CITY OF FORT LAUDERDALE

Advanced Metering Infrastructure (AMI) Consultant Services

RFP 12648-1026| March 30, 2022

BLACK & VEATCH

Black & Veatch Corporation
3111 North University Drive, Suite 700, Coral Springs, FL 33065
P +1 754-229-3049- | E FriasRE@bv.com

March 30, 2022

City of Fort Lauderdale
Eric Martinez
Senior Procurement Specialist
100 N. Andrews Avenue, 6th Floor
Fort Lauderdale, FL 33301

RE: RFQ # 12648-1026 Advanced Metering Infrastructure (AMI) Consultant Services

Dear Mr. Martinez:

Black & Veatch Corporation (Black & Veatch) is pleased to submit this proposal to the City of Fort Lauderdale to recommend a path forward with your AMI system by developing an RF for a citywide AMI solution; helping the City select the most beneficial technology; assisting during contract negotiations on the best interests of the City; and ensuring successful implementation of the selected AMI system. An AMI system will be your critical connection with your customers for years to come and the critical hub for your smart water initiatives.

We are uniquely positioned to carry out the analysis outlined in our response to your RFQ. As a leading provider of water utility engineering and consulting around AMI, non-revenue water, and water quality, Black & Veatch provides the City with the widest range of subject matter experts and experience to this project.

A Platform For Customer Transparency, Increased Efficiency, And Reduced Costs

This project will provide transparency to your customers, provide more accurate/real-time billing data, increase operational efficiency through automation, facilitate proactive operations and maintenance, and ultimately reduce costs while increasing revenues for actual water usage.

Black & Veatch creates strategies for Utilities to achieve those goals and more. Our experience in AMI systems, Identifying the right components for your specific area/utility needs, and creating a plan to maximize value is the Black & Veatch difference.

Identifying and planning for the future benefits and capabilities in AMI requires experience, vision, knowledge of the industry direction, and understanding how to implement these future use cases. The success of the modern smart water utility relies on combining a high level of data analytics and digitalization with a greater diversity of infrastructure assets that must be actively managed. We will help the City in becoming a Smart Water Utility during this process by developing a Smart Water Roadmap that will identify and help plan for the continued integration of advanced metering, monitoring and diagnostic systems, and other infrastructure to provide the City with economic and reliability benefits.

Our proposed team to develop City of Fort Lauderdale's Next-Gen AMI Roadmap consists of industry-leading Black & Veatch consultants from several specialized practice areas, including:

- AMI, smart water technologies, Meter Data Management (MDM)
- CIS, customer engagement, billing operations
- Non-Revenue Water, Pressure and Leak Detection, Water Quality
- Advanced data analytics
- Network topologies
- RF analysis
- Cyber security

Rounding out the Black & Veatch team, Dickey Consulting brings local expertise in Stakeholder Engagement and Customer Outreach, and AECOM provides AMI advisory support, project management and controls expertise, as well as additional resources to support Black & Veatch during the implementation phase.

The City of Fort Lauderdale will have access to Black & Veatch's successful track record with the development and implementation of AMI programs.

The foundation of our proposed methodology is based on gathering the project's objectives from all the stakeholders, educating on the current AMI and water loss technologies, and providing detailed specifications. We will leverage our team's knowledge of AMI programs and processes. Our track record delivers high-quality AMI services to develop a holistic, high-value solution for the benefit of the City and its customers.

A critical aspect to delivering successful water system AMI, which is often overlooked, is selecting a firm with both AMI experience and a depth of experience managing and delivering projects for water utilities. This is a transformative investment by the City of Fort Lauderdale, and we understand how to manage all of the processes and not overlook the details. It is essential to know how to effectively collaborate with the City's staff and understand their expectations. All of this is critical to have confidence in your data for billing and display it to your customers.

We look forward to discussing how our partnership with the will provide you with focused, thoughtful, and professional advice to help you best meet your strategic objectives. Should you have questions with our response, please do not hesitate to contact our Project Manager, Mr. Tom Bohrer, at +1 330-808-0986; or by email at BohrerT@bv.com, or me at +1 954-465-6872; or by email at FriasRE@BV.com.

Very truly yours,

Rafael E. Frias III, P.E.
Associate Vice President
Black & Veatch Corporation

BLACK & VEATCH

CERTIFICATE OF OFFICER

I, Andrea C. Bernica, the Assistant Secretary of BLACK & VEATCH CORPORATION, a corporation duly organized and existing under the laws of the State of Delaware, United States of America, certify that the following is a true excerpt of the by-laws of the Corporation and that said by-laws have not been rescinded or modified, and is still in full force and effect.

