Professional Engineering Services For

Large Utilities Capital Projects

RFQ# 3092-18 | City of Venice, Florida | 21 November 2018

BLACK & VEATCH

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Black & Veatch Corporation
3405 W. Dr. M.L. King Jr. Boulevard,
Suite 125
Tampa, FL 33607
(813) 207-7910
WestfallAA@bv.com

November 21, 2018

City of Venice
Mr. Peter Boers, Procurement Manager
Procurement – Finance Department
401 W. Venice Avenue, Room 204
Venice, FL, 34285

Dear Mr. Boers:

Black & Veatch is pleased to submit this Statement of Qualifications in response to the City of Venice's RFQ for Professional Engineering Services for Large Utilities Capital Projects (RFQ # 3092-18). We are focusing our submittal on Project No. 2 as defined in the Request for Qualification and request the City's consideration for both Phase 1 (New Water Booster Pump Station) and Phase 1 (Second Stage Reverse Osmosis System Expansion).

Our team's experience and expertise are well-suited to provide added value to the City on these projects. The selection of Black & Veatch to deliver these important projects will provide the City the following benefits, as described in this Statement of Qualifications:

- Optimized treatment quality and operability of the upgraded Reverse Osmosis system.
- Refined booster pump & controls design for best operation under all current and future system conditions.
- Public support achieved through good-neighbor design: screening, aesthetics, noise mitigation.
- Facilities optimized for energy efficiency and tools to support energy management.
- Improved distribution system water quality, including considerations for the emergency regional interconnect.
- High quality deliverables and responsive client service provided by our proven local team.

Black & Veatch values our relationship with the City of Venice and the opportunity to have worked with the City on important projects such WTP Reverse Osmosis Recovery Efficiency Study and the Water Distribution System Master Plan. We are very interested in the opportunity to continue partnering with the City to implement the system improvements proposed under this RFQ, and we appreciate your consideration of Black & Veatch to serve as your engineer for these important projects.

Very truly yours,

Black & Veatch Corporation

Andrew Westfall, Client Manager

Project Team

BLACK & VEATCH OVERVIEW

Founded more than 100 years ago in 1915, Black & Veatch is one of the most capable and experienced engineering and construction companies in the world. Our firm is an industry leader in the key fields of critical human infrastructure: water, energy, and telecommunications. Our complimentary capabilities among these fields enables us to take a holistic approach to delivering projects for our clients. For example, our combined water and energy expertise has never been more valuable than it is today, as utilities look for solutions that meet complex water treatment and distribution needs while optimizing energy costs.

Black & Veatch provides a full complement of engineering services related to water, wastewater and reclaimed water systems, including planning, studies, detailed design, permitting, bidding services, procurement, construction administration & inspection, operations optimization, asset management, and financing.

Black & Veatch is a large firm with world-class resources and unmatched engineering expertise. However, the firm continues to take a local approach to serving clients and maintains stable regional offices for that purpose. We will manage and lead this project from our full-service office in Tampa. We have more than 60 professionals in the Tampa Bay area and more than 300 professionals throughout Florida located in Tampa, Fort Myers, Coral Springs, Miami, Orlando, and Jacksonville.

BLACK & VEATCH BY THE NUMBERS

100 YEARS
Black & Veatch has worked in the water infrastructure business

60
Years in Florida

325
Professionals in Florida

100+ OFFICES

11k
Employees

PROJECT TEAM AND BENEFITS

Black & Veatch has assembled a team with the expertise to address all the critical elements of the Water Booster Pump Station and Second Stage Reverse Osmosis (RO) System Expansion projects while delivering exceptional value to the City of Venice. Our team will provide the following benefits to the City on these projects.

Optimized treatment quality and operability of the upgraded RO system. The Black & Veatch team combines recent, local RO experience with world-class RO treatment process expertise. The result will be an expanded RO treatment system that achieves optimal treatment quality. We will also design treatment facilities with a focus on flexibility of operations and ease of maintenance. Local operations specialist, Ron Parker, and membrane process specialist Vasu Veerapaneni have 65 combined years of experience and have teamed together at least six RO treatment projects.

Dr. Vasu Veerapaneni is an Industry-recognized expert in Membranes and RO treatment process, having been involved in the design of dozens of RO water treatment facilities. He has authored 65 technical papers and conference proceedings and is an active member of the AWWA Water Desalting Committee, Membrane Technology Research Committee, and Membrane Process Committee

Tampa-based **Ron Parker** is an expert in Water System Operations, Maintenance, Startup, and Training. He has more than 35 years of experience in the field, including seven years as Sr. Operations Manager for Tampa Bay Water. While with Tampa Bay Water, he was in charge of O&M for all treatment and pumping facilities in Tampa Bay Water's 170 mgd system, including the Seawater RO Desalination WTP.

Black & Veatch recently designed the complete replacement of Dunedin's RO water treatment system as part of a plant wide refurbishment. Black & Veatch's role on the project includes extensive pilot testing, design, permitting, and construction. Our local team's recent experience also includes RO treatment process projects for Venice, Fort Myers, and Tampa Bay Water.

Refined booster pump & controls design for best operation under all system conditions. We will evaluate all system scenarios developed through our recent work on the City's Water Distribution System Master Plan, including current and future planning years, seasonal population swings, and fire flows. Our holistic knowledge of the City's system will enable our team to refine the design of pumps and controls to operate effectively and efficiency under all potential operation conditions.

Tampa-based instrumentation and control specialist, **Richard Taylor**, has more than 35 years of experience designing operational strategies and controls for water distribution systems.

Amanda Schwerman has been analyzing the City of Venice water distribution system for eight years.

Public support achieved through good-neighbor design. Black & Veatch has extensive experience designing facilities for optimal aesthetics, including visual screening, architectural treatment and sound attenuation. Such elements will be critical for fostering public acceptance and facilitating the rezoning process. We have in-house acoustical modeling capabilities that will enable us to determine acceptable sound levels and design the equipment with corresponding sound attenuation considerations.

Facilities optimized for energy efficiency and equipped for best energy management. Black & Veatch is an industry leader delivering innovative energy solutions for water utilities. Our local team's experience includes conducting energy efficiency / optimization studies for Hillsborough County, Pinellas County, Venice, Hollywood, and the Peace River Manasota Regional Water Supply Authority. We will maximize the efficiency of pumps & controls and consider opportunities to include renewable energy features at the facilities. Instrumentation and energy management dashboards can be implemented to provide operators the information they need to make cost-saving operational decisions.

Improved distribution system water quality. We will leverage the recent master plan water quality analysis and our team's experience to assess the benefits of pump station features such as tank mixing and chemical trim. Ron Parker and Amanda Schwerman recently teamed to analyze Desoto County's water distribution system and identified water quality solutions to help the County reduce flushing volume. Our team also has extensive experience evaluating water quality / blending challenges in a regional distribution system through 20 years working as Tampa Bay Water's System Engineer. This will be important for understanding and addressing water quality challenges associated with the emergency interconnect.

High quality deliverables and responsive service provided by our proven local team. Black & Veatch follows a strict program of quality assurance/quality control in compliance with ISO 9000 standards. Our teams are trained on Black & Veatch's quality management program and held accountable for its successful execution. Our local team also prides itself on providing responsive client service. As demonstrated on prior projects, we will be in Venice whenever needed to visit facilities and collaborate with the City.

ORGANIZATIONAL CHART

Black & Veatch has assembled a team of highly qualified professionals to address all elements of these projects. Our team is comprised largely of local staff that are familiar with the City's water treatment and distribution facilities through our recent projects. Our local professionals are supplemented with industry-leading technical specialists and all necessary engineering discipline leads in-house, enabling Black & Veatch to efficiently perform all major elements of this project with in-house resources.

Andy Westfall will serve as the City's Client Manager for these projects. Andy is a professional civil engineer with 29 years of experience, and he has been serving water utility clients in West-central Florida since 1989. Amanda Schwerman will serve as Assistant Client Manager and will provide technical support such as hydraulic design and water quality.

For each of the two projects, we have assigned a Project Manager based on their experience with similar facilities, and we have assigned key technical staff to each of the two projects to meet project-specific needs.

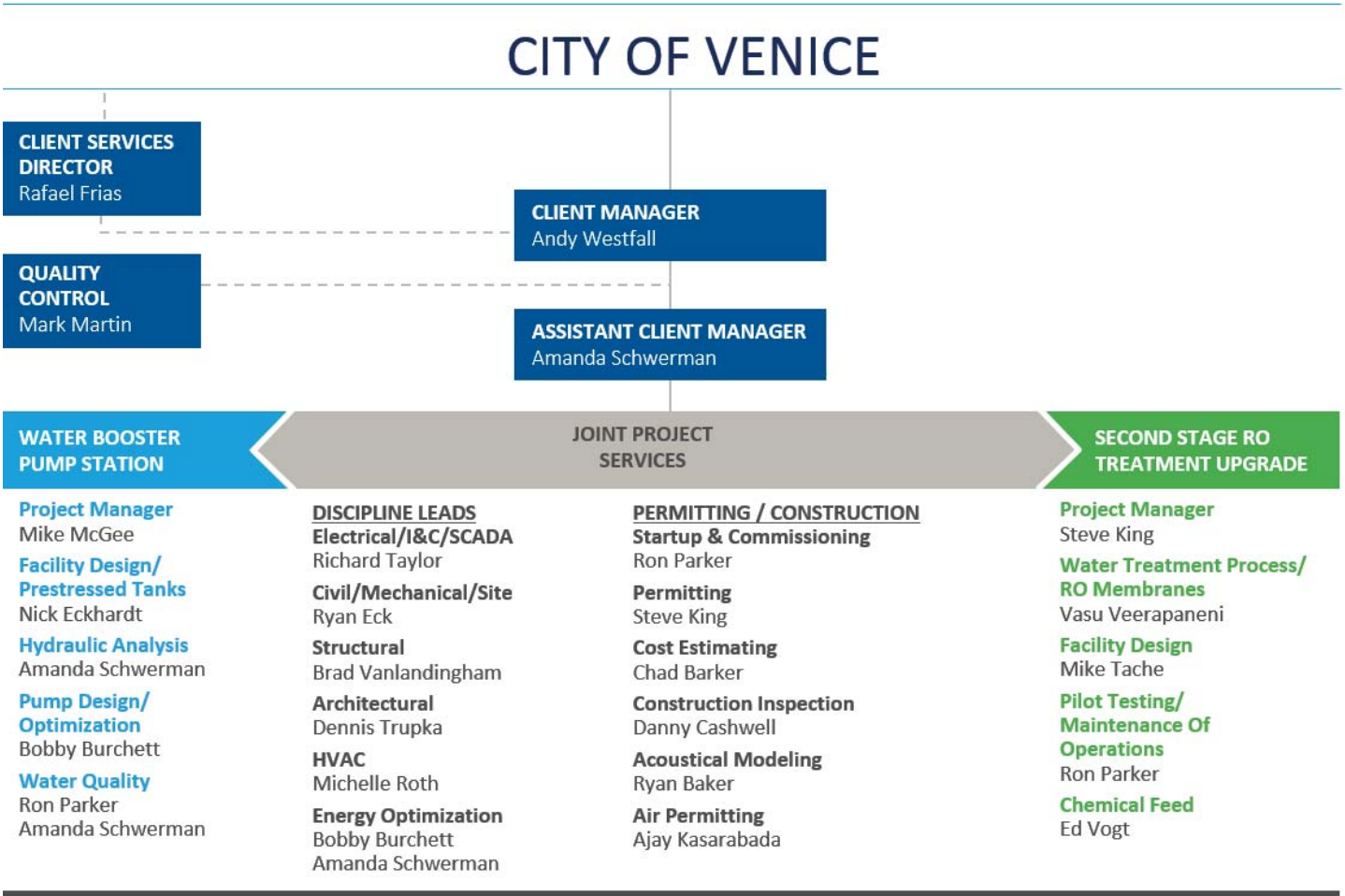
However, the majority of the resources are common to both projects, which will promote efficiency and consistency in the designs.

We propose to engage **George F. Young, Inc. (GFY)** to perform site-related services such as surveying, underground utility locations, environmental/wetlands assessments, rezoning support, traffic studies, environmental/stormwater permitting and landscape architecture. GFY has been specializing in surveying, land development, and civil / site engineering for 99 years. Their focus on these fields and extensive local experience provides a knowledge of local codes and regulatory processes that will be invaluable to the successful rezoning and site related permitting necessary for the booster pump station project.

By engaging a single specialized company to perform all site related services, our team will execute these elements of the project with maximum coordination and efficiency. The organizational chart below identifies our team members, the team organization, and lines of communication with the City.

BLACK & VEATCH KEY LOCAL RESOURCES:

- Client Management
- Project Management
- Quality Control
- Civil Engineering
- Mechanical Engineering
- Electrical Engineering
- I&C Engineering
- Pilot Testing
- Operations Support
- Startup & Commissioning
- Hydraulic analysis & Design
- Energy-Efficiency
- Sit Development/ Permitting



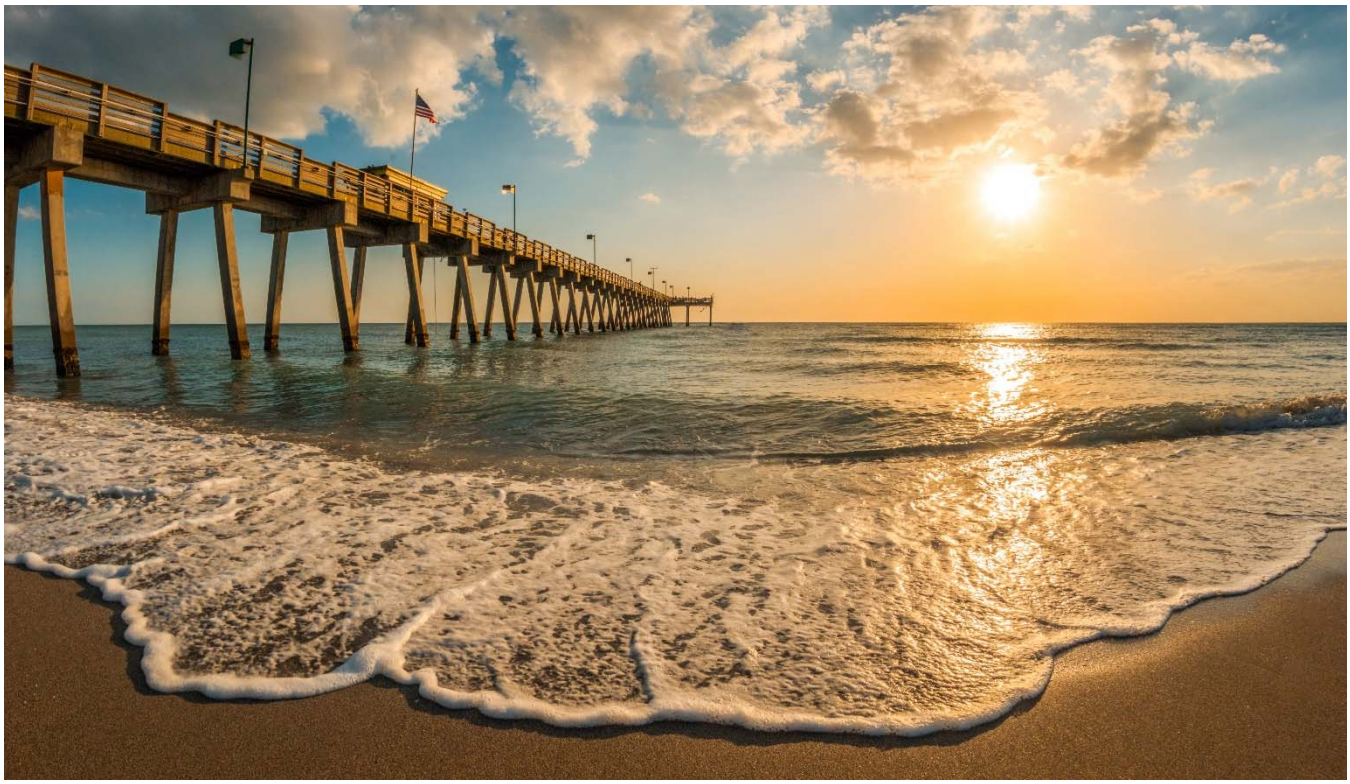
KEY PERSONNEL EXPERIENCE

The following table highlights the qualifications and experience of our team members, as well as the office location for each.

		YEARS OF EXPERIENCE	EDUCATION	PROFESSIONAL REGISTRATION
	**RAFAEL FRIAS** Client Services Director	21 Total 19 with Black & Veatch Sunrise, FL	M.S., Civil Engineering B.S. Biological Engineering	PE - 2004, FL, 61912
	**ANDY WESTFALL** Client Manager	29 Total 29 with Black & Veatch Tampa, FL	B.S., Civil Engineering	PE – 1994, FL, 47693
	**AMANDA SCHWERMAN** Assistant Client Manager	13 Total 5 with Black & Veatch Tampa, FL	M.S., Environmental Science and Engineering B.S., Engineering	PE – 2010, FL, 70751 Envision™ Sustainability Professional
	**MARK MARTIN** Quality Control	29 Total 29 with Black & Veatch Fort Myers, FL	B.S., Civil Engineering	PE – 2007, FL, 67272
	**MIKE MCGEE** Project Manager	27 Total 1 with Black & Veatch Fort Myers, FL	M.S., Civil Engineering B.S., Mechanical Engineering	PE - 2007, FL, 67272
	**STEVE KING** Project Manager/ Permitting	18 Total 11 with Black & Veatch Tampa, FL	B.S., Chemical Engineering	PE – 2012, FL, 74954
	**NICK ECKHARDT** Facility Design/ Prestressed Tanks	14 Total 11 with Black & Veatch Tampa, FL	B.S., Civil Engineering A.A., General	PE – 2009, FL, 69144
	**BOBBY BURCHETT** Pump Design/ Optimization	18 Total 18 with Black & Veatch Tampa, FL	B.S., Civil Engineering	PE – 2006, FL, 64762 Envision™ Sustainability Professional
	**RON PARKER** Water Quality	37 Total 10 with Black & Veatch Tampa, FL	B.S., Education A.A., General	Certified Class IV Water Supply Operator, State of Kansas, 1982
	**RICHARD TAYLOR** Electrical/I&C/SCADA	42 Total 17 with Black & Veatch Tampa, FL	B.S., Electrical Engineering	PE – 1983, FL, 33376 PE – 1981, GA, 13031

		YEARS OF EXPERIENCE	EDUCATION	PROFESSIONAL REGISTRATION
	**VASU VEERAPANENI** Water Treatment Process/ RO Membranes	26 Total 18 with Black & Veatch Kansas City, MO	Ph.D., Environmental Engineering M.S., Environmental Engineering	PE - KS, 17283
	**RYAN ECK** Civil/Mechanical/Site	7 Total 5 with Black & Veatch Tampa, FL	B.S., Civil Engineering	PE - FL, 82333
	**MIKE TACHE** Facility Design	9 Total 9 with Black & Veatch Tampa, FL	M.S., Environmental Engineering B.S., Civil Engineering	PE - 2011, FL, 83893
	**BRAD VANLANDINGHAM** Structural	32 Total 32 with Black & Veatch Orlando, FL	B.S., Civil Engineering	PE - 1991, FL 44795
	**DENNIS TRUPKA** Architectural	39 Total 28 with Black & Veatch Kansas City, MO	B.A., Architecture	RA - FL
	**MICHELLE ROTH** HVAC	37 Total 19 with Black & Veatch Kansas City, MO	B.S., Mechanical Engineering	PE - NC, SC, MD LEED with Specialty, BD+C
	**CHAD BARKER** Cost Estimating	27 Total 1 with Black & Veatch Orlando, FL	B.S., Civil Engineering	FL - Underground Utility and Excavation Contractor #CUC057098
	**DANNY CASHWELL** Construction Inspection	17 Total 5 with Black & Veatch Dania Beach, FL	Industrial Maintenance	N/A
	**RYAN BAKER** Acoustical Modeling	16 Total 11 with Black & Veatch Omaha, NE	B.S., Agricultural Engineering	N/A
	**AJAY KASARABADA** Air Permitting	21 Total 19 with Black & Veatch Overland Park, KS	M.S., Environmental Engineering B.S., Chemical Engineering	PE - 2001, MI, 6201048091
	**ED VOGT** Chemical Feed	24 Total 24 with Black & Veatch Kansas City, MO	B.S., Chemical Engineering	PE - 2012, NY, 090419 PE - 2004, AZ, 40453

Resumes



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Rafael Frias, P.E.

CLIENT SERVICES DIRECTOR

Mr. Frias serves as a Client and Project Director with the global water business of Black & Veatch Corporation and is responsible for the management of the Company's operations in Florida and the Caribbean. Rafael specializes in the management of water resources projects, including water supply, water treatment (which includes RO, High Service Pumping, Ground Storage and chemical treatment), hydropower and stormwater planning and design. Rafael is a national Board member of the American Water Resources Association (AWRA), and an active member of the Water Environment Federation (WEF) and American Water Works Association (AWWA), for which he as published papers and delivered presentations on comprehensive water resources issues, including sustainable water planning, surface water management, water treatment technologies, aquifer storage and recovery (ASR) and small hydropower.

City of Fort Myers | Engineer of Record for RO WTP; Fort Myers, FL

Client Director. Responsible for managing multiple, various projects at the City's 13 mgd brackish reverse osmosis water treatment plant. Projects included geophysical logging of existing water supply wells, rehabilitation of water supply wells, replacement of chemical storage tanks, detailed analysis of the RO WTP and development of a plan for future upgrades and maintenance needs and renewal of deep injection well permit.

