US v3.0
ENDORSEMENTS:	ACTIVITIES EXCLUSION CLAUSE U.S. TERRORISM RISK INSURANCE ACT OF 2002 AS AMENDED NOT PURCHASED CLAUSE SUBJECTIVITY CONDITION CLAUSE

LIMITS OF LIABILITY AND DEDUCTIBLES

INSURING CLAUSE 1: PROFESSIONAL LIABILITY

ALL SECTIONS COMBINED		
Aggregate limit of liability:	USD1,000,000	including **costs and expenses**
SECTION A: ERRORS AND OMISSIONS		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**
SECTION B: BREACH OF CONTRACT		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**
SECTION C: SUB-CONTRACTOR VICARIOUS LIABILITY		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**
SECTION D: CONTINGENT BODILY INJURY AND PROPERTY DAMAGE LIABILITY		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**
SECTION E: INTELLECTUAL PROPERTY RIGHTS INFRINGEMENT		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**
SECTION F: POLLUTION LIABILITY		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**
SECTION G: REGULATORY COSTS AND FINES		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**
SECTION H: DISHONESTY OF EMPLOYEES		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**
SECTION I: PAYMENT OF WITHHELD FEES		
Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD5,000	each and every claim, including **costs and expenses**

INSURING CLAUSE 2: CYBER EVENT COSTS

NO COVER GIVEN

INSURING CLAUSE 3: COMMERCIAL GENERAL LIABILITY

ALL SECTIONS COMBINED

Aggregate limit of liability:	USD2,000,000	including **costs and expenses**

SECTION A: BODILY INJURY AND PROPERTY DAMAGE LIABILITY

Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD500	each and every claim, including **costs and expenses**

SECTION B: PERSONAL AND ADVERTISING INJURY

Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD500	each and every claim, including **costs and expenses**

SECTION C: PRODUCTS AND COMPLETED OPERATIONS LIABILITY

Aggregate limit of liability:	USD1,000,000	including **costs and expenses**
Deductible:	USD500	each and every claim, including **costs and expenses**

SECTION D: TENANTS' LEGAL LIABILITY

Aggregate limit of liability:	USD250,000	including **costs and expenses**
Deductible:	USD500	each and every claim, including **costs and expenses**

SECTION E: MEDICAL EXPENSES

Limit of liability:	USD5,000	each and every claim
Deductible:	USD0	each and every claim

SECTION F: EMPLOYEE BENEFITS LIABILITY

Aggregate limit of liability:	USD1,000,000	including **costs and expenses**
Deductible:	USD500	each and every claim, including **costs and expenses**

SECTION G: NON-OWNED AND HIRED AUTOMOBILE LIABILITY

Limit of liability:	USD1,000,000	each and every claim, including **costs and expenses**
Deductible:	USD500	each and every claim, including **costs and expenses**

SECTION H: LIABILITY FOR DAMAGE TO HIRED OR LEASED AUTOMOBILES

Limit of liability:	USD50,000	each and every claim, including **costs and expenses**
Deductible:	USD500	each and every claim, including **costs and expenses**

INSURING CLAUSE 4: COMMERCIAL PROPERTY

NO COVER GIVEN

INSURING CLAUSE 5: BUSINESS INTERRUPTION

NO COVER GIVEN

INSURING CLAUSE 6: LOSS MITIGATION

Limit of liability:	USD1,000,000	each and every claim
Deductible:	USD0	each and every claim

INSURING CLAUSE 7: COURT ATTENDANCE COSTS

Aggregate limit of liability:	USD100,000	sub-limited to USD2,000 per day
Deductible:	USD0	each and every claim

INSURING CLAUSE 8: REPUTATION AND BRAND PROTECTION

Aggregate limit of liability:	USD100,000	
Deductible:	USD0	each and every claim

Professional Registrations

Florida Board of Professional Engineers
2639 North Monroe Street, Suite B-112
Tallahassee, FL 32303-5268

Jacobs Engineering Group Inc.
600 WILSHIRE BOULEVARD
SUITE 1000 -LEGAL
LOS ANGELES, CA 90017

Each licensee is solely responsible for notifying the Florida Board of Professional Engineers in writing the licensee's current address.

Name changes require legal documentation showing name change. An original, a certified copy, or a duplicate of an original or certified copy of a document which shows the legal name change will be accepted unless there is a question about the authenticity of the document raised on its face, or because the genuineness of the document is uncertain, or because of another matter related to the application.

At least 90 days prior to the expiration date shown on this license, a notice of renewal will be sent to your last known address. If you have not yet received your notice 60 days prior to the expiration date, please call (850) 521-0500, or write, Florida Board of Professional Engineers, 2639 North Monroe Street, Suite B-112,Tallahassee, FL 32303-5268 or e-mail: board@fbpe.org. Our website address is http://www.fbpe.org.

State of Florida

Board of Professional Engineers

Attests that

Jacobs Engineering Group Inc.