> RESOLVED, any note, mortgage, evidence of indebtedness, contract, share certificate, conveyance, power of attorney, or other instrument in writing and any assignment or endorsements thereof, or guarantee of any other entity's performance under any such executed document, entered into between this corporation and any other person or company shall be valid and binding on this corporation, when signed by either the Chairman of the Board, the President or any Vice President, and, if attestation is required, by either the Secretary, Assistant Secretary, Chief Financial Officer, Treasurer or any Assistant Treasurer of this corporation. Any such instruments may be signed by any other person or persons in such manner as from time to time shall be determined by the Board.

I further certify that the individual named below is an officer of the company holding the titles indicated and have signature authority to sign, seal, deliver, negotiate, accept and enter into agreements, contracts and other instruments or documents by and on behalf of the Company.

Rafael E. Frias, Associate Vice President

IN WITNESS WHEREOF, I have hereunto set my hand and attached the corporate seal of BLACK & VEATCH CORPORATION this 1st day of March 2022.

BLACK & VEATCH CORPORATION
CORPORATE
SEAL
DELAWARE

Andrea C. Bernica

Andrea C. Bernica
Assistant Secretary

City of Fort Lauderdale • Procurement Services Division

100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

RFQ NO. 12648-1026

Advanced Metering Infrastructure (AMI) Consultant Services

ADDENDUM NO. 1

ISSUED: March 8, 2022

This Addendum is being issued to revise the Minimum Qualifications in Section 2.8 of the solicitation. It is hereby made a part of the Request for Qualifications and shall be included with all contract documents.

Acknowledge receipt of this Addendum by inserting its number and date on the CITB Construction Bid Certification Page.

A) Section 2.8.5 - Minimum Qualifications is revised as follows:

Proposers shall submit evidence that the technical members of the Project Team are appropriately licensed Engineers (any state).

All other terms, conditions, and specifications remain unchanged.

Erick Martinez
Senior Procurement Specialist

Company Name: Black & Veatch Corporation
(Please print)

Bidder's Signature: 

Date: March 8, 2022

City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
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RFQ NO. 12648-1026

Advanced Metering Infrastructure (AMI) Consultant Services

ADDENDUM NO. 2

ISSUED: March 29, 2022

This Addendum is being issued to revise the Microsoft Teams Link and to add a call-in phone number.

Acknowledge receipt of this Addendum by inserting its number and date on the CITB Construction Bid Certification Page.

A) Section 1.3 "Electronic Bid Openings" is revised as follows:

Microsoft Teams meeting

Join on your computer or mobile app

Click here to join the meeting

Or call in (audio only)

+1 954-686-7296,,425398140# United States, Fort Lauderdale

Phone Conference ID: 425 398 140#

All other terms, conditions, and specifications remain unchanged.

Erick Martinez
Senior Procurement Specialist

Company Name: Black & Veatch Corporation
(Please print)

Bidder's Signature: 

Date: March 29, 2022

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Executive Summary

FIRM BACKGROUND

Black & Veatch Corporation (Black & Veatch) has been providing continuous service to Florida clients since 1957. We are a leading global engineering, construction, and consulting company specializing in infrastructure development in water, energy, and telecommunications. Our mission of Building a World of Difference© through **innovation in sustainable infrastructure** makes us one of the world's largest and most diversified engineering firms. Founded in 1915, our employee-owned company has over 8,000 professionals working in more than 100 offices worldwide with projects in 70 countries on six continents.

Our clients benefit from our unique pedigree of highly respected water business professionals that work across all water sectors. Black & Veatch Consulting is a core business service, and **we are thought leaders in Water Technologies** and the impact on utilities.

The Black & Veatch professionals include experienced industry executives, senior analysts, and technology experts from across the water and technology industries. Our Advanced Metering Infrastructure (AMI) practice includes a team of individuals that comprise hands-on expertise in the entire life-cycle of AMI, starting with 1) strategy and business planning, 2) procurement of AMI, 3) implementation services of project management, networking/communications infrastructure expertise, public relations and customer communications, cybersecurity and compliance,

The City of Fort Lauderdale will benefit through our Team's practical and adaptive approach by utilizing our vast industry experience and ability to listen to the needs of the utility to create an successful AMI program, from RFP Creation all the way through the 20 year lifecycle.