City of Fort Myers | East Booster Pump Station; Fort Myers, FL

Client Director. Responsible for management of the project, client meetings and also help with hydraulic design and stormwater design. This new East Booster Pump Station water storage tank and booster pump station facility will provide pressure boosting capability for peak demand and fire flow conditions to serve the rapidly developing southeastern service area of the City of Fort Myers.

City of Hollywood | Energy Efficiency Master Plan; Hollywood, FL

Senior Project Manager. Black & Veatch developed a comprehensive Energy Efficiency Master Plan for the City of Hollywood's Water and Wastewater systems and facilities. The master plan resulted in an implementation plan for 20 recommended energy cost savings projects and strategies with a net positive value of $4.4 million to the City over the life of the improvements. Specific tasks included: development of an existing energy use baseline for the City's water and wastewater facilities and equipment; evaluation of the current and potential alternate electric utility rate structures at each facility; energy efficiency assessments; operations optimization evaluation for the raw water supply, treatment and potable water distribution systems; feasibility assessment for the development of renewable energy sources, including solar PV; development and analysis of over 50 energy conservation measures; development and use of an "Energy Project Decision Cash Flow Model;" and completion of a Master Plan Report that provides a roadmap for the City to implement the recommended energy cost savings projects and strategies over the planning horizon.

SPECIALIZATION:
Water Resources, Stormwater and Water Treatment Systems

Office Location
Sunrise, FL

Education
MS, Civil Engineering, University of Kansas, December 2002

BS, Biological Engineering, Louisiana State University, December 1997

Professional Registration
PE – 2004, FL, 61912
PE – 2011, PR, 24726
PE – 2003, KS, 17469

Professional Associations
- American Water Resources Association
- Water Environmental Federation
- American Water Works Association
- WateReuse – Florida

Year Career Started
1997

Year Started with B&V
1999

Our systematic and holistic approach to energy master planning resulted in the identification and evaluation "best fit" energy conservation measures (ECMs) for a combined annual energy savings of approximately 7 GWh, or 15% of the Utilities Department total energy use.

Tampa Bay Water | Seawater Desalination Facility Modifications; Tampa, FL

Project Engineer. Completed and managed a construction schedule in Microsoft Office Project for modifications to the Tampa Bay Seawater Desalination Facility, the largest reverse osmosis (RO) – membrane based desalination facility in the U.S. Modifications to the 25-mgd RO facility include the addition of unit processes including pre-treatment, filtration, post-treatment, and solids treatment.

Hillsborough County | New Chemicals Facility at the Fawn Ridge Water Treatment Plant; Tampa, FL

Project Manager. Responsible for management of the design and construction of the addition of a new chemical facilities at the Fawn Ridge Water Treatment Plant; additional chemical storage provided includes sodium hypochlorite, sodium hydroxide, fluoride and phosphate. Pumps, piping and spill containment protection were provided for all chemicals. Based on chemical properties, storage requirements and site characteristics, the improvements include one large chemical building and smaller buildings throughout the site. Performed a study to evaluate site layout alternatives and provided recommendations during the conceptual design level. For the selected alternative, led the completion of preliminary design, detail design and bidding-phase services.

PRASA | Lago Cidra Dam and Candelas Pump Station Rehabilitation; Puerto Rico

Principal in Charge. During the past five years, evaluations of the Lago Cidra Dam and Candelas Pump Station (PS) revealed varying degrees of deterioration within the mechanical and electrical components of each facility. Significant rehabilitation efforts are required to restore these facilities to acceptable operation. Responsible for the successful preparation of preliminary and final design documents for the rehabilitation of the Lago Cidra Dam Wet Well and Dry Well and Candelas Pump Station. Design services include civil-structural improvements, hydro-mechanical equipment, electrical and I&C, as well as bid phase and construction phase services.

MDWASD | Hydraulic Modeling in Support of Planning Activities; Miami, FL

Project Director. Black & Veatch completed multiple capacity studies initiated by the Miami-Dade Water & Sewer Department's (Department) Planning Division. The services being performed include: Water and Wastewater Capacity Analyses Orientation; Water Hydraulic Model Operation and Maintenance using the Department's existing distribution system model (InfoWater); and Collection System Capacity Analyses using the Department's existing collection system model (Infoworks CS).

MDWASD | Hialeah WTP Feasibility Study; Miami, FL

Project Director. Supported the development of a feasibility study for the decommissioning of the Hialeah WTP and redirecting of flows to the Preston WTP. The evaluation included an analysis of the existing treatment processes and system hydraulics at the Hialeah and Preston WTPs to determine the viability of decommissioning the Hialeah WTP. The results of the study included modifications required to transfer all of the process treatment to the Preston WTP. The evaluation included the development of capital and operations and maintenance costs for the improvements that would be required for decommissioning of the Hialeah WTP.

Andy Westfall, P.E.

CLIENT MANAGER

Andy is a Project Manager with 29 years of experience successfully managing and executing water, wastewater and reclaimed water projects. His experience includes master planning, engineering evaluations, detailed design, permit acquisition, and construction administration for a wide range of municipal water, wastewater, and reclaimed water projects. The projects have included the design of RO WTP projects, RO WTP studies, Ground Storage Tank installations and High Service Pump Station design and construction management.

PROJECT EXPERIENCE

City of Dunedin| Dunedin RO WTP Refurbishment; Dunedin, FL

Project Manager. Managed all aspects of the Progressive Design-Build project consists of an extensive piloting program including media filtration, polymeric UF, ceramic UF and RO systems. The piloting was used to design the equipment refurbishment and various process changes at the 9 mgd brackish water plant. The changes include rehabilitation of media filters, conversion from chlorine gas to sodium hypochlorite, new RO process skids and CIP system, new RO High Pressure Pumps, new solids handling facility, new and expanded electrical facilities, yard piping, refurbishment of existing Ground Storage Tanks and upgrades to numerous ancillary processes.

Peace River Manasota Regional Water Supply Authority | 1991 Facility Rebuild; Punta Gorda, FL

Project Manager. Managed all aspects of the study, design, permitting and construction phase services to support the implementation of widespread improvements to the Peace River Facility Treatment Trains 1 and 2. Improvements include structural, mechanical, process, chemical feed, electrical, and instrumentation upgrades to replace aging infrastructure as well as incorporate operational enhancements.

City of Fort Myers | Engineer of Record for Water Treatment Plant; Fort Myers, FL

Project Manager & Project Director. Responsible for managing multiple, various projects at the City's 13 mgd brackish reverse osmosis water treatment plant. Projects included geophysical logging of existing water supply wells, rehabilitation of water supply wells, design and construction of new water supply wells, chemical system improvements, RO process optimization evaluation and renewal of deep injection well permit.

City of Venice | RO WTP Efficiency Study; Venice, FL

Project Manager. Responsible for the management of the RO WTP Efficiency Study for the City of Venice. The study focused on the plant's ability to increase the recovery to 75% from the current 50%.

SPECIALIZATION:
Project Management, Water, Wastewater, and Reclaimed Water Facilities

Office Location
Tampa, FL

Education
BS, Civil Engineering, University of Texas at Austin, 1989

Professional Registration
PE - 1994, Florida, 47693

Professional Associations
- Water Environment Federation
- Florida Water Environmental Association

Year Career Started
1989

Year Started with B&V
1989

The tasks included: review of available technologies to increase recovery, drafting a plan to test the technologies, cost opinions for the various selected options, review of flood zone implications, design and operation of a skid-mounted RO pilot unit designed to model the existing plant at 75% recovery.

City of Venice | Water System Master Plan Update; Venice, FL

Project Manager. Responsible for managing all aspects of: field data collection, population and demand projections, water supply and treatment capacity, model update and calibration, hydraulic analysis, water age and chlorine residual correlation, water quality evaluation, CIP planning and master plan documentation. The Water System Master Plan was focused on maintaining a reliable and robust water system with adequate capacity to accommodate future growth.

Peace River Manasota Regional Water Supply Authority | Energy Optimization; Arcadia, FL

Project Manager. Managed all aspects of the project which consisted of a detailed review of the PRMRWSA Water Treatment Facility energy consumption and development of potential energy management opportunities. The Facility consists of a 51 mgd conventional surface water treatment process, a 500 MG reservoir, a 6 BG above ground reservoir, Peace River intake pump station, reservoir aeration systems, 21 ASR wells, high service pumps and numerous ancillary systems. Project consisted of reviewing of the Facility's current power utility rate structure, development of an energy baseline tool of all the Facility's energy consuming equipment and business case evaluations to support recommended energy optimization strategies.

Hillsborough County | South County Booster PS Water Transmission Main; Hillsborough County, FL

Project Manager. The project includes route evaluation, surveying, geotechnical investigation, public involvement, design, environmental permitting, bidding services, CPS services, and construction inspection services for a new potable water transmission main. The main includes approximately 8,500 linear feet of pipeline up to 30" diameter installed by open cut and approximately 1,300 linear feet of water main installed in a 48-inch casing installed via micro-tunnel.

City of St. Petersburg | Oberly and Washington Terrace Pumping Station Improvements; St. Petersburg, FL

Project Manager. Performed detailed design, permitting, bidding services, and construction administration services for improvements to the City's 80 mgd Oberly P.S. and 45 mgd Washington Terrace P.S. Improvements include addition of pump VFDs, replacement of emergency engine-generators, replacement of pump switchgear, new SCADA system, building renovations, and related improvements. Assisted the City with procurement of long lead time engine generator equipment. Previously responsible for engineering evaluations to assist the City in selecting the optimal set of beneficial improvements, as well as preparation of Basis of Design Reports.

Hillsborough County | Fawn Ridge WTP Chemical Feed Improvements; Tampa, FL

Project Manager. Under this project, a major upgrade was made to the Fawn Ridge WTP to accommodate an increase in plant production from a new water supply source. Improvements included, a new sodium hypochlorite storage & feed building, new analyzer buildings, addition/replacement of metering pumps throughout the facility, and enhanced chemical feed controls. The project included improvements to sodium hypochlorite, ammonia, fluoride, caustic, and polyphosphate chemical systems. Services provided by Black & Veatch included alternatives evaluation, preliminary and detailed design, permitting, bidding services, construction phase services, and construction inspection.

Amanda Schwerman, P.E., ENV SP

ASSISTANT CLIENT MANAGER | HYDRAULIC ANALYSIS | ENERGY OPTIMIZATION

Ms. Schwerman's experience is focused on water and wastewater-related planning projects. Her expertise lies in water and wastewater hydraulic modeling, but she has experience with process/mechanical design as well. She is involved with professional societies including chairing the WEF Collections System Committee's workshop group, working on the WEF Envision Taskforce, participating with AWWAs Engineering Modeling Applications Committee (EMAC) and M32 Updates, is a Trustee and the Membership Chair for WateReuse Florida and is a certified Envision Sustainability Professional.

PROJECT EXPERIENCE

City of Venice | Water System Master Plan Update; Venice, FL

Planning Manager. Responsible for: travel and execution of field data collection, gathering data for and completing population and demand projections, water supply and treatment capacity modeling, water system model update and calibration, hydraulic analysis, water age and chlorine residual correlation, water quality evaluation, CIP planning and master plan documentation. Also completing the final report and documentation of all the results of the analysis. The Water System Master Plan focused on maintaining a reliable and robust water system with adequate capacity to accommodate future growth.

City of Tampa | Potable Water Master Plan; Tampa, FL

Engineering Manager & Lead Modeler. Responsible for executing the potable water master plan and deliverables. The project included: updating and calibrating the existing hydraulic model using InfoWater, distribution analysis and improvements for four planning years (2015, 2020, 2025, and 2035), pumping and storage facility capacity assessments, resiliency and reliability assessments, asset management program development, risk based pipeline prioritization using InfoMaster, capital improvement program and Master Plan documentation. The City of Tampa distribution service area serves a population of approximately 610,000 people across 1 pressure zone at an average day demand of approximately 70 mgd. The distribution system includes one water treatment plant, five repump stations with tanks and several interconnections with Hillsborough County and Tampa Bay Water.

Pinellas County | Water and Sewer Optimization Study; Pinellas County, FL

Engineering Manager. The County has embarked upon an Optimization Program for its water, sewer and reclaimed water systems that involves using the "Envision Process", which is an in-depth guidance and rating system used to assess and improve the sustainability metrics of infrastructure projects. The Program initially involved a comprehensive optimization study of the assets associated with or affecting the South Cross Bayou Water Reclamation Facility (SCBWRF).

SPECIALIZATION:
Water and Wastewater Systems

Office Location
Tampa, FL

Education
MS, Environmental Science and Engineering, Colorado School of Mines
BS, Engineering, Colorado School of Mines 2005

Professional Registration
PE – 2010, FL, #70751
Envision™ Sustainability Professional

Professional Associations
- American Water Works Association
- Water Environmental Federation
- Florida Water Environment Association
- WateReuse Association

Year Career Started
2005

Year Started with B&V
2013

The objectives of the optimization study include, but were not limited to, reducing energy use, reducing O&M costs, process optimization and technology improvements, and triple bottom line sustainability (economic, environmental, and social) of the facility. The COUNTY is responsible for operating and maintaining the water, sewer, and reclaimed water systems within the designated service areas under the jurisdiction of the Pinellas County Florida Board of County Commissioners. Over three billion dollars in assets are included in the water and sewer systems.

Gwinnett County Department of Water Resources | Hog Mountain Pump Station Surge Analysis; Gwinnett County, GA

Project Manager/Lead Modeler. Provided professional services to GCDWR to perform a surge (a.k.a. transient) analysis of the existing Hog Mountain Pump Station (sewer) and force main system using Bentley's HAMMER. The primary objective of the project was to assess whether the existing surge control equipment (surge tank, surge valve, and combination air/vacuum valve along the force main) will provide adequate surge pressure control following an emergency (i.e. power loss) pump stop condition. The Hog Mountain PS is an existing triplex sewer pump station with 1.6 miles of 20-inch force main, a 2,640 gallon bladder surge tank, a surge relief valve, three air relief valves (ARV) and one combination air/vacuum valve. Each pump will be equipped with a swing check valve installed on the discharge piping which instantaneously closes when flow stops.

Tampa Bay Water | Long-Term Master Water Plan & Program Feasibility; Pinellas, Pasco and Hillsborough Counties, FL

Project Engineer. Responsible for the potable reuse feasibility tasks. Tampa Bay Water (TBW) is required to update their Long-Term Master Water Plan (LTMWP) every five years. The most recent LTMWP prior to this project was completed and approved in December 2013 and included a Feasibility Program recommendation. This project included updating both the Feasibility Program and the LTMWP, to evaluate the Board approved projects listed in the 2013 LTMWP and to narrow down the project list to one of more projects that will meet the region's drinking water demand once the demand forecast indicates more supply is needed. In addition to the Board approved projects, several potable reuse projects were included. Black & Veatch was a subconsultant to Hazen & Sawyer. The following lists the projects evaluated:

- Gulf Coast Desalination
- Seawater Desalination Expansion (with & without potable reuse)
- Thonotosassa Wellfield
- Aquifer Recharge Project
- Surface Water System Expansion
- South Hillsborough County Indirect Potable Reuse Wellfield
- Tampa Bypass Canal Augmentation with Potable Reuse

Greenville Water | Master Water Plan; Greenville, SC

Distribution System Evaluation Task Lead / Modeler. Distribution system tasks included: performance criteria development; population, growth, and demand projections; all-pipes hydraulic model build from GIS; hydraulic model update and calibration/verification using WaterGEMS software; pressure zone delineation assessment; system capacity assessments for normal and fire flow demand conditions and pumping, storage, and pipeline improvement alternatives; asset management assessments of condition and criticality for pumping and storage facilities; system monitoring and SCADA assessments; prioritize CIP projects through the year 2040; development of CIP and financial forecasting tool; and master plan report. Project also included a water treatment evaluation.

Mark Martin, P.E.

QUALITY CONTROL

Mr. Martin has a depth of experience in a variety of engineering projects, including water (RO WTPs) and wastewater treatment plants, High Service Pump Stations, Ground Storage Tanks and pipelines. His involvement in these projects has included feasibility studies, preliminary and final facility design, permitting and construction services. His vast experience has also included performing QA/QC checks for designs ranging from water to wastewater all to ensure high quality projects are produced.

PROJECT EXPERIENCE

City of Fort Myers | Engineer of Record for Water Treatment Plant; Fort Myers, FL

Project Manager. Responsible for managing multiple, various projects at the City's 12 mgd RO water treatment plant. Projects included geophysical logging of existing water supply wells, rehabilitation of water supply wells, replacement of chemical storage tanks, chemical system improvements, new water supply wells, RO system evaluation and facility planning and renewal of deep injection well permit.

Peace River Manasota Regional Water Supply Authority | Peace River Facility 1991 Rebuild; Arcadia, FL

Engineering Manager. Responsible for preliminary and final design of water treatment improvements at the 51 mgd Peace River Facility. Design included repair of all concrete structures, equipment for the solids contact units, replacement of filter media, wash water troughs and surface wash system in the filters, replacement of all piping and valves, new transfer pump, new high service pumps, new chemical feed systems and a new prestressed concrete ground storage tank. Also, served as resident engineer during construction.

Tampa Bay Water | Regional Facilities Site Repump Station; Brandon, FL

Project Engineer. Responsible for design of improvements at the repump station for the 66 mgd Regional Facilities Site. Improvements included piping and valve modifications to convert the repump station to a booster station to supply 66 mgd and greater flows from the C.W. Bill Young Regional Reservoir under a greater range of conditions.

Tampa Bay Water | Cypress Creek Water Treatment Plant; Pasco County, FL

Project Engineer. Responsible for design of upgrades to six pump assemblies at the existing high service pump station at the Cypress Creek Water Treatment Plant. Pump system upgrades included replacement of the suction butterfly valve, discharge butterfly valve, discharge check valve and discharge modulating ball valve.

City of Fort Myers; East Booster Pump Station; Fort Myers, FL

Project Manager. Management of the design and project execution of the New East Booster Pump Station water storage tank and booster pump station facility. Tasks included site investigations: including geotechnical and survey and SUE.

SPECIALIZATION:
Water and Wastewater Systems

Office Location
Fort Myers, FL

Education
BS, Civil Engineering, Michigan Technological University, 1987

Professional Registration
PE - 2007, FL, 67272
PE - 1992, MI, 038222

Professional Associations
- American Water Works Association
- Water Environment Federation

Year Career Started
1987

Year Started with B&V
1987

A preliminary design report was completed and the optimal size for the tank was determined to be 2.5 MG for this new 4 mgd capacity potable water pump station facility. The tank will be a 106-foot diameter pre-stressed concrete water storage tank and the booster pump station will include 3 horizontal split case centrifugal pumps that will provide a firm peak hour pumping capacity of 2,858 GPM. Each of the 60 HP pumps are designed for 1,450 GPM capacity and will be located inside a new 30' X 72' pump station building that has been sized to include an MCC building to ensure the electrical equipment and VFD's are protected.

City of Kannapolis | Finished Water Pumps; Kannapolis, NC

Engineering Manager. Responsible for design of 2 finished water pumps and piping improvements in the high service pumping station at the 13.15 mgd Kannapolis WTP.

City of Fort Myers | East Water Reclamation Campus; Fort Myers, FL

Engineering Manager. Responsible for planning, conceptual design, preliminary design and final design of new 8 mgd water reclamation facility. The new water reclamation facility will include influent pump station, fine screening, grit removal, moving bed biofilm reactors, dissolved air flotation, tertiary filtration and hypochlorite disinfection. Planning for the entire campus also includes remediation of a former city landfill, a new public works nursery, green space for a future park, an indigenous preserve area, reclaimed and reject water storage, influent sewers, reuse water pipelines and deep injection wells for effluent disposal.

Tampa Bay Water | Morris Bridge Water Treatment Plant; Tampa, FL

Project Engineer. Responsible for design of yard piping improvements at the Morris Bridge Water Treatment Plant. The yard piping improvements provided a bypass of the water treatment process and directly connected the plant influent pipe to the finished water pipe at the storage reservoirs.

Collier County | South County Regional Water Treatment Plant, Lime Slaker Replacement; Naples, FL

Project Manager. Responsible for the development of design documents for the installation a new paste lime slaker at the 32 mgd South County Regional WTP. Design included the replacement of an existing lime slaker and demolition of the existing lime slurry pit. The lime slurry pit was replaced by a new lime slurry pump so that lime slurry was hard piped all the way to the feed point.

Florida Keys Aqueduct Authority | Cudjoe Key Advanced Water Reclamation Facility; Cudjoe Key, FL

Engineering Manager. Responsible for re-design, bid and construction assistance services for the 0.94 mgd Cudjoe Key AWRF. The new facility is being constructed on a former landfill site and includes an operations building, influent screening facilities, flow equalization basins, 5-stage biological nutrient removal, secondary clarification, tertiary filtration, chlorine disinfection and shallow injection well disposal.

Lee County | Fort Myers Beach Wastewater Treatment Plant, Odor Control Improvements; Fort Myers Beach, FL

Project Manager. Responsible for preliminary and final design of odor control improvements at the 6.0 mgd Fort Myers Beach WWTP. Odor control improvements include a bio-trickling filter, carbon scrubber, blowers and duct work connected to the pre-treatment building and aeration splitter box.

City of Cape Coral | Reclaimed Water Transmission Main; Cape Coral, FL

Project Manager. Overall responsibility for feasibility study report to construct a reclaimed water transmission main, beneath the Caloosahatchee River, to provide reclaimed water to the City of Cape Coral from the City of Fort Myers South AWWTP. The feasibility study report included an evaluation of potential pipeline routes, pipeline construction methods, connection options to the existing reclaimed water system, an environmental assessment, a geotechnical investigation program and a review of applicable codes and permits.