FBPE FLORIDA BOARD OF PROFESSIONAL ENGINEERS

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

Expiration: 2/28/2019
Audit No: 228201902917 R

CA Lic. No: 2822

State of Florida
Department of State

I certify from the records of this office that JACOBS ENGINEERING GROUP INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on February 12, 1987.

The document number of this corporation is P13217.

I further certify that said corporation has paid all fees due this office through December 31, 2018, that its most recent annual report/uniform business report was filed on April 8, 2018, and that its status is active.

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

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Eighth day of April, 2018

Ken Detzner

Secretary of State

Tracking Number: CC7135491533

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

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

8:11:10 AM 7/16/2018

Licensee Details

Licensee Information

Name:	**JACOBS ENGINEERING GROUP INC (Primary Name)**
Main Address:	**1000 WILSHIRE BLVD SUITE 2100 LEGAL LOS ANGELES California 90017**
County:	**OUT OF STATE**
License Mailing:	
LicenseLocation:	**1999 BRYAN STREET #1200 DALLAS TX 75201**
County:	**OUT OF STATE**

License Information

License Type:	**Geology Business**
Rank:	**GB**
License Number:	**GB815**
Status:	**Current**
Licensure Date:	**02/02/2018**
Expires:	**07/31/2020**

Special Qualifications	Qualification Effective

Alternate Names

View Related License Information

View License Complaint

Florida Board of Professional Engineers
2639 North Monroe Street, Suite B-112
Tallahassee, FL 32303-5268

Sharek Solutions, Inc.
4080 MIDDLESEX PLACE
SARASOTA, FL 34241

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State of Florida

Board of Professional Engineers

Attests that

Sharek Solutions, Inc.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

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

Expiration: 2/28/2019
Audit No: 228201905109 R

CA Lic. No:
31360

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500
800HELPFLA(435-7352) or (850) 488-2221

January 13, 2017

HYATT SURVEY SERVICES INC
11007 8TH AVENUE EAST
BRADENTON, FL 34212

SUBJECT: Professional Surveyor and Mapper Business Certificate # LB7203

Your application / renewal as a professional surveyor and mapper business as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2019.

You are required to keep your information with the Board current. Please visit our website at www.800helpfla.com/psm to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850-488-2221.

Detach Here

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LB7203**
Expiration Date February 28, 2019

Professional Surveyor and Mapper Business License

Under the provisions of Chapter 472, Florida Statutes

HYATT SURVEY SERVICES INC
11007 8TH AVENUE EAST
BRADENTON, FL 34212

ADAM H. PUTNAM
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL GEOLOGISTS

THE PROFESSIONAL GEOLOGIST HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 492, FLORIDA STATUTES

FARKAS, THOMAS ALEX

15617 HAWKS CREST LOOP
ODESSA FL 33556

LICENSE NUMBER: PG2074

EXPIRATION DATE: JULY 31, 2020

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

State of Florida

Board of Professional Engineers

Attests that

William D. Beddow , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201913800 R

P.E. Lic. No:
52581

State of Florida

Board of Professional Engineers

Attests that

Niel Holland Postlethwait , P.E.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201925074 R

P.E. Lic. No:
64034

State of Florida

Board of Professional Engineers

Attests that

Rafael Vazquez-Burney , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201925983 R

P.E. Lic. No:
70768

State of Florida

Board of Professional Engineers

Attests that

Allison Marie Lewis , P.E.

Do not alter this document in any form.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201937293 I

P.E. Lic. No: 85332

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State of Florida

Board of Professional Engineers

Attests that

Ryan Alexander Messer , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201921686 R

P.E. Lic. No:

79332

State of Florida

Board of Professional Engineers

Attests that

Matthew Foster Tennant , P.E.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201925646 R

P.E. Lic. No:
68302

State of Florida

Board of Professional Engineers

Attests that

R. Christopher Sharek , P.E.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201909735 R

P.E. Lic. No:
58170

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500
800HELPFLA(435-7352) or (850) 488-2221

January 6, 2017

RUSSELL PERRY HYATT
11007 8TH AVE E
BRADENTON, FL 34212

SUBJECT: Professional Surveyor and Mapper License # LS5303

Your application / renewal as a professional surveyor and mapper as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2019.

You are required to keep your information with the Board current. Please visit our website at www.800helpfla.com/psm to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850-488-2221.

Detach Here

Florida Department of Agriculture and Consumer Services
Board of Professional Surveyors and Mappers

LS5303

Professional Surveyor and Mapper
RUSSELL PERRY HYATT

IS LICENSED under the provisions of Ch. 472 FS
Expiration date: February 28, 2019

Detach Here

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LS5303**
Expiration Date February 28, 2019

Professional Surveyor and Mapper License

Under the provisions of Chapter 472, Florida Statutes

RUSSELL PERRY HYATT
11007 8TH AVE E
BRADENTON, FL 34212

ADAM H. PUTNAM
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472. Florida Statutes.

Contact us

Tom Farkas, PG
Project Manager

4350 W Cypress Street, Suite 600
Tampa, FL 33607
813.281.7906
Tom.Farkas@Jacobs.com

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