OVERVIEW

LEGAL NAME
Black & Veatch Corporation

BUSINESS ENTITY
Corporation

FOUNDED **1915**

BROWARD COUNTY OFFICE
3111 North University Drive
Suite 700
Coral Springs, FL 33065

POINT OF CONTACT
Rafael Frias, III, PE
+1 954-564-6872
FriasRE@bv.com

300+
PROFESSIONALS IN FLORIDA

7
OFFICES IN FLORIDA

CORAL SPRINGS
CORAL GABLES
LAKE WORTH
FORT MYERS
ORLANDO
TAMPA
JACKSONVILLE

LACK & VEATCH
EADQUARTERS
11401 Lamar Avenue
Overland Park, KS 66211

meter/network deployment troubleshooting, process and organizational change management with an emphasis on AMI transformation.

A BROWARD-COUNTY BASED, PROJECT TEAM

The City of Fort Lauderdale will have both national experts and access to a local project Team with proven experience delivering AMI Consulting projects. Our Team is comprised of the following firms located in Broward County.

BLACK & VEATCH	Prime firm with expertise in Management Consulting in the AMI, Non-Revenue Water, and other technologies, supporting utilities procure for these services and ensuring successful implementation.
AECOM	Subconsultant with expertise supporting meter and system automation, improving utility operations, customer services, and project management and controls.
Dickey Consulting Public Relations · Project Management · Strategic Planning · Economic Development "Sustaining Communities"	A locally headquartered, M/WBE firm that specializes in public relations and outreach, as well as construction administration.

Our Team will work closely with the City and other stakeholders to meet the project's goals in a successful and timely manner. We are committed to providing responsive service by offering a local project manager and core project Team members that will be fully accessible to your staff. We will lead this contract out of the local Black & Veatch office and assign resources and subcontractors that combine both national expertise and local resources.

As required, additional nearby expertise and support will be provided from our additional Florida offices. We will provide specific technical expertise from other offices of our firm, as needed, to bring the best and latest concepts and technologies to the city of Ft. Lauderdale. **The City will benefit from Black & Veatch's local and national water technology experts by providing thought leadership and successfully developing the AMI program from requirement gathering through deployment.**

During the past seven decades, Black & Veatch has grown to include seven locations throughout the state, serving more than 60 public and private sector clients in South, Central, and North Florida. Black & Veatch has more than 100 professional engineers registered in the State of Florida who are backed by more than 200 additional engineers, scientists, technicians, and support staff and Black & Veatch's 100+ years of experience successfully completing projects.

BLACK & VEATCH FLORIDA OFFICE LOCATIONS

Project Leadership

With a reputation for providing innovative solutions and turning obstacles into opportunities, we offer a highly skilled Team of professionals to work with City staff on this AMI Consultant project. We offer the following Project Champions with a balance of expertise and local talent.

Rafael Frias, PE
Project Director
Coral Springs, FL

Tom Bohrer
Project Manager
Akron, OH

Marc Lipski
Vendor Manager
Atlanta, GA

Chris Barlow
PM/Project Controls
Coral Springs, FL

Andrew Chastain-Howley
Technology Specialist
Camden, ME

Key Elements of this Proposal

Black & Veatch stands ready to provide the following benefits to the City of Fort Lauderdale to make the AMI RFP Process and Deployment a success.

KEY ELEMENTS	TEAM FEATURES	BENEFIT TO CITY
Team Qualifications and Experience	Local AMI Team National Expertise Long-term South Florida Presence Experience in Broward County and the City of Fort Lauderdale AMI Technical Experience and Knowledge Proven public relations and outreach with City of Fort Lauderdale projects	Seamless extension of staff Customized delivery based specifically on Fort Lauderdale specifics Customer focused solutions Invested in program success
Qualifications of the Project Team	Full Complement of AMI technologies experience Project Manager with 15 years AMI strategy and deployment Excellent Communication Skills	Efficient project delivery Close collaboration and communication Continuous focus on City's success and responsive level of involvement
Project Approach	A needs Analysis of the city infrastructure and teams Educate on existing technology Develop criteria for 20 years of AMI technology Matching the right technology with the city needs	Quick start on the project Streamlined education and development of RFP Avoid AMI vendor traps Streamlined selection process Roadmap of technology for the future
Project References	Successful projects Relevant experience Past performance	Assurance of Team's ability to deliver and perform