Mike McGee, P.E., BCEE

PROJECT MANAGER

Over 27 years of progressively increasing responsibility/experience in process design, contract administration, construction management, and business development activities with water treatment plants, water distribution systems, reclaimed water distribution systems, pumping stations and storage facilities, wastewater treatment plants, and wastewater collection systems in the United States.

PROJECT EXPERIENCE

City of Fort Myers; East Booster Pump Station; Fort Myers, FL

Engineering Manager. Responsible for all aspects of the detailed preliminary site assessment, design, permitting and construction of the new East Booster Pump Station water storage tank and booster pump station facility. The system will provide pressure boosting capability for peak demand and fire flow conditions with a 2.5 MG pre-stressed concrete water storage tank and 4 mgd potable water booster pump station. The booster pump station will include 3 horizontal split case centrifugal pumps that will provide a firm peak hour pumping capacity of 2,858 GPM. Each of the 60 HP pumps are designed for 1,450 GPM capacity and will be located inside a new 30' X 72' pump station building that has been sized to include an MCC building to ensure the electrical equipment and VFD's are protected.

Lee County Utilities; Pinewoods Master Pump Station; Estero, FL

Sr. Project Manager & Design Engineer. Led all aspects of final design, permitting, and construction phase support services for this large $1.6M triplex master wastewater lift station that is being constructed at the LCU Pinewoods WTP site and which will be dedicated to LCU. This 12' diameter 25-foot deep master lift station includes three 105hp submersible wastewater pumps rated for approximately 2,000 gpm each and equipped with VFD's as well as a submersible wetwell mixer. Design incorporated various features for LCU including odor control, emergency generator, electrical building, and pump flow and wetwell level controls and associated instrumentation and SCADA.

Collier County; NCWRF Irrigation Quality Pumping Station; Naples, FL

Lead Design Engineer. NCWRF Irrigation Quality (IQ) Pumping Station preliminary design that will ultimately distribute 100% of the future (2020) planned reuse capacity of the County's NCWRF. Maximum pumping capacity of 64 mgd at 100 psi will be achieved using eight 400 hp pumps each having 5,555 gpm capacity. Preliminary design included pumps with VFDs for flow and pressure control, and creative intake bays and fine screens to ensure reliable pumping from the shallow reuse ponds which have historically been plagued with algae. The design included provisions for improving the storage ponds circulation and water quality and included screening and pressure filtration on the pump discharge to remove algae as the source water is stored in shallow open ponds.

WATER BOOSTER PUMP STATION

SPECIALIZATION:
Horizontal Directional Drilling; All aspects of Utility Engineering Design, Permitting, and Construction of Water, Wastewater, Reclaimed Water Utilities; Utilities Pipelines in FDOT ROW

Office Location
Fort Myers, FL

Education
MS, Civil Engineering , Environmental, Auburn University, 1998
Bachelor of Science, Mechanical Engineering, United States Naval Academy, 1984

Professional Registration
PE - 2007, FL, 67272
PE - 1992, MI, 038222

Professional Associations
- American Water Works Association
- Water Environment Federation

Year Career Started
1991

Year Started with B&V
2018

Greater Pine Island Water Association, Inc.; Center Pump Station Improvements; Pine Island, FL

Project Manager & Design Engineer. Led all aspects of design, permitting, bidding, and construction phase support services for the complete replacement of the aging potable water booster pumps at the Center Pump Station. The project involved replacement of four existing 50-year old pumps with two new VFD booster pumps, complete upgrade of electrical and instrumentation systems, and conversion of a portion of the pump room building into a dry storage room.

Peace River Manasota Regional Water Supply Authority; PRMRWSA PRF WTP 1991 Rebuild; Arcadia, FL

Sr. Project Manager & Civil Design Lead Engineer. Provided the design, permitting, bidding, and construction phase services for the PRMRWSA PRF WTP 1991 Rebuild project. Led all aspects of civil and structural rehabilitation improvements to treatment trains No. 1 and No. 2 and associated High Service Pump Station and replacement Finished Water Storage Tank upgrades for this 48 mgd regional surface WTP which has been in continuous operation since the late 1970's. Led the development of contract documents for repair and resurfacing of deteriorated concrete structures and modifications to chemical piping systems and associated double-containment systems for this WTP rebuild project.

Charlotte County Utilities; Regional Reclaimed Water System; Port Charlotte, FL

Project Manager and Design Engineer. Led all aspects of design, permitting, and construction phase services for this $10M reclaimed water (RW) transmission main project encompassing two intermediate RW booster pumping and RW ground storage tank facilities that included hypochlorite chemical feed and pressure filtration features and over 16 miles of transmission main and bulk RW metering facilities. Managed $1.4M in engineering fees, including construction management services for 3 separate construction contracts.

City of Fort Myers; Central AWWTP Trunk Main Replacement; Fort Myers, FL

Sr. Project Manager & Design Lead. Led all aspects of detailed design, permitting, and construction phase services for this $22 million sanitary sewer trunk main replacement project which involved construction of over 9,500 linear feet of 42" and 36" gravity sewer piping and 61 large diameter manholes, one upsized master wastewater lift station with VFD's rated for over 3,300 gpm; over 2,900 linear feet of 36" wastewater force main piping; over 6,900 linear feet of new 12"/8" potable water piping transmission mains. The capacity of the upsized sanitary sewer trunk main is for up to 10.7 mgd of dry season flows that will be redirected to the Central AWWTP from the South WWTP to maximize reuse during the dry season, including the anticipated future flows from various Downtown Redevelopment projects. Project also included two separate 36" diameter wastewater force main directional bores under the Seminole Gulf Railroad along Palm Avenue and Market Street. The pipeline construction phases are complete, and construction continues with the master LS under phase 3 of this CMAR project.

Peace River Manasota Regional WSA; 66" X 48" PRF WTP Raw Water Interconnect; Arcadia, FL

Sr. Project Manager & Design Engineer. As recommended in Condition and Reliability Assessment of the PRF WTP's forty-year old 54 mgd Reservoir Pump Station, performed the detailed design, bidding, permitting, and construction phase administration of the 66" X 48" diameter Raw Water Interconnect pipeline that provides reliable raw water gravity supply to the WTP directly from Reservoir #2 as a backup to the Reservoir Pump Station. Design and construction of this new pipeline interconnect included provisions for a tie-in to a 66" steel transmission main and major shoring and dewatering provisions that were successfully conducted over 21 feet below-grade.

Nick Eckhardt, P.E.

FACILITY DESIGN | PRESTRESSED TANKS

Mr. Eckhardt has over 14 years of experience of commercial and municipal water and wastewater treatment facilities, and is currently responsible for multiple water and wastewater projects with Black & Veatch. In this capacity, he is responsible for a diverse range of utility projects including: studies, preliminary design, detailed design, permitting, construction administration, site inspections and certifications, and quality assurance/ quality control. These projects have included work at many water treatment plants and have included Ground Storage Tanks, High Service Pump Stations, piping and all other aspects of water treatment plants.

PROJECT EXPERIENCE

City of Fort Myers; East Booster Pump Station; Fort Myers, FL

Engineering Manager. Completed design documents and helped lead and coordinate all disciplines including structural, mechanical, HVAC, civil site and electrical. The optimal size for the tank was determined to be 2.5 MG for this new 4 mgd capacity potable water pump station facility. The tank will be a 106-foot diameter pre-stressed concrete water storage tank and the booster pump station will include 3 horizontal split case centrifugal pumps that will provide a firm peak hour pumping capacity of 2,858 GPM. Each of the 60 HP pumps are designed for 1,450 GPM capacity and will be located inside a new 30' X 72' pump station building that has been sized to include an MCC building to ensure the electrical equipment and VFD's are protected.

JEA | Main Street WTP; Jacksonville, FL

Project Engineer. This water plant modification project was delivered design-build. Responsible for preliminary design, bidding, permitting and construction phase services associated with a new 3-million gallon ground storage tank and an ozone system for hydrogen sulfide treatment. The existing 100 year-old reservoir was replaced with a new pile supported pre-stressed concrete tank. Preliminary design included study of treatment technologies for hydrogen sulfide removal, and cost comparison between ozone and packed towers. Construction phase included RFIs, Submittals, and final permit certification services.

St. Johns County Utility | Southground Booster Pump Station; St. Augustine, FL

Project Engineer. Responsible for the rehabilitation design of the existing Southgound booster pump station. Design includes reviewing the existing structures and as-built drawings to determine the best manner to rehabilitate the station. Additional responsibilities include coordinating the electrical, Instrumentations/Controls, and structural disciplines; as well permitting.

WATER BOOSTER PUMP STATION

SPECIALIZATION:
Water and Wastewater Systems

Office Location
Tampa, FL

Education
BS, Civil Engineering, University of North Florida, April 2004
AA, General, St. Johns River Community College, Dec. 2000

Professional Registration
PE - 2009, FL, 69144

Professional Associations
- American Society of Civil Engineers
- American Water Works Association
- Florida Swimming Pool Association

Year Career Started
2004

Year Started with B&V
2007

Orange County Utilities | Group "5B" Master Pump Stations Replacement/Rehabilitation; Orlando, FL

Project Engineer. Project involved improvements to five master pump stations including new wetwells, pumps, piping, generator, odor control, electrical and instrumentation equipment, and site work. Pump stations range from a duplex with 250 gpm pumps to 6 pump-stations with 1,500 gpm pumps. Design incorporates concepts to maintain existing pump station services and minimizes the need for bypass pumping. Responsibilities include preparation of preliminary report presenting improvement alternatives, basis of design memorandum, detailed design plans and specifications, Bid Phase services, and Construction phase services including as-builts and final certifications.

Orange County Utilities | Group "4A" Master Pump Stations Replacement/Rehabilitation; Orlando, FL

Project Engineer. Project involved improvements to five large master pump stations including new wetwells, pumps, piping, generator, odor control, electrical and instrumentation equipment, and site work. Pump stations range from triplex with 1,000 gpm pumps |47 hp) to 5 pump-stations with 1,500 gpm pumps |60 hp). Design incorporates concepts to maintain existing pump station services and minimizes the need for bypass pumping. Responsibilities include preparation of preliminary report presenting improvement alternatives, basis of design memorandum, and detailed design plans and specifications for all five stations. Additionally the project involved Bid Phase services, and Construction Phase services including as-builts and final certifications for three of the pump stations.

Pasco County Utilities | Cow Path Pump Station; Wesley Chapel, FL

Engineering Manager. The Cow Path Pump Station is a triplex station that will replace the existing aged triplex pump station on the site. The project included preliminary design work , detailed design drawings and specifications, bid submittal with bidding services, and construction phase services. Responsibilities include design, and management of all aspects of the design, permitting and construction including geotechnical, structural, electrical, I&C and mechanical. Project required FDEP Wastewater permitting and ERP Permit Exemption. The pumps station includes a 12-foot diameter, 21-foot deep wetwell with three chopper style pumps. Site layout also provided for future growth by adding additional manholes to split the flow to a future wetwell. Pumps designed are 125 Hp, able to provide 1,000 gpm at 232-ft TDH. The project also included value engineering and detailed cost opinions at 30%, 90%, and bid submittals.

Hillsborough County | South County Booster PS Water Transmission Main; Hillsborough County, FL

Engineering Manager. Duties included managing discipline engineers during design and completing the construction phase services for the project. The CPS services included managing a 24-hour a day construction oversight of the micro-tunnel installation. Also managing all the construction meetings and contract requirements to ensure the contractor met his obligations. The project includes route evaluation, surveying, geotechnical investigation, public involvement, design, environmental permitting, bidding services, CPS services, and construction inspection services for a new potable water transmission main. The main includes approximately 8,500 linear feet of pipeline up to 30" diameter installed by open cut and approximately 1,300 linear feet of water main installed in a 48-inch casing installed via micro-tunnel.

Tampa Bay Water | Eldridge-Wilde Wellfield Rehabilitation Project; Hillsborough/Pinellas County, FL

Engineering Manager. Duties included managing the design of the wellfield rehabilitation with new pumps and motors, discharge piping, well houses, site civil, permitting, electrical and I&C. The project involves the rehabilitation of 24 wells with new pumps, motors, discharge pipe, well houses and site civil improvements. Also, the project spans two counties and requires permitting from multiple agencies on both sides of the county line. The project included the hydraulic analysis of the pumps and piping to optimize the pump size selection.

Bobby Burchett, P.E., ENV SP

PUMP DESIGN | OPTIMIZATION

Mr. Burchett has over 17 years of experience providing engineering consulting services to municipal clients for a variety of water, wastewater and reclaimed water projects. His experience includes water and wastewater system planning; and detailed design, permitting and construction phase services for water and wastewater system infrastructure. He has extensive experience with water and wastewater system master planning studies, energy efficiency and management, hydraulic modeling, water quality modeling and pump station analysis and design. His experience includes studies and design at RO Water Treatment Plants and water plants / booster pump stations with Ground Storage and High Service Pumping.

PROJECT EXPERIENCE

City of Hollywood | Energy Efficiency Master Plan; Hollywood, FL

Energy Management Team Lead. Responsible for leading technical evaluations of energy efficiency improvement alternatives as part of the development of a comprehensive energy efficiency master plan for the City's Water, Wastewater, and Reclaimed Water Systems and Facilities. The master planning effort includes: electric utility rate analyses; industry benchmarking; development and use of an energy project decision cash flow model; energy assessments of facilities, equipment and infrastructure; renewable energy generation feasibility assessment; and business case evaluations to define and support recommended energy efficiency projects.

Tampa Bay Water | Eldridge-Wilde H2S Removal Facility and Pinellas County Points of Connection Updates; Tarpon Springs, FL

Project Manager. Responsible for the design, permitting, bidding and construction phase services for a variety of improvements to an existing 45 mgd groundwater supply and treatment facility and a new 60-inch diameter pipeline section to meter wholesale water supply flowrates up to 93 mgd. Improvements at the treatment facility include: process control enhancements for a packed tower aeration treatment process; SCADA and instrumentation and controls improvements to support remote monitoring and control capabilities; 36-inch and 42-inch diameter yard piping improvements; four new high service pumps with variable speed drives; tank improvements; miscellaneous electrical and civil site improvements; and installation of fiber optic communication lines for the wellfield.

City of Dunedin| Dunedin RO WTP Refurbishment; Dunedin, FL

Project Manager. Responsible for hydraulic analysis of the pumps and piping systems for the RO WTP refurbishment project. The 9 mgd brackish water RO plant's changes will include rehabilitation of media filters, conversion from chlorine gas to sodium hypochlorite, new RO process skids and CIP system, new RO high pressure pumps, new solids handling facility, new and expanded electrical facilities, yard piping, installation of baffles in the existing Ground Storage Tanks and upgrades to numerous ancillary processes.

WATER BOOSTER PUMP STATION

SPECIALIZATION:
Water and Wastewater System Planning, Energy Efficiency, Hydraulics, Hydraulic and Water Quality Modeling, and Pump Station Design

Office Location
Tampa, FL

Education
BS, Civil Engineering, Georgia Institute of Technology, 2000

Professional Registration
PE - 2006, Florida, 64762
Envision™ Sustainability Profesional

Professional Associations
- American Water Works Association

Year Career Started
2000

Year Started with B&V
2000

Tampa Bay Water | System Engineer; Pinellas, Pasco and Hillsborough Counties, FL

Project Manager. Desalination Facility. Assist in an effort to identify and assess operational and design issues associated with its 25 mgd seawater reverse osmosis desalination facility. This effort included critically assessing data generated in the pretreatment and membrane pilot plants constructed and operated by the prospective contractors and assessing the capability of their proposed treatment process trains to consistently achieve permeate water quality and quantity.

Tampa Bay Water | Morris Bridge Booster Station Expansion; Tampa, FL

Project Manager. Responsible for planning, permitting, design, and construction phase services for improvements to an existing 45 mgd pump station and groundwater treatment facility. Improvements include the addition of a 1000 HP vertical turbine pump, and numerous upgrades to the electrical, instrumentation and controls, and chemical feed systems.

City of Lakeland | Northeast Wellfield Energy Efficiency Project; Lakeland, FL

Project Engineer. Responsible for evaluating an existing wellfield supply system to identify pump and operational modifications to improve energy efficiencies. The evaluation resulted in low capital cost improvements that immediately provided a 30% improvement in the energy efficiency of the wellfield. The energy cost savings achieved provided a 1 year payback period on the capital costs for the well pump modifications that were made.

City of New Port Richey | Maytum WTP Transfer Pumping Station Improvements; New Port Richey, FL

Project Manager. Responsible for the planning, permitting, design and construction phase services for improvements to increase the hydraulic capacity of an existing 9 mgd transfer pump station system.

City of St. Petersburg | Oberly and Washington Terrace Pumping Station Improvements; St. Petersburg, FL

Project Engineer. Basis of Design Report for improvements at two high service pumping stations. Engineering tasks included: existing facility assessment, field pump testing, hydraulic modeling, defining recommended improvements, and development of a Basis of Design Report.

Tampa Bay Water | Transmission System Infrastructure Master Plan; Pinellas, Pasco and Hillsborough Counties, FL

Project Engineer. Engineer for identifying and evaluating transmission system infrastructure improvement needs through 2025. Responsibilities included hydraulic modeling, development and evaluation of transmission system improvement requirements, scheduling for recommended improvements, and cost estimating.

Tampa Bay Water | Eldridge-Wilde Wellfield Rehabilitation Project; Hillsborough/Pinellas County, FL

Project Manager. Duties included managing all aspect of the project from design, budget, scope, schedule and resource management. The project also involves a delay in the timing of construction which requires extra planning to maintain the project on budget. The project involves the rehabilitation of 24 wells with new pumps, motors, discharge pipe, well houses and site civil improvements. Also, the project spans two counties and requires permitting from multiple agencies on both sides of the county line. The project included the hydraulic analysis of the pumps and piping to optimize the pump size selection.

City of New Port Richey | Maytum WTP Transfer Pumping Station Improvements; New Port Richey, FL

Project Manager. Responsible for the planning, permitting, design and construction phase services for improvements to increase the hydraulic capacity of an existing 9 mgd transfer pump station system.

Richard Taylor, P.E.

ELECTRICAL | I&C | SCADA

Mr. Taylor has over 39 years of experience in project and construction management, design and implementation of process automation and control systems in water, wastewater, oil and gas, citrus, pulp and paper and petrochemical industries. Also, he has extensive experience with all aspects of electrical design, I&C and SCADA design for water treatment plants, including RO water plants and systems which include Ground Storage Tanks and High Service Pump Stations and other pumping improvements.

PROJECT EXPERIENCE

City of Dunedin| Dunedin RO WTP Refurbishment; Dunedin, FL

Electrical Engineer. Responsible for the electrical and I&C design and construction inspection for the process changes at the 9 mgd RO brackish water plant. The electrical changes include rehabilitation of electrical, instrumentation and controls to the following portions of the plant: dual media filters, chemical feed systems including a new sodium hypochlorite system, new RO process skids and new CIP system, new RO high pressure pumps, new solids handling facility, new and expanded electrical facilities, yard piping, updates to the Ground Storage Tanks and upgrades to numerous ancillary processes. Responsibilities also included electrical design and implementation of the pilot processes that were run to help determine the best process design.

Peace River Manasota Regional Water Supply Authority | 1991 Facility Rebuild; Punta Gorda, FL

Electrical Engineer. Responsible for the design and construction of the extensive electrical and I&C improvements that were required as part of the Peace River Facility Treatment Trains 1 and 2 refurbishments. The plant has a capacity of 12 mgd and the improvements include structural, mechanical, process, chemical feed, electrical, and instrumentation upgrades to replace aging infrastructure as well as incorporate operational enhancements. This included new electrical systems at new transfer pumps, high service pumps and a new ground storage tank.

Tampa Bay Water | Eldridge-Wilde H2S Removal Facility and Pinellas County Points of Connection Updates; Tarpon Springs, FL

Electrical Engineer. Responsible for the design, permitting, bidding and construction phase services for a variety of improvements to an existing 45 mgd groundwater supply and treatment facility and a new 60-inch diameter pipeline section to meter wholesale water supply flowrates up to 93 mgd. Improvements at the treatment facility include: process control enhancements for a packed tower aeration treatment process; SCADA and instrumentation and controls improvements to support remote monitoring and control capabilities; 36-inch and 42-inch diameter yard piping improvements; four new pumps with variable speed drives; miscellaneous electrical and civil site improvements; and installation of fiber optic communication lines for the wellfield.

WATER BOOSTER PUMP STATION

SPECIALIZATION:
Project and Construction Management, Electrical Engineering, Instrumentation & Controls

Office Location
Tampa, FL

Education
BS, Electrical Engineering, Georgia Tech, 1976

Professional Registration
PE – 1983, FL, 33376
PE – 1981, GA, 13031

Professional Associations
- National Society of Professional Engineers

Year Career Started
1976

Year Started with B&V
2001

City of Fort Myers; East Booster Pump Station; Fort Myers, FL

Electrical Engineer. Responsible for the electrical and I&C design, permitting and construction of the new East Booster Pump Station. The booster pump station includes a new 2.5 MG pre-stressed concrete water storage tank and 4 mgd high service booster pump station. The booster pump station will include all new electrical service, as this is a greenfield site and all new instrumentation and controls. The booster pump station will include 3 horizontal split case centrifugal pumps, each 60 HP and all will be located inside a new 30' X 72' pump station building that has been sized to include an MCC building.

City of Fort Myers | Engineer of Record for Water Treatment Plant; Fort Myers, FL

Project Manager & Project Director. Responsible for managing multiple, various projects at the City's 13 mgd brackish reverse osmosis water treatment plant. Projects included geophysical logging of existing water supply wells, rehabilitation of water supply wells, replacement of chemical storage tanks, RO process optimization evaluation and renewal of deep injection well permit.

City of Hollywood | Energy Efficiency Master Plan; Hollywood, FL

Design Engineer. Led the field evaluation for the development of a high-level review of the SCADA system for the City of Hollywood's WTP and SRWWTP, as part of a comprehensive Energy Efficiency Master Plan performed by Black & Veatch. The evaluation included automation and control system improvements related to ECMs as well as longer term SCADA system recommendations for enhanced performance and optimized operations.

City of St. Petersburg | SW WRF; St. Petersburg, FL

Design Engineer. Responsible for electrical and I&C design of a Combined Heat & Power (CHP) system at SW WRF. Design elements include upgrades to electrical distribution facilities and equipment and new process controls to support electric utility paralleling of gas fueled generation and recovery process heating water for advanced bio-solids processes. New 12kV utility parallel / generator switchgear, expansion of 12kV power distribution, power transformers, motor control centers and switchboards. Design includes new process control systems for auxiliary boilers, and generator heat recovery equipment as well as electric and thermal energy production monitoring and reporting systems. Design and construction coordination elements require new systems to be incorporated to minimize disruptions to process operations and available plant capacity.

City of Atlanta| Intrenchment Creek WRC, South River WRC Process Modifications / Improvements | Department of Watershed Management, City of Atlanta, GA

Process Instrumentation and Controls Design. Instrumentation and controls design associated with process modifications / improvements at Intrenchment Creek (ICWRC) and South River (SRWRC) Water Reclamation Centers. Design elements include modernization of existing ICWRC & SRWRC DCS systems, incorporation of additional process control systems for new ICWRC pump station and SRWRC additional digesters, primary clarifiers, headworks, transfer pump station, and equalization storage.

Tampa Bay Water | Eldridge-Wilde Wellfield Rehabilitation Project; Hillsborough/Pinellas County, FL

Electrical & I&C Engineer. Duties included the design of the electrical system for the rehabilitation of 24 wells. The wells were installed in the 1960's and 1970's and much of the equipment is original. The rehabilitation of 24 wells will include all new transformers and new electric feeds from a new underground power system. Also new I&C at the wells to tie into the system's remote SCADA system.

Steve King, P.E.

PROJECT MANAGER

Mr. King received a Bachelor's degree in Chemical Engineering from the University of South Florida in Tampa, Florida, in 1998. Mr. King has gained a variety of experience in Civil Engineering and Project Management since graduating. Design projects have included many different types of water/wastewater projects including: RO WTP upgrades, RO WTP studies, energy efficiency studies, WTP pump stations, Ground Storage Tanks, water and wastewater plant design, project management, utility investigation, water supply, pipeline design, regulatory compliance and permit preparation and review. Mr. King has extensive experience obtaining regulatory approvals for a variety of water and wastewater projects. Prior experience includes working as Permitting Supervisor during a seven-year employment with FDEP.

PROJECT EXPERIENCE

City of Venice | RO WTP Efficiency Study; Venice, FL

Engineering Manager. Responsible for all aspects of the RO WTP Efficiency Study. The study is focused on the plant's ability to increase the recovery to 75% from the current 50%. The tasks included: review of available technologies to increase recovery, drafting a plan to test the technologies, cost opinions for the various selected options, review of flood zone implications, design and operating a skid-mounted RO pilot unit designed to model the existing plant at 75% recovery. Additionally, tasks included having the City operate an existing skid to 60% recovery. The results of all the analysis, piloting and literature review were compiled into a final report that was submitted to Southwest Florida Water Management District as part of the Water Use Permit requirement.

City of Dunedin| Dunedin RO WTP Refurbishment; Dunedin, FL

Engineering Manager. Responsible for design tasks and permitting (FDEP, SWFWMD, City Building Department, etc.) of the 9 mgd RO brackish water plant refurbishment. The design includes changes to the media filters, chemical system improvement including conversion from chlorine gas to sodium hypochlorite, new RO process skids and RO CIP system, new RO high pressure pumps, new solids handling facility, new and expanded electrical facilities, yard piping, installation of baffles in the existing Ground Storage Tanks and upgrades to numerous ancillary processes.

Peace River Manasota Regional Water Supply Authority | 1991 Rebuild Project, FL

Project Engineer / Mechanical Process Engineer. Responsibilities include the design and layout of improvements to the water plant. Specifically, the design of the improvements planned for the Solids Contact Units 1 and 2, the 2.0 Million Gallon Ground Storage Tank, transfer pump and the High Service Pumps. The improvements included demolition of some existing infrastructure, and construction of replacement infrastructure to include: new launders at the Solid Contact Units and a new 2.0 Million Gallon Ground Storage Tank and new high service pumps.

SECOND STAGE RO TREATMENT UPGRADE

SPECIALIZATION:
Water and Wastewater, Project Management, Regulatory & Permitting Compliance

Office Location
Tampa, FL

Education
BS, Chemical Engineering, University of South Florida, 1998

Professional Registration
PE – 2012, FL, 74954

Professional Associations
- American Water Works Association

Year Career Started
2000

Year Started with B&V
2007

Tampa Bay Water | Eldridge Wilde H2S Treatment Facility and Pinellas County POC Updates; Tampa, FL

Engineering Manager. Responsibilities include design and coordination of all the permitting for the project. Design included chemical system improvements, pH adjustment system, a v-notch weir with an ultrasonic transducer to measure flow, a CO2 feed system to lower the pH continuous pH monitoring for compliance with Pinellas County's Industrial Pre-Treatment Program. Additionally, new high service pumps, tank improvements, chemical storage improvements and new pipelines and appurtenances.

City of Fort Myers | Engineer of Record for RO WTP; Fort Myers, FL

Engineering Manager. Responsible for managing multiple, various projects at the City's 12 mgd RO brackish reverse osmosis water treatment plant. Projects have included replacement of chemical storage tanks, chemical system improvements, detailed analysis of the RO WTP and development of a plan for future upgrades and maintenances needs and renewal of deep injection well permit.

Tampa Bay Water | Desalination Facility Pump Station and Piping Repair (Design-Build); Tampa, FL

Engineering Manager. Responsibilities include civil and mechanical design of a replacement desalination pump station and leading the engineering team's efforts. The project involves new suction, discharge and concentrate piping and a new concentrate splitter box. Duties also have also included leading the permitting efforts, including the Environmental Resource Permitting (ERP), Florida Department of Environmental Protection (FDEP) Potable Water Construction Permitting, Hillsborough County Development Services Site Plan Review and Building Department Permitting, and FDEP Dewatering Notice of Intent.

Hillsborough County | Valrico AWTP UV System; FL

Engineering Manager. Responsibilities include civil and mechanical design and construction phase services for a UV disinfection expansion at an existing AWTP. Duties also include construction phase services (RFIs, submittals, site visits, construction oversight). The project involves new UV banks installed in an existing UV system, new automated weir gates, stop logs and temporary chlorine disinfection. Duties also have also included leading the permitting efforts for the project, including ensuring that FDEP Wastewater construction exemption was obtained, Hillsborough County Development Services Site Plan Review and others as needed.

Bangor Water District | Johnston Pump Station Upgrade; Bangor, ME

Project Engineer. Responsibilities include civil and mechanical design of the upgrade and replacement of an existing raw drinking water pump station. Duties also include construction oversight, RFI, RFP and submittal review. The project involves the replacement/upgrade of four existing pumps, building reconfiguration, new passive intake screens, new piping in the pump station, a new generator and temporary pumping and piping.

Tampa Bay Water | Eldridge-Wilde Wellfield Rehabilitation Project; Hillsborough/Pinellas County, FL

Engineering Manager. Duties included leading the design and managing the other disciplines for the wellfield rehabilitation project. The project involves new pumps and motors, discharge piping, well houses, site civil, leading the permitting, electrical and I&C. The wells were installed in the 1960's and 1970's and much of the equipment is original. The project involves the rehabilitation of 24 wells with new pumps, motors, discharge pipe, well houses and site civil improvements. Also, the project spans two counties and requires permitting from multiple agencies on both sides of the county line. The project included the hydraulic analysis of the pumps and piping to optimize the pump size selection.

Vasu Veerapaneni, Ph.D, P.E.

WATER TREATMENT PROCESS/ RO MEMBRANES

Dr. Srinivas (Vasu) Veerapaneni is a water treatment expert with focus on separation processes. He is fully acquainted with physical and chemical processes in water treatment, including membrane filtration for water and wastewater treatment. He has been involved in MF/UF treatment processes since their commercialization in late 80s, early 90s. He is also involved in evaluation of emerging technologies for treatment of various sources of water, including high saline water and RO concentrate and provide guidance to various startup companies. He has worked on every aspect of the treatment processes including: feasibility studies, process evaluation and selection, pilot testing, development of procurement documents, start-up and operational assistance, lender Engineer, and financial viability evaluations. He has also worked on development of DBO projects for desalination and reuse.

A recognized water treatment expert, Dr. Veerapaneni has authored 65 technical papers and conference proceedings. He is an active member of American Water Works Association (AWWA), International Desalination Association and American Society of Civil Engineers. He is an active member of various AWWA committees including Water Desalting, Membrane Technology Research, Membrane Process Committee and Contaminant particles committee. He is currently chair of an AWWA sub-committee that is developing a manual of practice for water reuse. He has been invited to present information on desalination and membrane processes at various venues including IDA, Public Utilities Board, Multi State Salinity Summit, Singapore and Universities. He is currently involved in several projects across the globe dealing with RO, desalination, including seawater and wastewater desalination facilities in US, Singapore, South America, Middle East, and Australia. These projects include several in the State of Florida.

PROJECT EXPERIENCE

City of Dunedin| Dunedin RO WTP Refurbishment; Dunedin, FL

Sr. Process Engineer. Responsible for the RO system design, RO feed pump design and all other aspects of the improvements planned for the 9 mgd RO system refurbishment project. The changes include rehabilitation of media filters, conversion from chlorine gas to sodium hypochlorite, new RO process skids and CIP system, new RO high pressure pumps, new solids handling facility, new and expanded electrical facilities, yard piping, installation of baffles in the existing Ground Storage Tanks and upgrades to numerous ancillary processes. Responsibilities also include analysis of the data from all of the pilot systems, review of all design, writing process schematics, process flow diagrams and operational reports and assisting with construction phase services.

SECOND STAGE RO TREATMENT UPGRADE

SPECIALIZATION:
Water and Wastewater Including Membrane Filtration, Reuse & Desalination

Office Location
Kansas City, MO

Education
PhD, Environmental Engineering, Rice University, 1996
MS, Environmental Engineering, Rice University, 1992
MS, 8 graduate courses in Structural Engineering, Kakatiya University, 1988
BS, Civil Engineering, Kakatiya University, India, 1987

Professional Registration
PE – KS, 17283

Professional Associations
- American Water Works Association (AWWA)
- AWWA Water Desalting Committee, Chair-2012-15
- AWWA Membrane Technology Research Committee, Member
- AWWA Membrane Process Committee, Member
- AWWA Particulate Contaminant Committee
- American Society of Civil Engineers/Environmental & Water Resources Institute Joint Concentrate Management Workgroup Member
- Reviewer of several scientific journals including JEE-ASCE, Water Research, J Memb Sci., J WEF, J Wat Resour Planning & Management, J. AWWA, ES&T
- Complimentary Research Associate, Dept. of Envir. Sci, Engeering, Rice University, 1999 & Visiting Research Scientist, 1996, CEREGE, Aix en Provence, France
- Scientist – Lawrence Livermore National Laboratory, Berkeley, 96-2000

Year Career Started
1992

Year Started with B&V
2000

City of Venice Reverse Osmosis Efficiency Study; Venice, FL

Sr. Process Engineer. Led the team of technical advisors and performed process review of the existing RO WTP. Also did data review and analysis of the pilot systems and drafted the report showing the analysis of the data. In addition: performed a desktop evaluation of four alternatives to increase RO recovery. Full scale and pilot testing was also performed and a testing protocol was developed for each system. Lastly, the concentrate disposal was modeled for alternative options and then compared to the existing/future permit conditions; along with an alternative evaluation utilizing deep well injection for disposal.

Tampa Bay Water | Mid Pinellas Brackish Water Desalination Project-VE Team Member; Tampa Bay, FL

Sr. Process Engineer. As member of Value Engineering team, evaluated the design of a RO desalination plant for brackish well water. Analysis included obtaining raw water from well fields, RO plant design, concentrate disposal and review of RO equipment specifications.

Manatee County| RO Seawater Desalination Plant; Manatee County, FL

Process Engineer. Performed preliminary design, cost and feasibility analyses for seawater RO desalination plants in two sizes – 10 mgd (38 Ml/d) and 20 mgd (76 Ml/d). Evaluation included feasibility of beachwells, conventional and MF/UF pretreatment, and economic comparison of operating a larger plant during periods of low electric rates vs. operating a smaller plant continuously.

Region of York | Wastewater Reclamation; Canada

Sr. Process Engineer. Conducted a pilot study to evaluate performance of MF and RO in treating secondary effluent to meet total phosphorous limit of <0.02 mg/L in the final effluent. Currently under detailed design.

Public Utilities Board | Development of Design-Build-Own-Operate contract for 60 USmgd NEWater Facility (Reclamation plant); Singapore

Sr. Process Engineer. 60 USmgd wastewater reclamation facility (NEWater) consisting of MF/UF, RO and UV. The facility is being procured under DBOO. Development of conceptual design, tender documents, tender evaluation and award, financial evaluation and support during construction and commissioning of the facility.

Orange County Water District | Orange County Ground Water Replenishment System Expansion Construction Phase Services; Orange County, CA

Sr. Process Engineer. Providing support for construction phase services for the expansion of OCWD's GWRS system from 70 mgd to 100 mgd. The facility is designed to treat secondary effluent with MF, RO and UV-peroxide for aquifer recharge and for injecting into ground as a barrier to seawater intrusion. Designed the RO system also.

Orange County Water District | Expansion of the 70 mgd Orange County Water District's Groundwater Replenishment Scheme; Orange County, CA

Sr. Process Engineer and RO Lead. Design of 30 mgd expansion of the existing 70 mgd wastewater reclamation facility. Facility uses MF pretreatment, RO, UV/H2O2 advanced oxidation and post-treatment involving decarbonators and lime addition. Designed RO system with energy recovery device to maximize energy efficiency and improve performance of the RO system.

Mike Tache, P.E.

FACILITY DESIGN

Mike Tache is a Senior Project Engineer with nine years of experience performing feasibility studies and providing design, construction, and startup support services for water and wastewater treatment facilities. He has worked on the design of premier advanced reuse and wastewater plants with Black & Veatch.

PROJECT EXPERIENCE

City of Dunedin| Dunedin RO WTP Refurbishment; Dunedin, FL

Project Engineer. Responsible for civil and mechanical design and QC review of the upgrades to the 9 mgd RO WTP planned as part of the refurbishment project. The changes include rehabilitation of media filters, conversion from chlorine gas to sodium hypochlorite, new RO process skids and CIP system, new RO high pressure pumps, new solids handling facility, new and expanded electrical facilities, yard piping, installation of baffles in the existing Ground Storage Tanks and upgrades to numerous ancillary processes.

Fort Myers | Engineer of Record for RO WTP; Fort Myers, FL

Project Engineer. Responsible for leading the Facility Review Report completed as part of the EOR services which reviewed the entire RO WTP from sand separators to high service pumps and ground storage tanks. The report included a detailed review of the operation of the plant, current and future states of the plant, current and future permitting areas of concern and a detailed review of the recovery and condition of the RO skids, RO pumps and CIP systems.

Manatee County| Plant Drain Pump Station and RAS/WAS Pump Station; Manatee County, FL

Engineering Manager. Performed preliminary design, cost estimation, preliminary site investigation, detailed design and construction phase services for these two pump station projects. Projects involves hydraulic analysis and the design and installation of multiple new pump stations, new pumps and motors and all the required appurtenances.

Pinellas County | Water and Sewer Optimization Study; Pinellas County, FL

Project Engineer. Responsible for a comprehensive optimization study of the assets associated with or affecting the South Cross Bayou Water Reclamation Facility (SCBWRF). The objectives of the optimization study include, but were not limited to, reducing energy use, reducing O&M costs, process optimization and technology improvements, and triple bottom line sustainability (economic, environmental, and social) of the facility.

SECOND STAGE RO TREATMENT UPGRADE

SPECIALIZATION:
Water and Wastewater Systems; Civil Design

Office Location
Walnut Creek, CA

Education
MS, Environmental Engineering, University of Massachusetts –Amherst, 2006

BS, Civil Engineering, University of Massachusetts –Amherst, 2004

Professional Registration
PE – 2011, CA, 79147

Professional Associations
- Water Environmental Federation
- CWEA

Year Career Started
2009

Year Started with B&V
2009

Pasco County | Lacoochee WTP Filtration Addition; Dade City, FL

Engineering Manager. Responsible for the preliminary and final design, construction phase services and startup support for a filtration addition at a water treatment plant for Pasco County in an area northeast of Dade City. The filters are designed as pressure filters used to remove the high iron in the ground water. The filters are designed to handle the peak flow of the plant and the system will have instrumentation and manual controls.

Santa Clara Valley Water District and City of San Jose | South Bay Advanced Water Purification Center; San Jose, CA

Project Engineer. Responsible for the civil and mechanical design of a 10 mgd advanced recycled water treatment facility that treats secondary effluent with MF, RO, and UV disinfection to produce high-purity water for reclaimed uses. Drafted the MF system and UV disinfection system pre-procurement documents, developed I&C control narratives, assisted with permit applications, and prepared the Engineer's cost opinion. Constructed / operated an RO bench scale pilot to determine the impacts of RO concentrate discharge to the wastewater outfall. This project received funding from the American Recovery and Reinvestment Act (ARRA).

Sacramento Regional County Sanitation District | Water Reclamation Facility Expansion Project, Phase II; Elk Grove, CA

Project Engineer. Assisted with preliminary and detailed design of a 10 mgd MF system at the District's existing wastewater facility for treating secondary effluent for irrigation uses. Evaluated pilot study results, drafted MF pre-procurement documents, coordinated demo / relocation work of existing facilities, and developed the Engineer's cost opinion.

Chevron Refinery | Richmond Advanced Recycled Expansion (RARE) Project; Richmond, CA

Staff Engineer. Responsible for the civil and mechanical design of a 4 mgd MF/RO reclamation facility that treats secondary effluent for use as boiler makeup water for a local Chevron refinery. Assisted with the evaluation of 5 treatment approaches, conducted material evaluation for a 2 MG reservoir, evaluated RO brine disposal options, and developed the Engineer's cost opinion.

Placer County Water Agency | Ophir Water Treatment Plant Preliminary Design; Auburn, California

Project Engineer - Supporting and managing the preliminary design of a 10 mgd water treatment plant utilizing ballasted flocculation (Actiflo®), conventional media filters, and chlorine disinfection. The facility is being master-planned for an ultimate capacity of 60 mgd. The project also includes the preliminary design and layout of a large, 10 acre, Corporation Yard that will be used to centralize District staff at a single location.

Sacramento Regional County Sanitation District; EchoWater Project; Sacramento, California

Engineering Manager - Managing a large multidisciplinary team with all areas of civil site design, chemical feed system design, and the design of a hydraulic structure to equalize flow to the existing downstream secondary clarifiers. Project involves design of a 330 mgd Biological Nutrient Removal (BNR) process for the City of Sacramento's existing wastewater treatment plant, to meet stringent nitrogen and phosphorus discharge limits.

Pasco County | Embassy Hills WWTF Rehabilitation; Port Richey, FL

Engineering Manager. Responsible for the preliminary and final design, for the rehabilitation of an existing 3.5 mgd wastewater treatment plant. The improvements will include new filters, upgraded electrical, repaired influent pump station, a new generator and other improvements to the plant, much of which is still original to the original construction in 1987.

Ron Parker

PILOT TESTING | MAINTENANCE OF OPERATIONS | WATER QUALITY

Mr. Parker has more than 35 years of experience in the management of treatment plant operations, facilities operation and maintenance (O&M), treatment plant startup and commissioning, disinfection and neutralization of assorted structures and pipelines, operator training, process control troubleshooting, equipment maintenance, and O&M manual preparation. His experience also includes plant operations management and technical specialties, project procurement and evaluation, and contract management.

Formerly a senior operations manager of a large wholesale water supply system, Mr. Parker was responsible for the operation of numerous water treatment plants and related subsystems, as well as quality assessment/quality control (QA/QC) programs, plant analysis, operator training, and plant expansion supervision.

PROJECT EXPERIENCE

City of Dunedin| Dunedin RO WTP Refurbishment; Dunedin, FL

Operations Specialist. Operational review and constructability review of the design drawings. Checks include compliance with applicable rules and regulations, check for operational challenges and ensure constructability. The many changes include rehabilitation of media filters, conversion from chlorine gas to sodium hypochlorite, new RO process skids and CIP system, new RO high pressure pumps, new solids handling facility, new and expanded electrical facilities, yard piping, installation of baffles in the existing Ground Storage Tanks and upgrades to numerous ancillary processes.

City of Venice Reverse Osmosis Efficiency Study; Venice, FL

Operations Specialist. Led the detailed literature review of available technology, RO pilot testing protocol drafting, RO pilot testing chemical (antiscalant) dosing modeling, operating the RO pilot system, modeling all of the RO pilot system setpoints and data points, RO pilot testing data review and analysis and report writing. As a part of the water supply permit, a detailed study was completed to increase the water recovery efficiency to the highest degree feasible; with a target of 75% or greater. Additionally, led efforts to have the RO concentrate modeled for future disposal options.