Firm Qualifications and Experience

LEGAL FIRM NAME
Black & Veatch Corporation

BUSINESS STRUCTURE Corporation

BROWARD COUNTY OFFICE
3111 North University Drive, Suite 700
Coral Springs, FL 33065
Phone: +1 954-465-6872
Fax: +1 754-229-3045

FIRM FOUNDED 1915
YEAR WORK BEGAN IN FLORIDA 1957
FIRM YEARS EXPERIENCE 106
FLORIDA LICENSES
B&V Business Certificate F98000006965
B&V Engineering License 8123
B&V General Contractor's License F96000006223

WEBSITE www.bv.com

POINT OF CONTACT
Rafael Frias, III, PE
P: +1 954-465-6872 | E: FriasRE@bv.com
** Located in our Broward County office.*

RELATIVE SIZE OF THE FIRM

Licensed Engineers:	1,288
Technical Support Staff:	6,194
Administrative Staff:	1,280
Licensed Architects:	38

Your AMI Team, experienced at every level from cradle to grave.

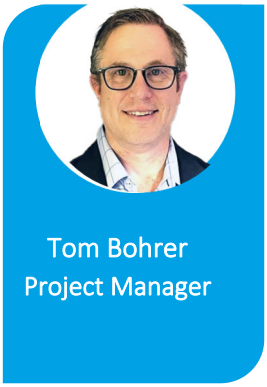
The Black & Veatch team is experienced in all aspects of AMI business case development and program implementation; our team will leverage our extensive experience and success to deliver the evaluations you seek. Since 1915, Black & Veatch has helped our clients improve the lives of people in more than 100 countries through consulting, engineering, construction, operations, and program management. Our workforce includes more than 8,500 professionals working on projects across major infrastructure markets.

Your AMI Project has specific requirements, and the solution selected should exceed the needs of both the utility and its customers. The solution selected should enhance the customer experience, improve planning capabilities, improve asset performance, reduce system losses, reduce bad debt costs, and improve business and billing processes.

We have a long history of working with clients similar to the City of Fort Lauderdale Public Works Department. This will make the AMI project a seamless extension of your staff. As an example, our team recently completed an RFP development for the City of Hollywood.

Our projects are scaled to meet your timeframe, utilizing our vast resources and knowledge to streamline, while educating

the City and providing the structure necessary to develop the RFP. A Black & Veatch RFP is **customized for the City, meets, or exceeds all goals, and educates the city so that they can own the results**. This ensures overall project success.



Tom Bohrer
Project Manager

The City will have access to a Project Manager with 26 years of experience in the AMI industry, supporting utilities with the entire lifecycle of AMI solutions, from the development of AMI technology strategy and subsequent RFPs, to vendor selection, contract negotiations, technology deployment and implementation, as well as serving as Owner's Representative during implementation. Tom will serve as an extension of the City's staff to ensure the City procures and implement the best AMI solution for the City's water utility.

The City will ensure successful AMI technology identification; vendor procurement and selection; and AMI solution implementation by having access to an AMI Project Manager with expertise and proven experience implementing AMI systems for utilities of similar size as the City of Fort Lauderdale's water utility.

Tom provides the City with the following expertise:

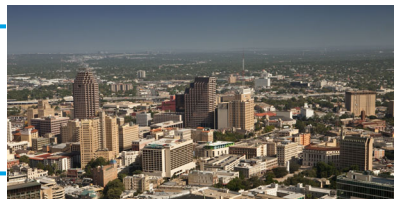
- AMI system strategy development
- Vendor RFP development, proposals evaluation, vendor selection, and contract negotiation for utilities like the New York Department of Environmental Protection
- Installation of AMI pilot systems
- Evaluation and implementation of Smart Utility technologies, such as pressure monitoring, acoustic leak detection, non-revenue water reduction, and Smart Sewer covers
- Deployment of AMI systems ranging from 16,000 to 350,000 connections
- AMI system monitoring after implementation
- Owner's Advisory and Representative support during the entire AMI system lifecycle

As Lead Project Manager, Tom will lead all aspects of the project execution and bring years of AMI subject matter expertise. He will be the main interface to the Ft Lauderdale project team and direct all efforts provided by the Black & Veatch team.

Tom is a focused, and solution-driven Senior Executive with over 14 years of progressive experience in the water industry with specialized expertise in Advanced Metering Infrastructure (AMI) technologies and smart infrastructure. Below are a select few that Tom has worked on throughout his career.