Tampa Bay Water; Tampa Bay, FL

Senior Operations Manager. Responsible for managing all operational activities, including project procurement, contract development, project closeout, budget process, and project evaluation. Responsible for the daily management, operation, and blending of three supply sources; groundwater, surface water, and desalinated water. These responsibilities included seven groundwater treatment plants, 16 wellfields, five surface water pump stations, seven finished water pump stations, and one alkalinity adjustment facility.

SECOND STAGE RO TREATMENT UPGRADE

SPECIALIZATION:
Water Treatment Plant Startup & Commissioning Services, Operations; Process Troubleshooting; Training; Management; Evaluations and Analysis; O&M Manual Preparation

Office Location
Tampa, FL

Education
BS, Education, Physical Education, Health, and Science, Missouri Western State College, 1979

Professional Associations
- American Water Works Association

Year Career Started
1979

Year Started with B&V
1999 to 2004, 2012 to present

The surface water contract operations included the management of a 120 mgd plant which utilized an Actiflo® pretreatment system, pre-disinfection with ozone, biological filtration, and residuals management with belt filter presses and sludge drying beds for beneficial reuse.

The seawater desalination plant had a design capacity of 25 mgd and used conventional pretreatment followed by continuous upflow sand filtration, diatomaceous earth filters and high pressure seawater reverse osmosis membranes, and belt filters for residuals management with landfill disposal.

Tampa Bay Water Keller WTP/POC Improvements | Tampa, FL

Operations Specialist. The existing Keller WTP is a 36 mgd groundwater treatment facility with forced draft aerators for hydrogen sulfide removal. Improvements to the plant consisted of new air monitoring and process control analyzers, new destruct unit pH and ORP adjustment, waste stream flow monitoring, new bypass piping with a temporary chemical feed system, new vertical turbine transfer pumps, piping modifications at the connection to the regional wholesale system, and new control logic via the Human Machine Interface (HMI) system. A startup plan was prepared and included the preparation of disinfection plans for approval from the Florida Department of Environmental Protection (FDEP), operational protocols for startup and testing of the bypass piping and temporary chemical feed system, flow control logic and pH adjustment to the forced draft aerators, pH control of the destruct unit waste stream, startup of the vertical turbine transfer pumps, and tuning of the HMI process control loops.

SAWS Brackish Groundwater Desalination Project; San Antonio, TX

Operations Specialist. The San Antonio Water System (SAWS) Brackish Groundwater Desalination plant provides a new water supply for SAWS. The project consists of a new well field; and a new treatment plant which uses reverse osmosis membranes, calcite contactors, degasifiers, a chlorine contact chamber, finished water pumping and concentrate/brine disposal through injection wells. A Preliminary Operations Plan was developed to identify the control features for each of the unit processes and chemical feed systems. The Plan also identifies the control features for abnormal or special operating conditions at the facility.

Public Utilities Board; Changi NEWater Plant 2; Singapore

Operations Specialist. The Changi NEWater Plant 2 is a new indirect reuse treatment facility that utilizes MF/RO filtration, along with UV and chlorination for disinfection. After commissioning, a Performance test was conducted for acceptance of the plant. The test included four test periods to demonstrate the hydraulic effectiveness of the plant; which ranged from minimum to capacity rates with guarantees on energy consumption. Duties performed during this test period included monitoring of the duty and standby equipment run times, monitoring of the process sample collections, reviewed the daily water quality and online instrumentation data to performance limits, performed process calculations on the MF/RO flux and recovery rates, and was part of the daily review meeting for pass/fail status.

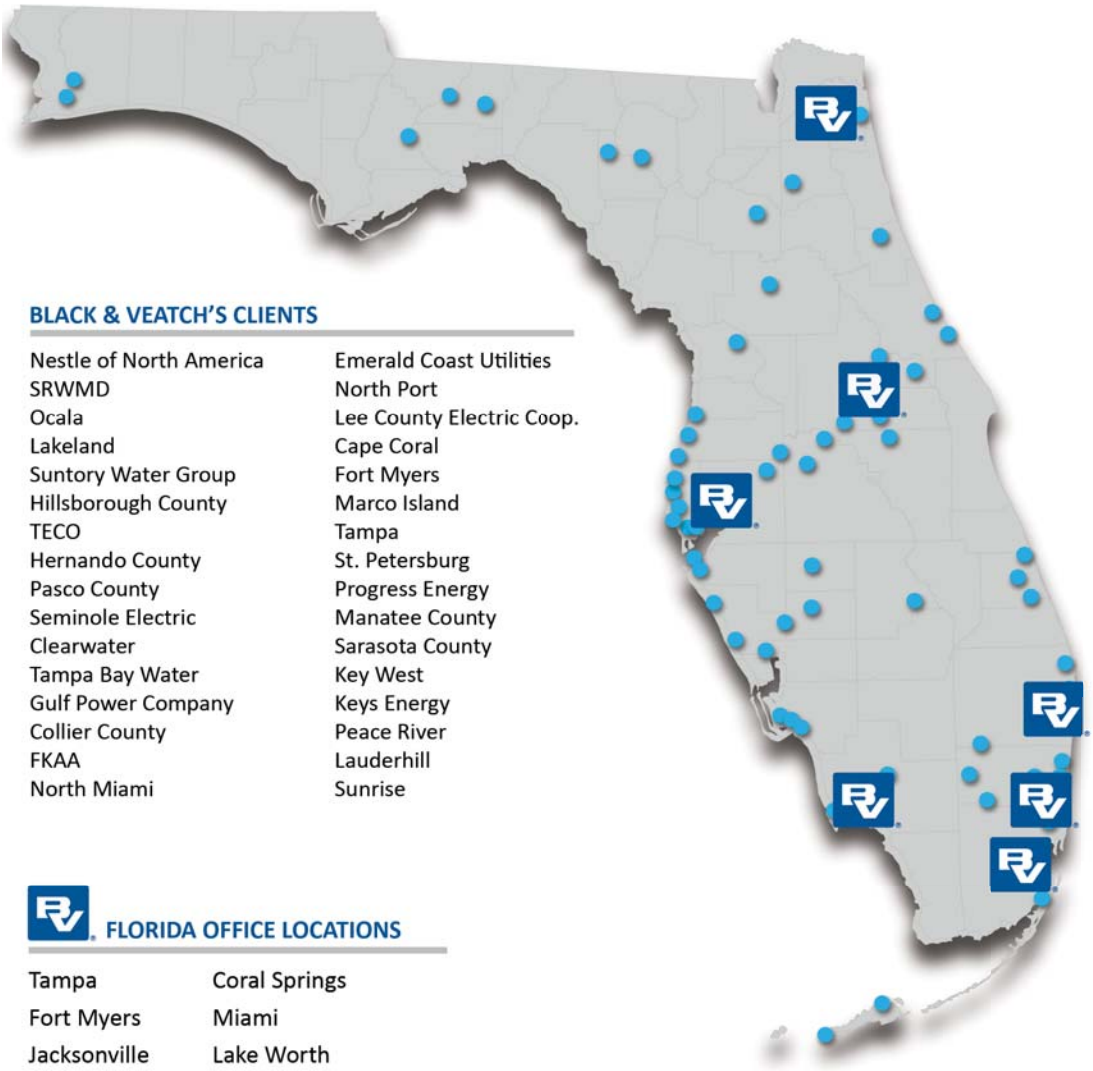
Signal Butte WTP; Mesa, AZ

Operations Specialist. The Signal Butte WTP is a new conventional 24 mgd treatment plant with two process trains. The treatment processes consist of a pre-ozone contact basin, a two train Actiflo process, post-ozone contact basin, biological filters with sand and granular activated carbon media, distribution high service pumping, and belt filter presses for sludge dewatering. Provided training to operators and checked the plant for operations consistent with stated requirements.

Project Experience

Black & Veatch is a leader in water supply, treatment and distribution in the U.S. and is consistently ranked in the top five in related water categories by the Engineering-News & Record. We have served water and wastewater clients in Florida for more than 60 years.

Black & Veatch has provided planning, design, and construction phase services for more than 50 water utilities in Florida. This combination of local experience and global expertise allows us to bring world-class engineering services to our local clients.



BLACK & VEATCH'S CLIENTS

Nestle of North America
SRWMD
Ocala
Lakeland
Suntory Water Group
Hillsborough County
TECO
Hernando County
Pasco County
Seminole Electric
Clearwater
Tampa Bay Water
Gulf Power Company
Collier County
FKAA
North Miami
Emerald Coast Utilities
North Port
Lee County Electric Coop.
Cape Coral
Fort Myers
Marco Island
Tampa
St. Petersburg
Progress Energy
Manatee County
Sarasota County
Key West
Keys Energy
Peace River
Lauderhill
Sunrise

FLORIDA OFFICE LOCATIONS

Tampa
Fort Myers
Jacksonville
Orlando
Coral Springs
Miami
Lake Worth

Indian Springs
Tallahassee
Madison
Jacksonville Beach
JEA
SJRWMD
Gainesville Regional Utilities
Flagler County
Daytona Beach
Florida Municipal Power Agency
New Smyrna Beach
Orlando Utilities Commission
Seminole County
Kissimmee Utility Authority
St. Cloud
Orange County
Reedy Creek Energy Services
Heartland Water Alliance
Polk County
Vero Beach
Fort Pierce Utilities Authority
Florida Power & Light
Highlands County
SWA of Palm Beach County
SFWMD
Hardee County
DeSoto County
Cypress Energy
Hollywood
Miami-Dade Water & Sewer
U.S. Sugar
Homestead
Deerfield Beach
Broward County WWS
Palm Beach County WUD
Pinellas County
Plant City
Venice

REVERSE OSMOSIS (RO)

Black & Veatch has an extensive resume of RO WTP design, permitting, construction, and pilot testing experience, which includes projects in the local Tampa Bay area, across the US, and around the world. The diversity of our team experience ensures a design that meets local challenges while leveraging the lessons learned and innovations gained from our tremendous global experience.

With a track record of more than 50 membrane facility designs worldwide, Black & Veatch is an industry leader in membrane filtration for drinking water, reclamation/reuse and wastewater treatment. The company has designed a combined membrane capacity exceeding 600 million gallons per day (mgd) on five continents. The table below summarizes a sample of Black & Veatch's RO water treatment experience.

REVERSE OSMOSIS WATER TREATMENT EXPERIENCE					SCOPE OF SERVICES					
Client	Project or Plant Name	Location	Capacity (mgd)	Year Completed	Feasibility Study/ Due Diligence	Pilot Testing	Conceptual Design	Detailed Design	CAPEX / OPEX Estimate	Construction Phase Services
East Bay Municipal Utility District	Richmond Advanced Recycling Expansion (RARE) Water Project	Richmond, CA	3.5	2010	■	■	■	■		■
Venice, City of	RO WTP Recovery Pilot and Feasibility Study	Venice, FL		2018	■	■	■		■	
Orange County Water District	30 mgd Expansion of 70 mgd Groundwater Replenishment Scheme	Irvine, CA	100	2010		■		■		
Santa Clara Valley Water District	Silicon Valley Advanced Water Purification Center	San Jose, CA	6	2014				■		
Dunedin, City of	Dunedin WTP Refurbishment	Dunedin, FL	6	Ongoing	■	■	■	■	■	■
Santa Monica, City of	Charnock (Santa Monica) Wellfield Restoration Project	Santa Monica, CA	10	2010		■	■	■	■	
Oxnard, City of	Oxnard G.R.E.A.T. Program Desalination Facility	Oxnard, CA	7.5	2008		■		■		
Fort Myers	RO Treatment Plant Engineer of Record	Fort Myers, FL	12	Ongoing	■			■	■	■
Long Beach Water Department	Long Beach Seawater Desalination Facility	Long Beach	10	2005	■		■			
Santa Cruz, City of	Santa Cruz Seawater Desalination Facility Study	Santa Cruz	4.5	2005		■	■			

REVERSE OSMOSIS WATER TREATMENT EXPERIENCE					SCOPE OF SERVICES					
Client	Project or Plant Name	Location	Capacity (mgd)	Year Completed	Feasibility Study/ Due Diligence	Pilot Testing	Conceptual Design	Detailed Design	CAPEX / OPEX Estimate	Construction Phase Services
Carlsbad Municipal Water District	Carlsbad Water Recycling Facility	Carlsbad	1	2003	■		■	■		■
Tampa Bay Water	Tampa Bay Seawater Desalination Facility	Tampa	25	2008		■				■
County of Maui Water Supply	Island of Maui Desalination Feasibility Study	Maui	5	2006	■		■			
Geneva, City of	Geneva Groundwater Softening WTP	Geneva	8	2007		■		■		
O'Fallon, City of	O'Fallon Low Pressure RO Membrane Softening WTP	O'Fallon	6	2003		■		■		■
Fargo, City of	Fargo Surface Water Treatment Plant	Fargo	15	2016	■	■	■	■		
Southern Nevada Water Authority (SNWA)	R&D of the Las Vegas Valley Shallow Groundwater System	Las Vegas	n/a	2003	■	■				
United Water - New York	Desalination of Lower Hudson River	New York	7.5	2008	■		■			
San Antonio Water Supply	Brackish Groundwater Desalination Program	San Antonio	12	2016			■	■	■	■
BHP Billiton	Escondida Water Supply	Antofagasta	57.06	2017	■		■	■	■	
Singapore's Public Utilities Board (PUB)	Tuas Singapore Seawater Desalination Project		36	2005				■		■
Sembcorp Utilities	Salalah Independent Water and Power Project		18	2012				■	■	■
Western Corridor Recycled Water Pty Ltd	Bundamba WTP	Brisbane, Queensland Australia	18	2008	■		■			
USAID	Middle Area Desalination Plant	Deir Al Bal, Gaza Strip West Bank	1	2017			■	■	■	
PT Jawa Power	Paiton Power Plant Units 5 & 6 Desalination System	Surabaya, East Java Indonesia	1.2	2003				■		■

PUMP STATIONS

Throughout its 100-year history, Black & Veatch has been designing pumping stations of all types and sizes, including raw water, potable high service & booster pump stations, and reclaimed water distribution, and wastewater, among others. Our pump station designs are delivered turn-key, leveraging in-house capabilities in planning, hydraulic analysis, and resources for all engineering disciplines. In the past 20 years, Black & Veatch has completed more than 50 booster pump station projects.

Our experience includes addressing unique project challenges such as the need for attention to good-neighbor considerations. For example, we have designed pump stations that resemble barns, houses, and office buildings to blend in with surrounding neighborhoods.

Black & Veatch also has extensive experience in the design of water, wastewater, and reclaimed water pipelines. For example, we have completed over 1,000 projects involving more than 12,000 miles of water, sewer, and reuse conveyance worldwide. Our experience includes a variety of trenchless techniques including microtunneling (MT), pilot tube microtunneling (PTMT), horizontal directional drilling (HDD), and horizontal auger boring (HAB). This includes more than 50 miles of pipelines designed under the management of our Client Manager, Andy Westfall.

The table below summarizes a sample of Black & Veatch's water booster pump station experience.

PUMP STATION	TOTAL PUMPING CAPACITY (MGD)	YEAR COMPLETED
East Water Storage Tank and Booster Station | Fort Myers, FL	4	Ongoing
Idlewild Booster PS | Charlotte Water, NC	23.5	2016
Etowah Area Water System | City of Hendersonville, NC	1.3	2018
Martin Control Station | Medford, OR	10	2013
Greg Avenue Pump Station | Burbank, CA	36.0	2016
Providence Road PS | Union County Public Works | Waxhaw, NC	9.6	2016
Hwy 75 PS | Union County Public Works | Monroe, NC	4	2016
Chino II Desalter 1010 Zone Product Water PS | Jurupa Valley, CA	21.6	2015
Chino II Desalter 1110 Zone Product Water PS | Jurupa Valley, CA	25.0	2015
C.N. Chitty Booster PS | Winston-Salem/Forsyth County Utility Commission, NC	40.0	2015
Bitters PS | San Antonio Water System, TX	48.0	2015

PUMP STATION	TOTAL PUMPING CAPACITY (MGD)	YEAR COMPLETED
Meadow Woods Reclaimed Water pump Station	1	2015
Bonita PS | City of Lake Oswego/ Tigard, OR	15.0	2015
Interconnect PS | Castle Pines Metropolitan District, CO	6.0	2013
Southeast PS | City of Bloomington Utilities, IN	24.0	2013
Watts PS | Pueblo Board of Water Works, CO	15.0	2011
Valley PS | Littleton, CO	2.5	2010
Big Chino Water Delivery System PS No. 1 | City of Prescott, AZ	11.0	2009
Big Chino Water Delivery System PS No. 2 | City of Prescott, AZ	18.0	2009
Big Chino Water Delivery System PS No. 3 | City of Prescott, AZ	31.0	2009
Cactus Avenue PS | Moreno Valley, CA	32.0	2009
Sardis Road Booster PS | San Antonio Water System, TX	20.0	2009

PUMP STATION	TOTAL PUMPING CAPACITY (MGD)	YEAR COMPLETED
Market Street PS | San Antonio Water System, TX	55.0	2009
Sutton PS | San Antonio Water System, TX	4.0	2009
Barbee Chapel Road PS | Carrboro, NC	4.5	2008
I-40 PS | Carrboro, NC	5.1	2008
Randolph PS | San Antonio Water System, TX	36.0	2008
Cactus 2635 Zone PS | Las Vegas Valley Water District, NV	47.2	2007
Montessori 2745 Zone PS | Las Vegas Valley Water District, NV	20.0	2007
Montessori 2860 Zone PS | Las Vegas Valley Water District, NV	20.0	2007
Northeast Transfer PS | Lincoln Water System; Lincoln, NE	45.0	2006
Blaisdell Road PS | United Water New York; Orangeburg, NY	3.0	2006
Booster PS | Cheyenne Board of Public Utilities, WY	5.0	2005
Pioneers PS | Lincoln Water System; Lincoln, NE	10.0	2004
North Navigation Boulevard PS | City of Corpus Christi, TX	30.0	2004
Shiloh Road PS | North Texas Municipal Water District; Wylie, TX	20.0	2004
Eastern Dublin Zone 3 PS 30A | City of Dublin, CA	1.2	2003

PUMP STATION	TOTAL PUMPING CAPACITY (MGD)	YEAR COMPLETED
Main Street Booster PS | City of Tustin, CA	4.3	2003
Westmeadow PS | Colorado Springs Utilities, CO	5.0	2003
Northside PS | City of Richardson, TX	18.0	2003
North Water PS | Lawrenceville, GA	20.0	2002
Bristow Road PS | Northern Kentucky Water District; Ft. Thomas, KY	6.0	2002
Stacy Road PS | City of Allen, TX	29.4	2002
Friendship Booster Station | SJWD Water District; Lyman, SC	5	2001
Vista Ridge Zone 4 PS |Vista Ridge Metropolitan District; Erie, CO	8.0	2001
Hospital Water Tank Booster PS Town of Leesburg, VA	4.2	2001
Gayley Raw Water Booster PS Greenville Water System, SC	45.0	2000
Commonwealth Avenue PS Massachusetts Water Resources Authority ; Boston, MA	40.0	2000
Northern Service Area Booster PS City of Dayton, OH	7.5	2000
Custer Road PS | City of Allen, TX	15.0	2000
Willow Pass PS | Contra Costa Water District; Santa Clarita, CA	21.6	1999
Metrowest PS | Orlando Utilities Commission, FL	5.7	1999

RELATED EXPERIENCE AND REFERENCES

On the following pages, we have provided summary write ups for several projects/contracts that feature relevant experience for municipal clients of similar size and/or similar facilities to the City of Venice projects. Contact information for a client reference is provided for each.

In selecting this limited number of feature projects, we have featrued projects that are primarily recent, in close geographic proximity, and which were performed in significant part by professionals that will be part of our team for the City of Venice. The table following the project experience summarizes the involvement of our key team members in the feature projects.

RELEVANT PROJECT ELEMENTS

- 2.5 MG Ground Storage Tank
- 3 Horizontal Split Case Pumps
- 4 mgd High Service Booster Pump Station
- Pump Station Building
- Electrical/ MCC Building
- Chemical Trim Feed (Disinfection System)
- Emergency Backup Power Generator
- Piping Improvements
- HVAC
- SCADA
- Preliminary Design
- Site Assessment
- Hydraulic Analysis
- Detailed Design
- Permitting
- Construction Phase Services
- Startup Support
- Site Development
- Stormwater Design
- Electrical & I&C Design
- Cost Estimation

KEY TEAM MEMBERS

Andy Westfall, Amanda Schwerman, Mark Martin, Mike McGee, Nick Eckhardt Steve King, Ron Parker, Richard Taylor, Ed Vogt, Brad Vanlandingham

YEAR COMPLETED

Ongoing

CLIENT REFERENCE

Richard Moulton
Public Works Director
(239) 321-7216
RMoulton@cityftmyers.com

East Water Storage Tank and Booster Pump Station

Fort Myers, Florida

Black & Veatch is providing engineering services to the City of Fort Myers to support a new 2.5 MG Pre-Stressed Concrete Ground Storage Tank and 4 mgd Booster Pump Station. The City has experienced growth in the eastern portion of the City which has led to the need to provide storage and pressure boosting capability for the increasing demand and fire flow conditions. Notable elements of the project include:

- Three 60 HP horizontal split case pumps, each designed for 1,450 gpm on variable speed drives
- 106-foot diameter pre-stressed concrete water storage tank
- Chemical trim feed (disinfection system)
- Emergency backup generator
- Pipeline to and from the site
- Pump station building, including MCC and electrical building
- HVAC and building mechanical
- 16″ and 24″ pipelines

Preliminary design included site investigations on this challenging undeveloped City parcel, including:

- Easement and rezoning assistance
- Endangered Species survey
- Wetlands delineation
- Boundary and topographic survey
- Subsurface Utility Investigation
- Geotechnical drilling and engineering

Hydraulic analysis of the system led to the sizing of the tank at 2.5 MG and the booster pump station at 4 mgd. Additionally, the pipelines coming into and leaving the site to connect to the City's existing distribution system are included in the final design. Services include all aspects of the design, bidding, permitting, construction phase and startup support and testing of the tank, chemical trim, emergency generator and booster pump station.