Sugar Land, TX; 2021- current

AMI Case Study, RFP and Implementation Services



Mr. Bohrer is leading the city of Sugar Land, TX AMI project which is currently in the AMI Vendor selection Process. He is serving as the engagement lead – developing the RFP, Vendor Selection, Contract Negotiations and System Monitoring. The project will include the installation of over 40,000 AMI modules, 15,000 new water meters and include both the network and software as a service.

PROJECT TEAM MEMBERS

Tom Bohrer

CLIENT REFERENCE

Brian Butscher
Director of Public Works
+1 281-275-2780
bbutscher@sugarlandtx.gov

Houston, TX; 2016-2021

AMI, Smart Water, Non-Revenue Water

Mr. Bohrer served as Account Manager and Consultant for the City of Houston and successfully installed a pilot system of AMI, pressure monitoring, leak detection, and Smart Sewer covers. Mr. Bohrer's work led to the development of a system-wide pressure monitoring plan. As of 2021, the City has begun to implement its first installations.

PROJECT TEAM MEMBERS

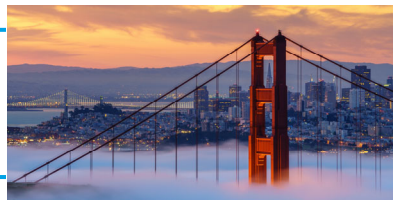
Tom Bohrer

CLIENT REFERENCE

Andrew Molly
Director Drinking Water Operations
+1 832-395-3785
Andrew.Molly@houstontx.gov

San Francisco, CA; 2008-2021

AMI Lifecycle, Leak Detection and Pressure Monitoring



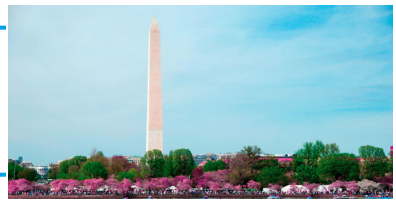
Mr. Bohrer served as the lead Project and Account Manager for multiple water products, including 180,000 AMI Modules and a wireless pressure monitoring project. During the deployment phase, many water meter issues were diagnosed and found. Mr. Bohrer created the Network diagram for the infrastructure necessary to get over 99% of all reads in a challenging RF/topography area. Not only did the network excel, but it also allowed them to future proof for future technologies

PROJECT TEAM MEMBERS
Tom Bohrer

CLIENT REFERENCE
Heather Pohl
Manager Business Services & Innovation
+1 415-550-4934
HPohl@sfwater.org

DC Water, D.C. 2008-2017

AMI Complete Lifecycle and Water Software



Mr. Bohrer served DC Water in multiple capacities as Project Manager, Account Manager, and System Analyst. During the multiple-year engagement, Mr. Bohrer, Redesigned and optimized the entire AMI network for efficiency. Working with the stringent Washington D.C. RF guidelines and noise profile to create a redundant collector system. Furthermore, Mr. Bohrer Analyzed a failing AMI network and created and implemented a plan to improve reception rates. After successful completion of the project, the city contracted to replace a 15 year old AMI System.

PROJECT TEAM MEMBERS
Tom Bohrer

CLIENT REFERENCE
Charles Kiely
Assistant General Manager
DC Water (retired)
Ckiely527@gmail.com

Redmond, OR; 2008 - 2021

AMI Lifecycle, Non-Revenue Water Technologies

Mr. Bohrer served as the lead Account Manager for multiple water products, including 16,000 AMI Modules, a wireless pressure sensor network to reduce non-revenue water, and an acoustic leak detection product. The City has followed Mr. Bohrer from 2 companies due largely to his technical ability to troubleshoot and solve the issues that arise during complex water technology projects.