An additional feature to the project is that it can be arranged to allow the high service pumps to pump directly from the City's distribution system, bypassing the tank. This provides additional flexibility for the City in meeting the demands of the water system.

Dunedin Water Treatment Plant Refurbishment Project

Dunedin, Florida

Black & Veatch is providing engineering services including pilot testing, study, design, permitting, construction and construction phase services for the City of Dunedin 9.0 mgd Reverse Osmosis (RO) Water Treatment Plant Refurbishment Project. Black & Veatch is completing the project under a progressive design-build delivery method and is also acting as the contractor. The plant has been in operation since 1992 and is in need wide-spread refurbishments.

Improvements under implementation with the project include:

- New three-stage RO membrane system with recovery up to 85%
- New RO feed pumps
- New RO pretreatment system
- New RO post-treatment system
- New liquid hypochlorite disinfection system conversion from gas chlorination
- New chemical feed systems throughout the plant
- Complete replacement of plant electrical and control systems
- Chemical feed system upgrades
- Ground Storage tank refurbishment (including internal baffles)
- Numerous other supporting improvements.

The early phase of project involved a comprehensive pilot testing program that included evaluation of various alternative chemicals, treatment processes, equipment for the oxidation system, pretreatment system, RO membrane system, and other process elements. Results of the pilot testing program supported treatment technology and equipment selections. A notable outcome from the pilot testing was the selection of dual media filtration over MF/UF for the pretreatment process, saving the project approximately $5 million dollars compared to initially proposed technology.

Black & Veatch will also complete the construction of the project through the design-build process. Additionally, Black & Veatch will assist the City with State Revolving Funding applications and other funding requests.

RELEVANT PROJECT ELEMENTS

- Three-stage RO WTP
- RO Pretreatment
- RO Feed Pumps
- Cartridge Filters
- Chemical Feed System Improvements
- Ground Storage Tank Improvements
- Electrical System Replacement
- Instrumentation and Controls
- SCADA
- Pilot System Design and Operation
- Preliminary Design
- Hydraulic Analysis
- Detailed Design
- Permitting
- Construction
- Construction Phase Services
- Startup Support
- Funding Application Support

KEY TEAM MEMBERS

Andy Westfall, Vasu Veerapaneni, Ryan Eck, Ron Parker, Richard Taylor, Bobby Burchett, Steve King, Chad Barker, Roger Smith, Ed Vogt, Mike Tache

YEAR COMPLETED

Ongoing

CLIENT REFERENCE

Russell Ferlita,
Project Manager and Assistant City Engineer
(727) 298-3186
RFerlita@DunedinFL.Net

Southern Regional Water Supply Facility

Orange County, Florida

Black & Veatch provided design, permitting, bidding, construction phase, resident engineer, and start-up services for a new 30 mgd potable water supply facility. The project was a new plant on a "green-field" site to supply water to the southern region of Orange County in Orlando, Florida. The major project components included:

- 72 mgd High Service Pump Station (2 @ 5.5 mgd and 3 @ 11 mgd) with VFDs
- Two 5 Million Gallon pre-stressed concrete storage tanks, designed to operate in series or parallel
- Emergency backup power generator
- Plant & distribution system piping, including 42" and 48" piping
- Chemical feed systems including disinfection and fluoride
- Ozone contactor for H2S treatment
- Several buildings including operations, high service pump station and chemical storage (including HVAC and other building mechanical improvements)
- All new electrical service and new SCADA and I&C systems

The project also involved all of the necessary site improvements including roads, site grading, and stormwater improvements. Note the design ensured no impacts to the protected wetlands adjacent to and on portions of the site. Also, the project included the required stormwater ponds and all other environmental studies and permitting.

RELEVANT PROJECT ELEMENTS

- Two 5 MG Ground Storage Tanks
- 72 mgd High Service Pump Station
- Chemical Feed System
- Emergency Backup Power Generator
- Plant Piping
- Distribution System Pipelines
- Operations and other New Buildings
- 30 mgd WTP
- SCADA
- Water Supply Wells
- Electrical Design and Installation
- Preliminary Design
- Hydraulic Analysis
- Detailed Design
- Permitting
- Construction Phase Services including RPR
- Startup Support Services
- Cost Estimation
- Civil Site Design

KEY TEAM MEMBERS

Richard Taylor, Brad Vanlandingham, Ed Vogt

YEAR COMPLETED

2012

CLIENT REFERENCE

Mark Ikeler, P.E.
Project Manager
(407) 254-9705
mark.ikeler@ocfl.net

RO WTP Recovery Pilot and Feasibility Study

City of Venice, Florida

Black & Veatch completed pilot system operation and a detailed feasibility study to determine the applicability of increasing the City's RO WTP recovery rate from 50% to 75%. Major project elements included:

- Technology evaluation for increasing the RO recovery
- Detailed review of the top four alternative options for increasing recovery
- Design, setup operating protocols and model recovery rates and chemical dosage for two pilot systems.
- Operation of a skid-mounted pilot plant that was designed to simulate the current plant operation and add a second RO stage to achieve 75% recovery
- Operation of a full-scale pilot with the City's help on one of the existing skids. The full-scale pilot was used to demonstrate the existing skids ability to operate at up to 60% recovery.
- Gather all the data from the two pilot plants, compile and analyze the data
- Model different long-term scenarios (different number of second stage units) for the City to review for the addition of the second stage RO systems.
- High level cost analysis of the different scenarios
- Review of physical space availability at the RO WTP
- Permitting (environmental) review of the different scenarios
- Modeling of the concentrate to determine mixing zone sizes and also completed a disposal alternative review.
- Review of the existing emergency engine generator emission ratings
- Modeling of the existing emergency generator to determine sizing applicability to the existing WTP and future expanded WTP. Also completing a condition assessment on the physical condition of the existing generator

The final report included a detailed review and analysis of the data collected from the full-scale and pilot plants. The study showed that the existing plant was able to operate at up to 60% recovery with no modifications necessary. The pilot scale system showed that the system could be run at up to 75% recovery with the addition of second stage RO skids, pumping and piping.

RELEVANT PROJECT ELEMENTS

- RO WTP Analysis
- Two-Stage Pilot Plant Operation
- Two-Stage RO System Analysis
- Permitting Review
- Cost Estimation
- Electrical Load Review
- Emergency Generator Analysis

KEY TEAM MEMBERS

Andy Westfall, Bobby Burchett, Richard Taylor, Steven King, Ron Parker Vasu Veerapaneni, Ryan Eck

YEAR COMPLETED

2018

CLIENT REFERENCE

Mr. John Banks
Utilities CIP Manager
JBanks@Venicegov.com
(941) 882-7297

RELEVANT PROJECT ELEMENTS

- 2.0 MG Ground Storage Tank
- Horizontal Split Case Pumps
- High Service Pump Station Improvements
- Transfer Pump Station Improvements
- Chemical Feed System Improvements
- Emergency Backup Power Generator
- Plant Piping Improvements
- SCADA Improvements
- Electrical Improvements
- Preliminary Design
- Hydraulic analysis
- Detailed Design
- Permitting
- Construction Phase Services including RPR
- Startup Support Services
- Cost Estimation
- Civil Site Design

KEY TEAM MEMBERS

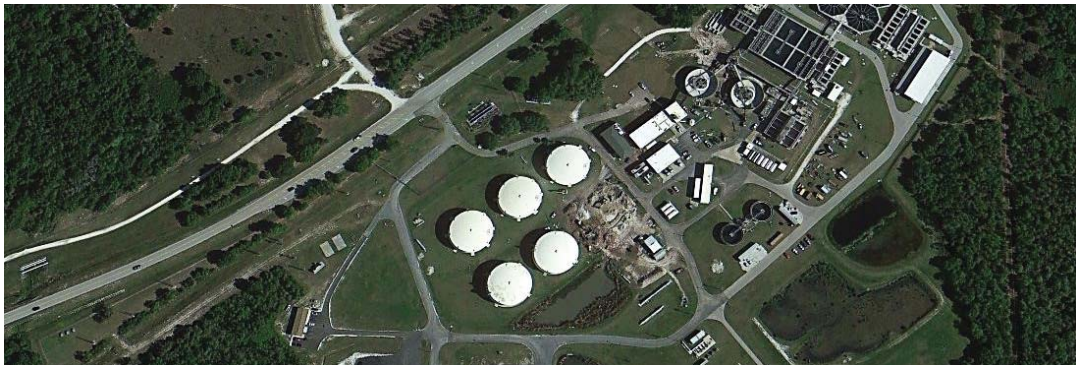
Andy Westfall, Bobby Burchett, Mark Martin Steve King, Richard Taylor Mike McGee, Ed Vogt, Brad Vanlandingham, Rafael Frias, Ron Parker

YEAR COMPLETED

2016

CLIENT REFERENCE

Mr. Kevin Morris, PE, BCEE
Science and Technology Officer
(941) 316-1776
kmorris@regionalwater.org



1991 Facility Rebuild

Peace River Manasota Regional Water Supply Authority, Florida

Black & Veatch provided engineering services to the Peace River Manasota Regional Water Supply Authority to support widespread improvements to the Peace River Facility Trains 1 and 2 with a treatment capacity of 12 mgd. The major improvements included:

- 2 MG Pre-Stressed Concrete Ground Storage Tank
- Horizontal Split Case High Service Pumps
- Transfer Pumps
- Chemical Feed Improvements
- Plant and Process Piping Improvements,
- Electrical, I&C and SCADA System Upgrades

Other notable facility improvements include:

- Overhauling the filters with new media, and backwash enhancements
- Structural repairs including new walkways, pipe supports, concrete design and repair, and equipment bases
- Replacing/upgrading alum, caustic, polymer, and powder activated carbon chemical feed systems
- Electrical and piping repair and replacement throughout the facility

The design was developed on a fast-track basis in order to initiate construction prior to the start of the dry weather season when the plant operational disruptions are more manageable. The design team completed in the preliminary design in only five weeks and delivered the complete facility design in only four months.

Additionally, Black & Veatch provided construction phase services including full-time resident project representation (RPR). The Black & Veatch team led efforts to ensure compliance with design documentation and complete timely review of any RFIs and contractor questions.

RO Treatment Plant Engineer of Record

Fort Myers, Florida

The City of Fort Myers owns and operates a 12.0 mgd RO water treatment plant. Black & Veatch has completed many projects as the Engineer of Record for the RO WTP.

RO WTP Operations Review. Black & Veatch provided an initial review of the RO WTP to evaluate the treatment processes and provide the City with recommendations for short and long-term improvements that could improve the performance, reliability, water quality, and explore potential for increasing potable water production. Short-term recommendations included a change in operation procedures to increase RO membrane recovery and production, improvements to finished water quality and stability and identification of single points of failure in the piping system arrangement. Long term recommendations included construction of a backup concentrate injection well and reconfiguration of the RO membrane system pumps, piping and valves.

RO WTP Facility Plan. Black & Veatch completed an evaluation of the entire RO WTP from the sand separators to the high service pumps and including the RO system. The facility plan will provide a guide for the City's future water system development and investment decisions. Site inspections of the WTP and staff interviews were conducted to determine the existing condition of the facility and the current operational protocols. Current and anticipated regulations were reviewed and water quality and treatment goals were established. The plan was then used to develop the City's CIP for the RO WTP. A detailed CIP was also developed to incorporate the prioritized improvements and implementation schedule with consideration for critical needs and budgetary constraints.

Additional projects completed as part of the EOR work include:

- Chemical storage and feed system improvements
- Liquid lime evaluation
- Eastwood Wellfield rehabilitation and expansion
- UIC permit renewal

RELEVANT PROJECT ELEMENTS

- 12 mgd WTP
- RO WTP Operation Analysis
- RO WTP Evaluation
- High Service Pump Evaluation
- Chemical Storage and Feed Improvements
- Preliminary Design
- Hydraulic Analysis
- Detailed Design
- Permitting
- Construction Phase Services
- Startup Support
- Cost Estimation
- Emergency Power Generation Evaluation

KEY TEAM MEMBERS

Mark Martin, Richard Taylor
Steven King, Mike Tache
Nick Eckhardt, Bobby Burchett, Andy Westfall, Rafael Frias

YEAR COMPLETED

Ongoing

CLIENT REFERENCE

Richard Moulton
Public Works Director
(239) 321-7216
RMoulton@cityftmyers.com

Eldridge-Wilde H2S Treatment Facility and Pinellas POC Updates Project

Tarpon Springs, Florida

Black & Veatch provided design, permitting, bidding, construction phase, resident engineer, and start-up services for a variety of improvements to the existing Eldridge-Wilde H2S Treatment Facility, Eldridge-Wilde Wellfield, and Pinellas Regional Point of Connection site. The major improvements included:

- Upgrades to the transfer pump station including four 8,500 gpm vertical turbine pumps and associated piping,
- Improvements / repairs to the high service pump station tank
- 60-inch diameter above grade piping assembly
- Temporary HDPE bypass piping, connected via hot-tap
- Water treatment system improvements including updates to the packed tower aeration system for H2S removal
- Electrical improvements to allow the connection of a 350 kW portable generator
- Modifications to existing chemical storage containment areas
- Modifications to the chemical feed and dosing systems, including disinfection, pH adjustment and stabilization
- 36", 42", 60" and 66" pipelines including static mixers, flowmeters valves and all other appurtenances
- Electrical and I&C/SCADA improvements

Black & Veatch supported the project from start to finish including support of coordination between Pinellas County and Tampa Bay Water. Black & Veatch supported the significant planning and tracking efforts required to maintain compliance with the two agencies and ensure the construction was completed in a timely manner and minimized disruptions to both systems.

RELEVANT PROJECT ELEMENTS

- High Service Pump Station Improvements
- Chemical Feed System improvements
- Plant Piping Improvements
- Emergency Backup Power Generator
- SCADA Improvements
- Electrical Improvements
- Preliminary Design
- Hydraulic analysis
- Detailed Design
- Permitting
- Construction Phase Services including RPR
- Startup Support Services
- Cost Estimation
- Civil Site Design

KEY TEAM MEMBERS

Bobby Burchett, Richard Taylor, Steve King, Ron Parker Ed Vogt, Brad Vanlandingham

YEAR COMPLETED

2015

CLIENT REFERENCE

Ms. Maribel Medina
Project Manager
(727) 791-2378
MMedina@tampabaywater.org

Tampa Bay Water RO Desal WTP Engineering Services

Tampa, Florida

Over the last seven years Black & Veatch has completed many projects for the Tampa Bay Water RO Desalination WTP. The projects have ranged from pilot testing/review to pump station rebuild to energy audits. The RO Desalination Pump Station and Piping repair project was a design build project that featured the following aspects:

- Removal of the existing seawater pumps and storage for reinstallation
- Demolition of the existing feed pump station, above and below grade piping, pump cans, valves and the concentrate flow splitter box.
- Design and replacement of upgraded FRP pipe, new concrete encased pump cans, new valves, appurtenances, chemical system improvements, installation of new vibration and temperature monitors on the pumps, new electrical and I&C improvements and a new concrete tank/flow splitter box.

A comprehensive energy audit for the RO desalination plant included:

- Development of a comprehensive energy use baseline for the Facility's RO equipment.
- Energy audit, including: efficiency evaluations of RO equipment, processes, and pumping systems.
- Operations optimization evaluation for the RO systems. The evaluation focused on reducing energy costs, also important factors such as: maintaining level of service; environmental impacts; minimizing operational complexity; potential water quality impacts; daily and seasonal variations in water demands and power rates; and identification of tools to support Operators performance.
- Development and analysis of energy management opportunities within the RO system. The analyses included: capital cost estimates; energy use and cost impacts; other O&M cost impacts; and non-economic factors, such as operational complexity and water quality.

Additional tasks completed at the RO Desal plant have included:

- Pilot testing
- Hydraulic analysis and Condition Assessment
- Operational strategy review
- Chemical system analysis and improvements design and installation

RELEVANT PROJECT ELEMENTS

- 25 mgd RO WTP
- Chemical Feed Improvements
- Pump Station
- Concrete Water Tank
- Electrical Building Improvements
- Energy Optimization
- Preliminary Design
- Hydraulic Analysis
- Detailed Design
- Permitting
- Construction Phase Services
- Startup Support
- Pilot Testing

KEY TEAM MEMBERS

Steve King, Andy Westfall Bobby Burchett, Ron Parker Richard Taylor, Brad Vanlandingham, Ed Vogt, Roger Smith

YEAR COMPLETED

2018

CLIENT REFERENCE

Danielle Keirsey,
Project Manager
(813) 929-4552
dkeirsey@tampabaywater.org

RELEVANT PROJECT ELEMENTS

- High Service Pump Station Improvements
- Chemical Feed System improvements
- Plant Piping Improvements
- Emergency Backup Power Generator
- SCADA Improvements
- Electrical Improvements
- Preliminary Design
- Hydraulic analysis
- Detailed Design
- Permitting
- Construction Phase Services including RPR
- Startup Support Services
- Cost Estimation
- Civil Site Design

Meadow Woods Reclaimed Water Pump Station

Orange County, Florida

Black & Veatch provided the engineering services including study, design, permitting, bidding, and construction phase services for the Meadow Woods Reclaimed Water Pump Station. Meadow Woods was a water treatment facility that was owned and operated by Orange County, Florida. Because of the Southern Regional Water Supply Facility, near this facility, Orange County decided to make Meadow Woods into a reclaimed water storage and booster pump facility. The major project elements included:

- Retrofit of existing high service pumps with new VFDs and new appurtenances
- Improvements to the existing two 1 MG storage tanks
- Removal of the chemical feed facilities
- New 16" reclaimed water pipeline from the high service pumps to the reclaimed distribution system
- Electrical improvement
- Connection of the system to the County's reclaimed SCADA system
- Rerouting of the raw water wells to the new raw water main to Southern Regional
- New well houses at the two wells

KEY TEAM MEMBERS

Bobby Burchett, Richard Taylor, Steve King, Ron Parker, Ed Vogt, Brad Vanlandingham

YEAR COMPLETED

2015

CLIENT REFERENCE

Mark Ikeler, P.E.
Project Manager
(407) 254-9705
mark.ikeler@ocfl.net

Brackish Groundwater Desalination Program

San Antonio, Texas

Black & Veatch performed as the Program Manager (PM) for this important program and have completed preliminary design, final design, construction and startup/commissioning phase services. The San Antonio Water System (SAWS) had developed the Brackish Groundwater Desalination Program (BGD) to supplement and diversify its water resources portfolio in an effort to meet the City of San Antonio's water needs over the next 50 years. The BGD utilizes previously untapped and plentiful brackish groundwater sources of water to supply the treatment plant which is located in southern Bexar County.

The major project elements include:

- Groundwater wells
- Raw water conveyance systems
- RO treatment; including pretreatment, RO high pressure pumping
- RO post-treatment
- 7.5 MG pre-stressed concrete ground storage tank
- High Service Pumping
- Finished water piping
- Concentrate deep injection wells
- New Buildings for the RO WTP equipment

Phase 1 of the BGD Facility has a capacity of 10.0 mgd. Future expansions can bring the facility to 25 mgd. Phase 1 also included a lengthy startup and commissioning phase, which consisted of testing the system after it was complete to ensure compliance with the design documents

RELEVANT PROJECT ELEMENTS

- 10 mgd Multi-Stage RO Treatment Plant
- RO Pretreatment
- RO Pressure Pumping
- Chemical Storage and Feed Systems
- Pre-Stressed Concrete Storage Tanks
- High Service Pump Station
- Operations and other Buildings
- Plant Piping
- Distribution System Piping
- Deep Injection Wells
- Groundwater Wells
- Preliminary Design
- Detailed Design
- Permitting
- Construction Phase Services
- Startup Support
- Pilot Testing
- Emergency Power Generators

KEY TEAM MEMBERS

Ron Parker, Vasu Veerapaneni

YEAR COMPLETED

2017

CLIENT REFERENCE

Esther Harrah
(210) 233-3457
Esther.Harrah@saws.org



Southeast Water System Improvements

Bloomington, Indiana

Black & Veatch performed the preliminary and detailed design, contract document preparation, bid phase, permitting, construction phase engineering, resident engineering, and SCADA configuration services for the construction of the Southeast Water System Improvements for the City of Bloomington, Indiana. The purpose of the project is to provide increased distribution capacity to convey finished water to meet increasing water demands. The major elements of the project include:

- 2 MG concrete water storage tank
- 12 mgd pump station (expandable to 24 mgd)
- Approximately 44,000 linear feet of 36", 30" and 24" transmission mains
- Emergency stand-by engine generator
- New pump station building, including HVAC and all other building mechanical

Black & Veatch completed alignment evaluation; hydraulic analysis, and pipe material evaluation for the water transmission mains. Black & Veatch also provided technical design, and 3D modeling plus technical facilitation of all structures including architectural, structural, mechanical process equipment/piping, HVAC, plumbing and electrical for three new structures:

- Pump Station with Engine Generator/Screen Room;
- Storage Water Tank; and
- Flow Control Valve Vault.

RELEVANT PROJECT ELEMENTS

- 2 MG Concrete Water Storage Tank
- 12 mgd High Service Pump Station
- Emergency Power Generator
- New Pump Station Building
- HVAC
- SCADA
- Electrical Systems
- I&C Systems
- Preliminary Design
- Hydraulic Analysis
- Detailed Design
- Permitting
- Construction Phase Services
- Resident Project Representative Services
- Startup Support

KEY TEAM MEMBERS

Adam Westermann, Chad Cecrle, Bob Willet, Brian Bergdall, Andrew Truman, Raghu Kadava, Larry Pittman

YEAR COMPLETED

2014

CLIENT REFERENCE

Mike Hicks – Capital Projects Manager
(812) 349-3623
hicksm@bloomington.in.gov

PROJECT TEAM MATRIX

TEAM MEMBERS	RELEVANT PROJECT EXPERIENCE										
	1	2	3	4	5	6	7	8	9	10	11
Rafael Frias	■	■			■	■					
Andy Westfall	■	■		■	■	■	■				
Amanda Schwerman	■					■					
Mark Martin	■				■	■					
Mike McGee	■				■	■					
Nick Eckhardt	■	■							■		
Bobby Burchett		■			■		■	■	■		
Richard Taylor	■	■	■	■	■	■	■	■	■		
Steve King		■		■	■	■	■		■		
Vasu Veerapaneni	■	■		■				■		■	
Mike Tache		■				■					
Ron Parker		■		■	■	■	■	■		■	
Brad Vanlandingham	■		■		■	■	■		■		

PROJECT EXPERIENCE KEY			
No.	Title of Example Project	No.	Title of Example Project
1	East Water Storage Tank and Booster Pump Station | Fort Myers, FL	7	Eldridge-Wilde H2S Treatment Facility and Pinellas POC Updates Project | Tarpon Springs, FL
2	Dunedin Water Treatment Plant Refurbishment Project | Dunedin, FL	8	Tampa Bay Water RO Desal WTP Engineering Services | Tampa, FL
3	Southern Regional Water Supply Facility Orange County, FL	9	Meadow Woods Reclaimed Water Pump Station Orange County, FL
4	RO WTP Recovery Pilot and Feasibility Study | City of Venice, FL	10	Brackish Groundwater Desalination Program San Antonio, TX
5	1991 Facility Rebuild | Peace River Manasota Regional Water Supply Authority, FL	11	Southeast Water System Improvements Bloomington, IN
6	RO Treatment Plant Engineer of Record Fort Myers, FL		

Ability to Perform

Black & Veatch is committed to providing the City of Venice high quality services in an expeditious manner under this contract. We have developed a team and approach with the intent of maximizing the efficiency of our work and enhancing our ability to be highly responsive. This section summarizes our approach to timely execution, focusing on the key elements identified in the City's RFQ.

IN-HOUSE EXECUTION

Black & Veatch provides comprehensive engineering services in support of water, wastewater, and reclaimed water systems, which enables us to deliver complex, multi discipline projects in an efficient and well-coordinated manner. Our team includes in-house resources to coverall all engineering disciplines as well as specialized technical services such as acoustical modeling, air permitting, chemical feed, and startup & commissioning. As one of the most diversified engineering and construction companies in the industry, Black & Veatch provides access to specialized expertise to address any unforeseen challenge that arise on these projects.

We have included two quality subconsultants to provide anticipated support services such as surveying, geotechnical investigation, utility locations, and environmental permitting. All of our subconsultants are local and have successful prior experience with the City of Venice.

Black & Veatch's team includes in-house resources for all engineering disciplines and specialty resources such as acoustical modeling to support good-neighbor design

FIRM AND SUBCONSULTANT OFFICE LOCATIONS

We will manage and lead the execution of projects under this contract from our Tampa regional office located at 3405 W. Dr. Martin Luther King, Jr., Blvd. The Tampa office is our largest Florida office of professionals focused on water and water and wastewater projects. We have been serving clients on the West Coast of Florida from our Tampa office since 1985, and in Florida since 1957. Overall, Black & Veatch has more than 60 professionals in the Tampa Bay area and over a 300 in Florida, working from 6 office locations.

Through our previous work on the RO Pilot Study and Water Master Plan projects, Black & Veatch has demonstrated our commitment to being in Venice when there is a need to collaborate face to face with the City or visit facilities in support of our projects.

The accompanying map shows the location of Black & Veatch's nearby offices and those of our subconsultants.

TEAM MEMBER LOCATION

Black & Veatch's team for this project is comprised of largely local professionals with convenient access to the City of Venice.

The large majority of work under these projects is anticipated to be performed by professionals based in our Tampa and Fort Myers offices. The table summarizes office locations of all team members indicated in our organizational chart.

KEY TEAM MEMBER	PROJECT ROLE	LOCATION	FLORIDA PROFESSIONAL
Rafael Frias	Client Services Director	Sunrise, FL	✓
Andy Westfall	Client Manager	Tampa, FL	✓
Amanda Schwerman	Assistant Client Manager | Hydraulic Analysis | Energy Optimization	Tampa, FL	✓
Mark Martin	Quality Control	Fort Myers, FL	✓
Mike McGee	Project Manager	Fort Myers, FL	✓
Nick Eckhardt	Facility Design/ Prestressed Tanks	Tampa, FL	✓
Bobby Burchett	Pump Design/ Optimization	Tampa, FL	✓
Ron Parker	Water Quality	Tampa, FL	✓
Richard Taylor	Electrical/I&C/SCADA	Tampa, FL	✓
Ryan Eck	Civil/Mechanical/Site	Tampa, FL	✓
Brad Vanlandingham	Structural	Orlando, FL	✓
Dennis Trupka	Architectural	Kansas City, MO	
Michelle Roth	HVAC	Kansas City, MO	
Steve King	Project Manager | Permitting | Zoning	Tampa, FL	✓
Chad Barker	Cost Estimating	Orlando, FL	✓
Danny Cashwell	Construction Inspection	Dania Beach, FL	✓
Ryan Baker	Acoustical Modeling	Omaha, NE	
Ajay Kasarbada	Air Permitting	Overland Park, KS	
Vasu Veerapaneni	Water Treatment Process/ RO Membranes	Kansas City, MO	
Mike Tache	Facility Design	Tampa, FL	✓
Ed Vogt	Chemical Feed	Kansas City, MO	
Driggers Engineering	Geotechnical Investigation	Sarasota	✓
George F. Young, Inc.	Surveying/SUE Environmental Assessment/ Wetlands Rezoning/Traffic Study Environmental/Stormwater Permitting	Lakewood Ranch	✓

TEAM AVAILABILITY

Black & Veatch routinely forecasts projected workload to ensure that our projects have adequate committed staff and our professionals have an appropriate level of work.

Black & Veatch is committed to providing the key staff proposed for this project, as well as other local, regional, and national resources required to complete the project tasks within a schedule agreed to by the City.

Black & Veatch manages staffing resources utilizing a system called 'StafTrack', in which we maintain and regularly update a database of current and upcoming projects, the specific professional resources assigned to each project, and the monthly time commitment of each professional for those projects. This database rolls up to a projected total month-by-month project commitment for each of our professionals. A monthly evaluation of the data helps to identify any disparities in workload and allows for the implementation of timely adjustments to ensure that upcoming projects have adequate and appropriate resources to meet schedule requirements.

Based on our current level of commitment and the upcoming completion of several projects, the Black & Veatch team has sufficient available capacity to commit to this project, as illustrated in the table to the right. In addition, Black & Veatch's team is growing. In the last year, we have added seven new team members focused on water utility clients to our Tampa office and two new team members in our Fort Myers office. This includes addition of engineers with experience levels from new graduates to over 30 years of experience. Overall, we have more than 60 professionals in the Tampa Bay area with plans to bring on additional key resources in the months ahead. Between our experienced local professionals and staff of more than 11,000 world-wide, Black & Veatch has ample resources to supplement our core committed project team, should the need arise.

KEY TEAM MEMBER	AVAILABILITY*
RAFAEL FRIAS Client Services Director	40%
ANDY WESTFALL Client Manager	60%
AMANDA SCHWERMAN Assistant Client Manager	60%
MARK MARTIN Quality Control	60%
MIKE MCGEE Water Booster Pump Station Project Manager	80%
NICK ECKHARDT Facility Design/ Prestressed Tanks	70%
BOBBY BURCHETT Pump Design/ Optimization	40%
RON PARKER Water Quality	70%
STEVE KING Second Stage RO Treatment Upgrade	70%
RICHARD TAYLOR Electrical/I&C/SCADA	60%
MIKE TACHE Facility Design	60%
VASU VEERAPANENI Water Treatment Process/ RO Membranes	40%

** Approximate average forecasted availability over a two-year project duration*

COMMITMENT AND HISTORY OF PROVIDING EXPEDITIOUS SERVICES

Black & Veatch is committed to providing the City responsive service and completing projects expeditiously under this contract. This is supported by the location of our office, team, and the comprehensive capabilities of our in-house resources.

The table below summarizes recent examples of successfully meeting aggressive project schedules when requested by our clients.

PROJECT	PROJECT ROLE
PEACE RIVER 1991 Water Treatment Facility Upgrades	This design was completed on a fast track basis to align the construction schedule with the dry season when disruption of plant operation could be accommodated. Black & Veatch completed preliminary design on schedule in 5 weeks and completed detailed design on schedule in only four months.
TAMPA BAY WATER Morris Bridge Point of Connection Pipe Repair Project	Tampa Bay Water experienced a pipe break at a point of delivery in their Regional Transmission System. Understanding the need to get the pipe back in service as quickly as possible, Black & Veatch visited the site; inspected the damage; developed and submitted a design memorandum; and developed drawings, specifications, and an opinion of probable construction cost, all within one week of the client's request for our assistance. Construction notice to proceed was issued three weeks later, and substantial completion was achieved in 60 days. Repairs included the replacement of several sections of above- and below-grade piping, pipe restraints, installation of valves, and construction of new concrete pipe supports.
HILLSBOROUGH COUNTY Northwest AWWTPs Odor Control and Noise Abatement Study	Black & Veatch performed an evaluation of needed odor control, noise abatement, and aesthetic improvements at three wastewater treatment plants. Field work and report development were completed within 3 weeks of notice-to-proceed to comply with regulatory requirements.
CITY OF LAKELAND Disinfection Facilities Upgrades Design	Black & Veatch met every schedule milestone for timely completion of preliminary design, detailed design, and bidding of this time sensitive project with public safety implications.
CITY OF FORT MYERS East Water Reclamation Facility Planning Phase and Rezoning	The necessary re-zoning process, which can typically take years, was completed in 11 months.

Additional Considerations

PRELIMINARY PROJECT APPROACH

Black & Veatch has successfully executed thousands of design and construction projects related to an array of water treatment, pumping, and conveyance infrastructure. Projects have ranged from a few thousand dollars to hundreds of millions of dollars of water infrastructure. Through this experience, we have developed a proven approach to efficient execution of work on such projects.

For purposes of providing the City a concise response to the Request for Qualifications, we have not included a lengthy description of the detailed work steps involved in executing routine design and construction phase services projects. Rather, in this section we have highlighted our approach to a few unique/critical project elements and innovative approaches our team will employ to enhance the value provided to the City in the implementation of these projects.

DESIGN FOR ENERGY OPTIMIZATION

Black & Veatch is an industry leader in both the water and energy sectors. Our combined water & energy expertise enables Black & Veatch to deliver innovative energy-saving solutions to our water utility clients. Our local experience includes performing energy-efficiency studies for Pinellas County, Hillsborough County, Peace River MRWSA, the City of Hollywood, and the City of Venice (in progress).

We will leverage our water and energy expertise to deliver innovative solutions to optimize energy use and cost at the Water Treatment Plant and Booster Pump Station.

ENR RANKINGS 2018 TOP DESIGN FIRMS

OVERALL RANKINGS

10 Top 500 Design Firms

TOP DESIGN FIRMS IN POWER

1 Top 25 in Fossil Fuel

2 Top 50 in Power

3 Top 5 in Operation and Maintenance

4 Top 25 in Transmission and Distribution Plants

6 Top 10 in Hydro Plants

TOP DESIGN FIRMS IN ENVIRONMENT

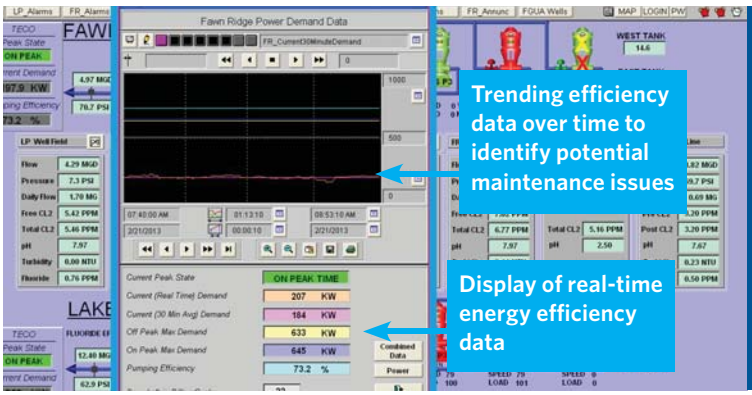
4 Top 20 in Water Treatment and Desalination Plants

4 Top 50 in Water Supply

4 Top 50 in Sewer and Waste

4 Top 25 in Wastewater Treatment Plants

6 Top 20 in Transmission Lines and Aqueducts



ENERGY EFFICIENT ENHANCEMENTS

Black & Veatch implemented energy efficiency enhancements at Hillsborough County's Lake Park Water Pumping Station. By adding low cost instrumentation and operator interfaces, we provided user-friendly tools to support operator decision-making that optimizes pumping efficiency, reduces on-peak energy costs, and avoids unnecessary utility demand charges.

Black & Veatch will help the City evaluate the merits of constructing a solar Photovoltaic (PV) power system on available land at the new pump station site to provide power for that facility.

Potential solar PV concepts could range from a small demonstration facility, to a facility designed to peak shave, to a facility sized for net-zero energy operation of the pump station. As an example, the net-zero facility would leverage Florida's net-metering program and would be sized to produce sufficient excess power in the day time to offset use of utility-supplied power at night. Based on the 175 kVA electrical load indicated in the Booster Pump Station Alternatives Evaluation, such a facility would require about 4 acres of land and would produce about 1.5 million kwh/yr. The facility sizing could be reduced based on average running electrical load determined during design. Through an evaluation of life cycle costs and other criteria, we will help the city select the optimal type and size facility.

SOLAR POWER EXPERTISE

Black & Veatch helped Hillsborough County evaluate the life cycle cost of a 2 MW solar power plant to power their Valrico AWTP and has been the design-builder for seven completed and current solar photovoltaic power generation plants in Florida with a combined capacity of more than 500 Mega-watts. This includes 74.5 Mega-watt facilities in Manatee and Desoto Counties.

DESIGN TO PROVIDE GOOD-NEIGHBOR CONSIDERATIONS

Construction of the Booster Pump station on the proposed property will require rezoning the property for the appropriate land use. Fostering community acceptance will be an important part of that process. Black & Veatch is experienced at addressing all aspects of good-neighbor design to promote community support. We will work with the City to consider numerous opportunities to develop the pump station site in a manner that enhances the aesthetics and good-neighbor elements. Some opportunities include:

- Architectural treatment of the pump station building and / or tank to match the City's adopted style or blend in with surrounding architecture.
- Design the tank with consideration to balancing tank footprint and tank height to minimize visual impact.
- Provide perimeter berms and landscape buffers for visual screening and/or perform visual modeling to confirm adequacy of natural vegetation.
- Incorporate environmental site features such as created wetlands or upland habitat.
- Acoustical modeling and design to avoid off-site noise concerns.

Design site lighting to minimize off-site light impacts. Black & Veatch has in-house expertise in acoustics and acoustical modeling. We will perform modeling of the sound-producing equipment such as the pumps and engine generator to determine the need for any sound attenuation features necessary to ensure code compliance and avoidance of off-site noise nuisance.

GOOD-NEIGHBOR SOUND MITIGATION

Good-neighbor design was paramount for a recent Class AA Biosolids and Energy Recovery Project. Black & Veatch performed an acoustical study that included measuring current sound levels and modeling future sound levels associated with proposed new equipment. The results provided information to support the specification of equipment requirements and the design of noise dampening features to protect the nearby college campus and neighborhood from sound pollution.

THOUGHTFUL AESTHETIC DESIGN

The Black & Veatch team successfully achieved public acceptance and site rezoning of a water reclamation facility site for a local utility. The site plan was strategically developed to incorporate environmentally friendly features as well as community walking trails. Thoughtful architecture and landscaped berms were incorporated for visual aesthetics. The team leveraged 3-D modeling to illustrate the expected off-site views to the public and the Zoning Board.

MAINTENANCE OF OPERATION OF THE WTP

A critical element of the Second-stage RO System expansion is maintaining operation of the plant throughout construction. Our local team has recently been involved in two major WTP rehabilitation projects including the ongoing Dunedin RO WTP Refurbishment project, and we have a proven approach to developing designs in parallel with a construction sequencing plan to ensure facilities can be constructed with no disruption to normal operations. Ron Parker, who has more than 30 years' experience in WTP operations, will lead the development of a construction sequencing plan that avoids plant disruptions. Some elements of our approach include:

- As part of the RO Efficiency study, we have already identified a new facility configuration that leverages existing building spaces for installation of new RO skids without disturbing existing processes.
- We will begin construction sequencing planning early in the design process and progress it in parallel with the design. Construction sequence planning will involve design, operations, and construction professionals, in collaboration.
- Should substantial electrical system refurbishment accompany the RO system improvements, the design will include identification of new building footprint while existing electrical equipment remains in service. A potential solution includes relocation of the engine generator to an outdoor enclosure, freeing up building space for new electrical equipment. Our local team has completed numerous successful projects involving complete electrical system replacement at treatment plants and pump stations.
- We have identified a potential opportunity to re-purpose existing MCC at the WTP to serve the new second stage booster pumps. The Water Master Plan shows that MCCs installed for future high service pumps will not be needed for that purpose for more than 20 years. Re-purposing this equipment will save capital cost and facilitate construction sequencing.

OPTIMIZED DISTRIBUTION SYSTEM WATER QUALITY

We will leverage the recent master plan water quality analysis and our team's experience to assess the benefits of pump station features such as tank mixing and optimize the chemical trim facilities. This will include evaluating the best technologies available for storage tank mixing to achieve optimum stored water quality.

Considerations will also be given to pre-post storage tank chlorine residual boosting, in-tank residual boosting, and THM control during emergency activation with possible blowers/aerators. The sodium hypochlorite feed system will be sized for flexibility between the City/County supplies with automated controls, while the interconnect will be studied for the most feasible option to offset the differences in pressure and disinfectant residuals. Our team has extensive experience evaluating water quality / blending challenges in a regional distribution system through 20 years working as Tampa Bay Water's System Engineer. This will be important for understanding water quality challenges associated with blended water from the emergency interconnect. Water quality considerations are not limited to chlorine residual, but also include distribution system issues such as pipe corrosion and precipitation.

Ron Parker and Amanda Schwerman recently teamed to analyze Desoto County's water distribution system and identified water quality solutions to help the County to reduce flushing volume.

BENEFITS OF CONSTRUCTION EXPERIENCE AND RESOURCES

Black & Veatch is one of the most diversified contractors in the industry, having performed more than $1 billion in design-build projects in the U.S. over the last five years. In Florida, our local team supported design and construction of a new raw water intake pump station for Tampa Bay Water's Seawater Desalination WTP, and we are currently working as design-builder for the City of Dunedin's RO WTP Refurbishment project.

Black & Veatch is an industry-leading contractor. We will leverage our construction expertise to provide value-added services beyond the capabilities of most engineering firms.

We will leverage our construction expertise and resources to provide value-added services that are beyond the capabilities of most engineering firms:

- Innovative construction sequencing to maintain operation of the WTP throughout construction
- Value-engineering & constructability reviews led by experienced construction professionals
- Procurement assistance with owner-pre-purchase to save time and sales tax costs
- Expert advice on alternative project delivery options
- Designs that promote safety during construction as well as operation
- Highly accurate construction cost opinions

Black & Veatch's construction estimating expertise and database tools enable us to develop highly accurate construction cost estimates. The following table provides some examples of Black & Veatch's recent cost estimating accuracy:

CLIENT	PROJECT	OPCC	BID	VARIANCE
St. Petersburg	Oberly & Washington Terrace PS	$ 7,939,000	$7,770,000	2%
St. Petersburg	NWWRF Electrical Upgrade	$ 4,650,000	$4,950,000	6%
St. Petersburg	WRD Facility Backup Power Imp.	$ 436,830	$450,000	3%
St. Petersburg	SWWRF Engine Generator & Electrical	$ 10,500,000	$10,000,000	5%
Hillsborough County	South County Repump Station WTM	$ 5,551,000	$5,290,000	4%
Hillsborough County	Nature's Way WW Master PS Expansion	$ 2,541,000	$2,535,488	0%
Hillsborough County	Williams Rd WM Extension	$ 1,194,950	$1,187,042	1%
Lakeland	T.B. Williams WTP Control Sys. Replacement	$ 1,990,000	$1,950,000	2%

EXPEDITED DESIGN THROUGH WORKSHOP APPROACH

We recognize the importance of obtaining early input from City staff in order to make decisions on optional design approaches to best meet the City's goals. Black & Veatch proposes an innovative workshop approach to streamline the decision-making process and shorten the design phase in the process. Under this approach, Black & Veatch would facilitate a collaborative full-day or multi-day workshop early in the preliminary design phase. The workshop would be attended by key engineering team members including select discipline leads, as well as City operations, maintenance, engineering and management staff. This will enable immediate site investigations, evaluation and discussion of design options with all stakeholders present. The goal will be to reach consensus on key design elements to achieve a fast start to the design process. Our team utilized this approach to expedite the design of the Dunedin RO WTP Refurbishment project and Peace River 1991 Water Treatment Facility Rebuild project.