PROJECT TEAM MEMBERS
Tom Bohrer

CLIENT REFERENCE
Josh Wedding
Water Utilities Manager
+1 541-948-7956
Joshua.Wedding@ci.redmond.or.us

Black & Veatch Experience Providing AMI Planning, Advisory, and Quality Assurance Services

CLIENT	TYPE			SPECIFIC SERVICES									
				METERS			NETWORK			CIS			
	AMR HYBRID METERING	AMI SMART METERING	MDM	TEST PROTOCOL	AMI FEASIBILITY	VENDOR SELECTION	TESTING	MONITORING	VENDOR MANAGEMENT	MAINTENANCE	INTEGRATION SERVICES	ANALYTICS
WATER												
Hollywood, FL (City of)		●			●						●	
Deerfield Beach, FL (City of)		●			●							
Miami-Dade, FL (County of)		●	●		●							
Cleveland Water, OH	●	●	●	●		●	●	●	●	●		●
EPCOR, AZ		●			●	●						
Fort Worth, TX (City of)	●	●							●			
Greenville Water System (GWS)	●					●			●			
Illinois American Water Company, IL	●								●			
Mountain View, CA (City of)		●	●		●							
Oakland County Water Resource, MI	●					●			●			
Sacramento Municipal Utility District, CA		●	●	●								
San Antonio Water, TX		●	●		●							
Scottsdale, AZ (City of)	●				●							
South Central CT Reg. Water Authority, CT	●	●	●		●							
Sugarland, TX (City of)		●			●				●			
ELECTRIC AND WATER												
Anaheim Public Utilities, CA		●		●			●	●	●	●		
Burbank Water & Power, CA		●					●	●		●		
Columbia Power and Water System, TN	●			●		●			●	●		
Fountain Valley Utilities, CA (City of)	●								●			●
Fort Collins Utilities, TX	●	●	●	●		●	●	●	●	●		●
Jacksonville Electric Authority, FL	●	●		●		●	●	●		●		
LA Department of Water and Power, CA		●						●		●		
ELECTRIC, WATER AND OIL & GAS												
Colorado Spring Utilities, CO	●	●		●	●	●		●		●		
Tallahassee, FL (City of)		●						●	●			●

Qualifications of the Project Team

Black & Veatch has assembled a team that combines local knowledge and understanding of the City of Fort Lauderdale with extensive expertise in AMI business benefits, project planning and implementation. In addition to helping the City select a solution that best fits its needs and overseeing its implementation, this team can ensure that the City is prepared to extract continued value from the technology for years to come. Our team is identified below, along with the qualifications of each team member.

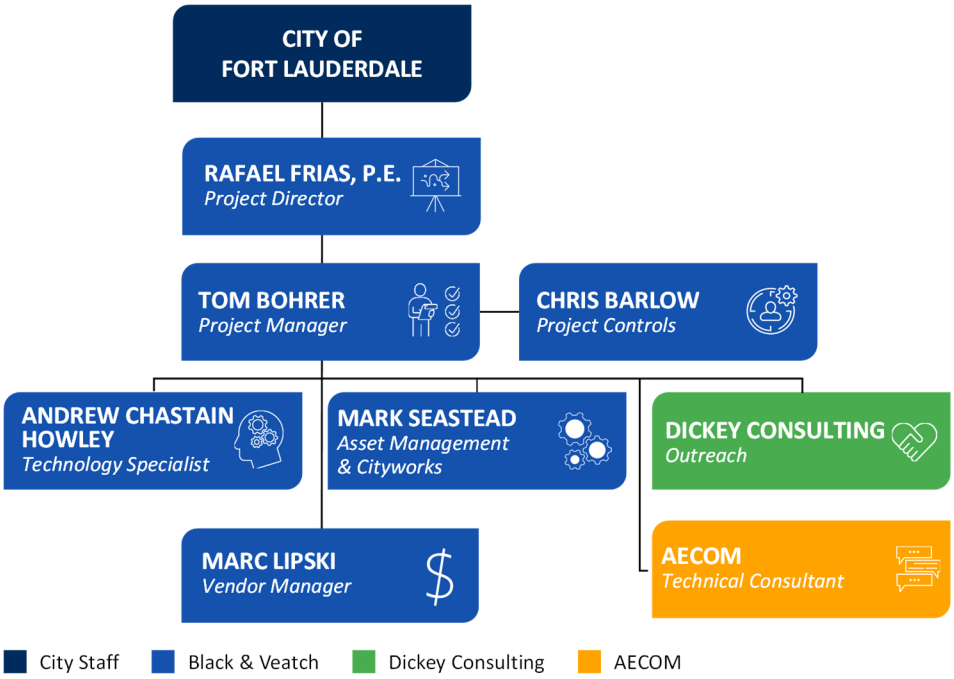


FIGURE 1: PROJECT TEAM ORGANIZATION

Rafael E. Frias, P.E.

PROJECT DIRECTOR

Mr. Rafael 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, hydropower and stormwater planning and design.

Mr. Frias is also experienced in incorporating sustainability principles into project designs and in the development of sustainable water planning technologies for the management of watersheds and ecosystems, water scarcity and wet-weather conditions. 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.

Some of Mr. Frias' key recent assignments and experience include:

- Development of a comprehensive Energy Efficiency Master Plan for the City of Hollywood, Florida.
- Program Management/Construction Management for implementation of a $455 million Capital Improvement Program in Puerto Rico.

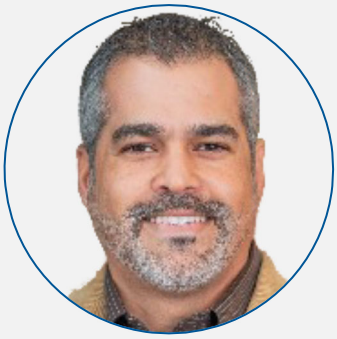
REPRESENTATIVE PROJECT EXPERIENCE

City of Deerfield Beach AMR/AMI Strategy Development and Implementation; Deerfield Beach, Florida; 2017 – 2019

Project Director. Supported the City of Deerfield Beach with AMR/AMI strategy development, technology evaluation, RFP development, RFP evaluation and vendor selection AMI system of 13,000 water meters within a service territory covering approximately 16.25 square miles. The project was divided in two phases:

Phase 1 -

- Development of AMR/AMI vision and strategy
- Evaluation of the City's AMR/AMI requirements and solutions



EDUCATION

Masters, Civil Engineering, Civil/Environmental/Management, University of Kansas, 2003

Bachelors, Environmental Engineering, Biological Engineering, Louisiana State University, 1997

YEARS OF EXPERIENCE

22

PROFESSIONAL REGISTRATIONS

Masters, Civil Engineering, Civil/Environmental/Management, University of Kansas, 2003

Bachelors, Environmental Engineering, Biological Engineering, Louisiana State University, 1997

PROFESSIONAL ASSOCIATIONS

WateReuse - Florida

Water Environmental Federation

American Water Works Association

American Water Resources Association - Board Member

LANGUAGES

Spanish

RELEVANT EXPERTISE

Mentor; Stormwater Systems; Water Resources; Water Treatment Systems

Phase 2

- Development of a Request for Information (RFI) for the selection of a vendor
- Review of RFI submittals and evaluation of vendors
- Recommendations for the implementation of the selected solution and implementation support

Palm Beach County Water Utilities Department; Sustainability and Strategic Planning Services; Palm Beach County, Florida; 2014 – 2016

Project Director. Currently, leading Black & Veatch's efforts for the development of a Strategic Sustainability Plan (SSP) for PBCWUD to shape the future state of the utility and support it in continuing to be a leader in the water and wastewater utility industry. As part of the SSP, Black & Veatch is using our Pathfinder strategic planning process, which was developed based on our proven experience working with clients within the water and energy industries. The Pathfinder methodology uses a collaborative approach to meld bottom-up initiatives with top-down strategic intent. The methodology combines sustainability, financial, and operational analytics with technical depth and insights for development of the PBCWUD SSP. Sustainability planning for PBCWUD's SSP considers the Institute of Sustainable Infrastructure's (ISI) Envision rating system, which covers all infrastructure aspects, including water and wastewater facilities.

Black & Veatch is also supporting PBCWUD with the developing an asset management strategy for the 2014-19 strategic sustainability planning process. The overall strategy will consider the complete life cycle of assets and focus on improving the utility's management systems around People, Processes and Assets. For this, the PAS 55 management framework will be followed, with the vision of achieving an ISO 55001 compliant management system for the utility.

City of Hollywood, Florida; Energy Efficiency Master Plan; Hollywood, Florida; 2013-2014

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.

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 in 2012.

Tom Bohrer

PROJECT MANAGER

Mr. Tom Bohrer is a focused, solution-driven Senior Executive with over 14 years of progressive experience in the water industry with specialized expertise in Advanced Metering Infrastructure (AMI) technologies and smart infrastructure.

EDUCATION
Bachelor of Arts, Business Administration, OHIO STATE UNIVERSITY, 1996, United States

YEARS OF EXPERIENCE
25

PROFESSIONAL ASSOCIATIONS
American Water Works Association – Member

RELEVANT EXPERTISE
AMI; Account Management; IOT; Non-Revenue Water; Pressure Monitoring; Smart Meter; Smart Water

Mr. Bohrer is adept in both client consulting and account management roles with a track record of technical background, presenting meaningful solutions, building solid professional relationships, and driving results. Tom is passionate about supporting customers in meeting business goals through education and training on cutting-edge technologies. He is highly committed to customer engagement and success with exceptional communication, interpersonal, and problem-solving skills.