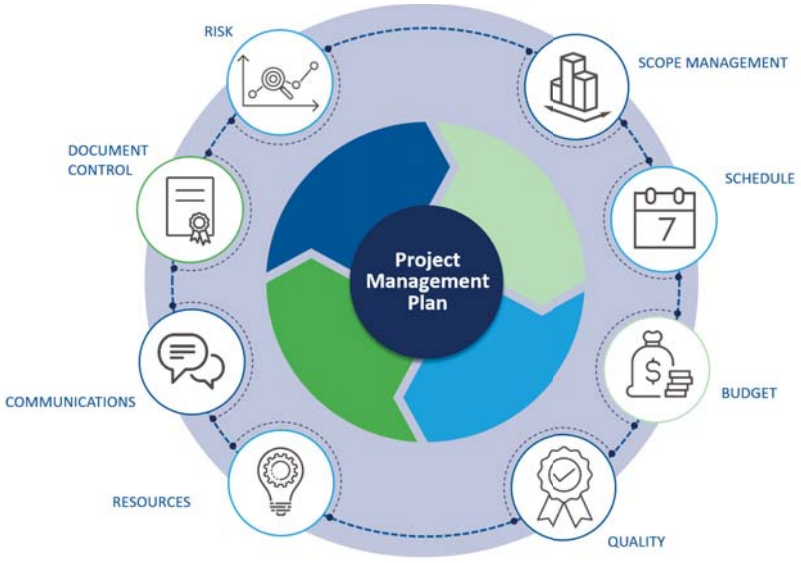
COLLABORATIVE WORKSHOP APPROACH

Black & Veatch utilized the Preliminary Design Workshop approach for the Peace River Facility 1991 Rebuild project. We were able to complete the preliminary design in only five weeks and achieved bid ready documents in only four months.

PROVEN PROJECT MANAGEMENT AND PROJECT CONTROLS

Black & Veatch is committed to producing high-quality deliverables on this project and delivering them on schedule and budget. As described below, we have developed a management approach and project controls tools and procedures to support successful management of quality, schedule and budget.

Quality Control. Black & Veatch employs a strict program of QA/QC in alignment with the principals of ISO 9000 standards. Our QA/QC program covers all aspects of project management and execution from performing thorough QA/QC reviews of all project deliverables, to verifying the secure storage of project documents, to confirming that we have executed all commitments covered in our project scopes of services. Projects are routinely audited to verify compliance with the company's QA/QC standards, and teams are held accountable for any deficiencies.



Black & Veatch understands that Quality control is our job, not the City's.

On these projects, our QA/QC reviews will be led by Mark Martin. Mark is a Florida-based professional with more than 30 years of experience in design and construction of a wide range of water and wastewater facilities. Mark with perform the Civil and process mechanical reviews and coordinate supporting reviews by professionals with expertise in the various engineering disciplines.

In accordance with Black & Veatch's QA/QC program, an early project management effort will involve the creation of a Project Workflow Model specific to the Booster Pump Station and RO System Upgrade projects. Black & Veatch's Project Workflow Model system was developed based on the experience and lessons learned from 100 years of complex multi-disciplined design projects. It establishes an effective sequence and schedule for progressing design steps to ensure that design criteria and decisions are established timely to support subsequent design tasks. By following the Project Workflow Model, we will maximize quality and efficiency by avoiding design conflicts and rework.

Schedule Control. We will work with the City during scope development to establish a schedule that will meet the City's goals. The schedule can be developed using Primavera, Microsoft Project, or other application, as preferred. Our team is structured with substantial local resources to efficiently execute the project. However, Black & Veatch's vast resources can be leveraged to meet an aggressive schedule if beneficial to the City.

Budget Control. Black & Veatch and our management team have a strong record of completing projects within budget.

State-of-the-art project controls, systems support, schedule and budget management help our team provide responsive service to the City.

Project Managers have access to an array of tools to facilitate tracking and management of project costs. EcoSys, Black & Veatch's customized project management system, is an earned-value management-based system that enables the establishment of control accounts so that the costs can be tracked and managed by both task and work group (such as engineering discipline). Project Managers have access to timely information on project labor and expense costs and schedule / budget status through a convenient "dashboard" interface. On the recent WTP RO Recovery Pilot Study project, Black & Veatch completed all scoped services more than $50,00 under budget. The City was able to expand our scope with no additional funding, and we provided additional value to the City performing related engineering services

Document Control. Black & Veatch utilizes the ProjectWise document management system which provides a secure environment for storage and retrieval of drawings, specifications, reports, data, etc. Files can be accessed by any team member via their computer, whether working in the office, at home, or at a plant site. This system provides security, avoids document loss, and supports efficient production. If desired, we will configure an externally accessible ProjectWise site to share critical project information with the City.

Required Forms, Certificate of Insurance, Certifications

- Qualifications Statement
- Project Team
- Public Entity Crimes Form
- Drug Free Workplace Form
- Indemnification/Hold Harmless Statement
- Certification Regarding Debarments, Suspension, Ineligibility, and Voluntary Exclusion
- Conflict of Interest and Litigation Statement
- Non-Collusion Affidavit
- Certificates of Insurance
- Licenses
- Signed Addenda

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:
- ☒ Corporation
- ☐ Partnership
- ☐ Individual
- ☐ Joint Venture
- ☐ Other

SUBMITTED BY:

NAME: Black & Veatch Corporation
ADDRESS: 3405 W. Dr. M.L. King Jr. Boulevard, Suite 125
PRINCIPLE OFFICE: Tampa, FL 33607

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: Black & Veatch Corporation

   The address of the principal place of business is: 11401 Lamar Avenue, Overland Park, KS 66211

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

   a. Date of Incorporation: 1998

   b. State of Incorporation: Delaware

   c. President's Name: Cindy Wallis-Lage

   d. Vice President's Name: Rafael E. Frias

   e. Secretary's Name: Timothy Triplet

   f. Treasurer's Name: Angela Hoffman

   g. Name and address of Resident Agent: The Corporation Trust Company
   1209 Orange Street, Wilmington, DE 19801

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

   a. Date of Organization: N/A

   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?
   103 years | Black & Veatch was founded in 1915

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

Rafael E. Frias, Associate Vice President

ACKNOWLEDGEMENT

State of Florida } SS.

County of Hillsborough

On this the 1 day of November, 2018, before me, the undersigned Notary Public of the State of Florida, personally appeared Rafael Frias, PE Associate Vice President 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.

Sheree Z. Little
NOTARY PUBLIC, STATE OF FLORIDA

NOTARY PUBLIC
SEAL OF OFFICE:

(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

Notary Public State of Florida
Sheree Z Little
My Commission GG 120216
Expires 06/29/2021

PROJECT TEAM

TEAM NAME: Black & Veatch Corporation

FEDERAL ID No. 43-1833073

PRIME ROLE	NAME & CITY OF RESIDENCE OF INDIVIDUAL ASSIGNED TO THE PROJECT	NO. OF YEARS EXPERIENCE	EDUCATION, DEGREE (S)	FLORIDA ACTIVE REGISTRATION NOS.
CLIENT SERVICES DIRECTOR	Rafael Frias Sunrise, FL	21	M.S., Civil Engineering B.S. Biological Engineering	PE - 2004, FL, 61912
CLIENT MANAGER	Andy Westfall Tampa, FL	29	B.S., Civil Engineering	PE – 1994, FL, 47693
ASSISTANT CLIENT MANAGER	Amanda Schwerman Tampa, FL	13	M.S., Environmental Science and Engineering B.S., Engineering	PE – 2010, FL, 70751 Envision™ Sustainability Professional
QUALITY CONTROL	Mark Martin Fort Myers, FL	29	B.S., Civil Engineering	PE – 2007, FL, 67272
PROJECT MANAGER	Mike McGee Fort Myers, FL	27	M.S., Civil Engineering B.S., Mechanical Engineering	PE - 2007, FL, 67272
PROJECT MANAGER/ PERMITTING	Steve King Tampa, FL	18	B.S., Chemical Engineering	PE – 2012, FL, 74954
FACILITY DESIGN/ PRESTRESSED TANKS	Nick Eckhardt Tampa, FL	14	B.S., Civil Engineering A.A., General	PE – 2009, FL, 69144
PUMP DESIGN/ OPTIMIZATION	Bobby Burchett Tampa, FL	18	B.S., Civil Engineering	PE – 2006, FL, 64762 Envision™ Sustainability Professional
WATER QUALITY	Ron Parker Tampa, FL	37	B.S., Education A.A., General	
ELECTRICAL/I&C/ SCADA	Richard Taylor Tampa, FL	42	B.S., Electrical Engineering	PE – 1983, FL, 33376
WATER TREATMENT PROCESS/ RO MEMBRANES	Vasu Veerapaneni Kansas City, MO	26	Ph.D., Environmental Engineering M.S., Environmental Engineering	PE - KS, 17283
CIVIL/MECHANICAL/ SITE	Ryan Eck Tampa, FL	7	B.S., Civil Engineering	PE - FL, 82333
FACILITY DESIGN	Mike Tache Tampa, FL	9	M.S., Environmental Engineering B.S., Civil Engineering	PE - 2011, FL, 83893
STRUCTURAL	Brad Vanlandingham Orlando, FL	32	B.S., Civil Engineering	PE - 1991, FL 44795
ARCHITECTURAL	Dennis Trupka Kansas City, MO	39	B.A., Architecture	RA. - FL, AR 94845

PRIME ROLE	NAME & CITY OF RESIDENCE OF INDIVIDUAL ASSIGNED TO THE PROJECT	NO. OF YEARS EXPERIENCE	EDUCATION, DEGREE (S)	FLORIDA ACTIVE REGISTRATION NOS.
HVAC	Michelle Roth Kansas City, MO	37	B.S., Mechanical Engineering	PE - NC, SC, MD LEED with Specialty, BD+C
COST ESTIMATING	Chad Barker Orlando, FL	27	B.S., Civil Engineering	FL - Underground Utility and Excavation Contractor #CUC057098
CONSTRUCTION INSPECTION	Danny Cashwell Dania Beach, FL	17	Industrial Maintenance	N/A
ACOUSTICAL MODELING	Ryan Baker Omaha, NE	16	B.S., Agricultural Engineering	N/A
AIR PERMITTING	Ajay Kasarabada Overland Park, KS	21	M.S., Environmental Engineering B.S., Chemical Engineering	PE - 2001, MI, 6201048091
CHEMICAL FEED	Ed Vogt Kansas City, MO	24	B.S., Chemical Engineering	PE - 2012, NY, 090419 PE - 2004, AZ, 40453

SUB-CONSULTANT ROLE	COMPANY NAME AND ADDRESS OF OFFICE HANDLING THIS PROJECT	NO. OF YEARS EXPERIENCE	PROJECTED % OF OVERALL WORK ON THE ENTIRE PROJECT	NAME OF INDIVIDUAL ASSIGNED TO PROJECT
GEOTECHNICAL ENGINEER	Driggers Engineering Services, Inc. 6185 Danner Dr. Sarasota, FL 34240	36	3%	F. Jamie Driggers
SURVEYING/SUE ENVIRONMENTAL ASSESSMENT/ WETLANDS REZONING/ TRAFFIC STUDY ENVIRONMENTAL/ STORMWATER PERMITTING	George F. Young, Inc. 299 Dr. Martin Luther King Jr. St. N St. Petersburg, FL 33701	100	10%	*Ecology* | G. Jeffery Churchill, MS *Civil Engineer* | Mark A. Adler, PE, MBE *Civil Engineer* | Michael E. Rissman, Jr., PE, PSM, LEED AP *Traffic Engineer* | Jerry Dabkowski, PE *Survey* | F. Peter Lutz, PSM *Survey* | Michael J. Curley, PSM *SUE Manager* | Craig A. Polifrone *Landscape Architecture* | William J. Richmond, PLA, AICP

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, Rafael E. Frias, being an authorized representative of the firm of Black & Veatch Corporation, located at City: Tampa State: Florida Zip: 33609, 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: November 1, 2018

Phone: (754) 229-3049 Fax: (813) 281-0881

Federal ID#: 43-1833073

THIS PAGE MUST BE COMPLETED & SUBMITTED WITH OFFER

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 _____

November 1, 2018
Date

Contractor's Signature

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, Rafael E. Frias, being an authorized representative of the firm of

Black & Veatch Corporation located at City Tampa, State

Florida, Zip Code 33609 Phone: (754) 229-3049 Fax:

(813) 281-0881. Having read and understood the contents above, hereby submit

accordingly as of this Date, November 1, 2018, 2018.

Rafael Frias
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-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 1 day of November, 2018.

By: _____
Authorized Signature

Rafael Frias, PE Associate Vice President
Typed Name of Title

Black & Veatch Corporation
Recipient's Firm Name

3405 W. Dr. M.L. King Jr. Boulevard, Suite 125
Street Address

Tampa, FL 33607
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: Black & Veatch Corporation

Authorized Signature: _____

Name (print or type): Rafael E. Frias

Title: Associate 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.

NON-COLLUSION AFFIDAVIT

State of Florida }
SS.
County of Hillsborough

Rafael Frias being first duly sworn, deposes and says that:

1. He/she is the Associate Vice President, (Owner, Partner, Officer, Representative or Agent) of Black & Veatch Corporation 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:

Andrew A Westfall

By: _____

Rafael Frias
(Printed Name)

Associate Vice President
(Title)

ACKNOWLEDGEMENT

State of Florida

County of Hillsborough

On this the 1 day of November, 2018, before me, the undersigned Notary Public of the State of Florida, personally appeared Rafael Frias 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.

Sheree Z Little
NOTARY PUBLIC, STATE OF FLORIDA

NOTARY PUBLIC
SEAL OF OFFICE:

(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

Notary Public State of Florida
Sheree Z Little
My Commission GG 120216
Expires 06/29/2021

THIS PAGE MUST BE COMPLETED & SUBMITTED WITH OFFER

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/31/2018

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
Lockton Companies
444 W. 47th Street, Suite 900
Kansas City MO 64112-1906

CONTACT NAME: Max Faerber
PHONE (A/C, No, Ext): (816) 960-9718 **FAX (A/C, No):**
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Zurich American Insurance Company	16535
INSURER B: American Zurich Insurance Company	40142
INSURER C: Lexington Insurance Company	19437
INSURER D:	
INSURER E:	
INSURER F:	

INSURED
Black & Veatch Corporation
11401 Lamar
Overland Park, KS 66211
United States

COVERAGES **CERTIFICATE NUMBER:** 359581 **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			GLO 0139245 – Large Works/Small Works	11/1/2018	11/1/2019	EACH OCCURRENCE	$ $1,000,000
A	CLAIMS-MADE [X] OCCUR			GLO 4641367 – Divisional Works	11/1/2018	11/1/2019	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ $300,000
A	X Contractual			GLO 4641358 - Corporate	11/1/2018	11/1/2019	MED EXP (Any one person)	$ $10,000
	X PD & C/O & XCU						PERSONAL & ADV INJURY	$ $1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ $2,000,000
	X POLICY [ ] PRO-JECT [ ] LOC						PRODUCTS - COMP/OP AGG	$ $2,000,000
	OTHER:							$
A	AUTOMOBILE LIABILITY			BAP 4641355	11/1/2018	11/1/2019	COMBINED SINGLE LIMIT (Ea accident)	$ $1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	X OWNED AUTOS ONLY [ ] SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY [X] 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			WC 0139244	11/1/2018	11/1/2019	X PER STATUTE [ ] OTH-ER	
A	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [N]	N/A		WC 4641354 (ID, MA, WI)	11/1/2018	11/1/2019	E.L. EACH ACCIDENT	$ $1,000,000
B	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			WC 4641353 (AOS)	11/1/2018	11/1/2019	E.L. DISEASE - EA EMPLOYEE	$ $1,000,000
							E.L. DISEASE - POLICY LIMIT	$ $1,000,000
C	Professional Liability			026030198	11/1/2018	11/1/2019	Professional Limit	Each Claim and Annual Aggregate Limit: $1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Project #: THIS INSURANCE CERTIFICATE HAS BEEN ISSUED FOR INFORMATIONAL PURPOSES;

Please see page 2 for additional information

CERTIFICATE HOLDER
SAMPLE
SAMPLE
SAMPLE, SAMPLE SAMPLE
United States

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
Joseph M Arnold

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906	Black & Veatch Corporation 11401 Lamar Overland Park, KS 66211 United States
	EFFECTIVE DATE: 11/1/2018

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 **FORM TITLE:** Certificate of Liability Insurance

The General Liability Policy provides primary and non-contributory coverage.

The Automobile Liability Policy provides primary and non-contributory coverage.

Florida Board of Professional Engineers
2639 North Monroe Street, Suite B-112
Tallahassee, FL 32303-5268

Black & Veatch Corporation
11401 LAMAR AVE. P3F1
OVERLAND PARK, KS 66211

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

Black & Veatch Corporation

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: 228201902414 R

CA Lic. No: 8132

State of Florida

Board of Professional Engineers

Attests that

Rafael E. Frias III, 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: 228201917095 R

P.E. Lic. No:
61912

State of Florida

Board of Professional Engineers

Attests that

Andrew A. Westfall , 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: 228201911159 R

P.E. Lic. No:
47693

State of Florida

Board of Professional Engineers

Attests that

Amanda Kay Schwerman , 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: 228201917644 R

P.E. Lic. No:
70751

State of Florida

Board of Professional Engineers

Attests that

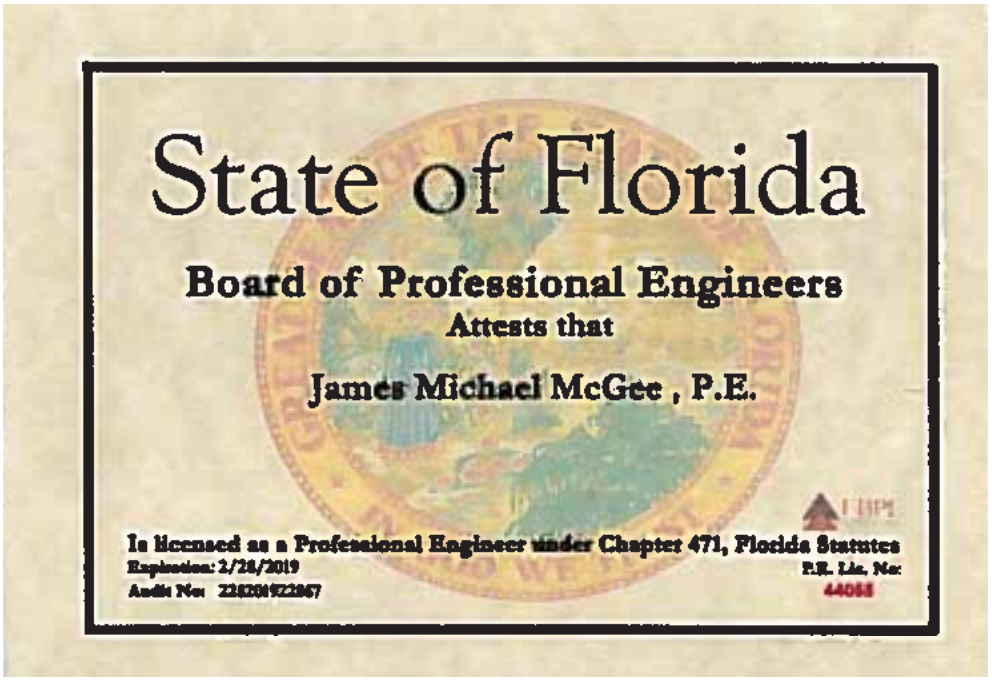
Mark Edward Martin , P.E.

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201914587 R

P.E. Lic. No:
67272



State of Florida

Board of Professional Engineers

Attests that

James Michael McGee , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019

Audit No: 228201922867

P.E. Lic. No:

44058

State of Florida

Board of Professional Engineers

Attests that

Nicholas Walter Eckhardt , 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: 228201910066 R

P.E. Lic. No:

69144

State of Florida

Board of Professional Engineers

Attests that

Robert Y. Burchett , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201914446 R

P.E. Lic. No:
64762

State of Florida

Board of Professional Engineers

Attests that

Richard Daniel Taylor , P.E.

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201903061 R

P.E. Lic. No:
33376

State of Florida

Board of Professional Engineers

Attests that

Steven Eric King , 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: 228201912337 R

P.E. Lic. No:
74954

State of Florida

Board of Professional Engineers

Attests that

Michael Nelson Tache , P.E.

Do not alter this document in any form.

FBPE

Is licensed as a Professional Engineer under Chapter 471, Florida Statutes

Expiration: 2/28/2019
Audit No: 228201935480

P.E. Lic. No:
83893

-Always verify licenses online at MyFloridaLicense.com-
This is your license. It is unlawful for anyone other than the licensee to use this document.

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

---

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:

Andrew A Westfall
Signature

Black & Veatch Corporation
Company

November 6, 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:

Andrew A Westgate
Signature

Black & Veatch
Company

11-15-18
Date

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

ANDY WESTFALL, P.E.
Client Manager | Primary Contact
3405 W. Dr. M.L.King Jr. Boulevard, Suite 125, Tampa, FL 33607
D +1 813-207-7910 | M +1 813-361-5504 | WestfallAA@bv.com