REPRESENTATIVE PROJECT EXPERIENCE

Sugar Land, TX; AMI; Sugar Land, Texas, United States; 2021-2022
Principal Consultant - Black & Veatch. Currently leading Project AMI Vendor RFP release and Vendor Selection process with the city.

Houston; Pressure Monitoring; Texas, United States; 2019-2021
Vice President - McWane/Nighthawk. Developed an ROI for full time pressure monitoring with the city engineering group and oversaw implementation maintaining key relationships within the city.

LADWP; Pressure Monitoring; California, United States; 2017-2021
Vice President - McWane/Nighthawk. LADWP was seeking a new way to monitor the entire water system for issues, and I developed and sold a full-time, remote pressure monitoring product to reduce non-revenue water and provide operational savings to the utility. I served as the lead Account Manager after the sale.

San Francisco; AMI/Hydrant Pressure Monitor; San Francisco, California, United States; 2017-2021
Vice President - McWane/Nighthawk. Retrofitted hydrants with full time pressure monitor and assisted the city discovering leaks as well as sources of pressure issues within the city.

SF Water; AMI; California, United States; 2010-2017
Project Manager/Account Manager - Aclara. Led all aspects of AMI deployment with the city of San Francisco, ensuring the project was a success. Transitioned into Account Management roles and maintained executive relationships with the city.

Corpus Christi; AMI Deployment; Texas, United States; 2011-2017
Account Manager - Aclara. Developed a long-term plan and assisted the city with execution to deploy and maximize the AMI system.

Houston; Houston AMI/Smart Water; Texas, United States; 2015-2017
Director of Account Management - Aclara. Sold and implemented several pilots demonstrating the value of a smart water city and defining the business cases for each product within different silos of the city organization.

Technologies deployed: AMI, Pressure Monitoring, Acoustic Leak Sensors, Sanitary Sewer Overflow devices.

TOHO; AMI Deployment; Florida, United States; 2011-2017
Director of Account Management - Aclara. Oversaw AMI deployment and served as escalation point for the city.

DC Water; AMI Replacement System; District of Columbia, United States; 2015-2017
Director of Account Management. Created a strategy to evaluate, develop and execute remediation plans for an AMI system that was not working to the Utilities satisfaction. Maintained Executive relationships and oversaw project implementation once the plan was developed.

KC Water; AMI upgrade; Kansas City, Missouri, United States; 2011-2016
Director of Account Management - Aclara. Developed and oversaw upgrade strategy as well as consulted on meter issues and non-revenue water problems.

Plano; AMI Maintenance; Texas, United States; 2011-2016
Director of Account Management - Aclara. Developed a long-term plan and assisted the city with execution to deploy and maximize the AMI system.

Missouri American Water; AMI; Missouri, United States; 2014-2016
Director of Account Management - Aclara. Developed a strategy to win and secure AMI project over 350,000 endpoints. Led all contract negotiations and created 2 contracts both locally and with the American Water Corporate headquarters.

Boston Water; AMI/Software Replacement; Boston, Massachusetts, United States; 2010-2016
Director of Account Management - Aclara. Developed and oversaw implementation of a Software and hardware upgrade over multiple years to address issues in performance and aging system. Maintained Executive relationships and communications.

NYDEP; AMI Extension Contract; New York, New York, United States; 2015-2016
Director of Account Management - Aclara. Negotiated 5-year contract around AMI products and services to be delivered to NYDEP.

Des Moines; AMI Upgrade; Des Moines, Iowa, United States; 2012-2015
Director of Account Management - Aclara. Led client thinking on process to upgrade AMI System and created a customized IT, Field plan to execute and meet Des Moines goals.

Chris Barlow, P.E., CDT

Project Manager and Project Controls

Mr. Chris Barlow is an experienced project manager and design engineer that has focused his practice on the analysis and design of municipal water utility projects, primarily in south Florida.

EDUCATION
BS, Environmental Engineering, University of Florida, 1998

YEARS OF EXPERIENCE
24

PROFESSIONAL REGISTRATIONS
PE – 2003, FL, #59256

PROFESSIONAL ASSOCIATIONS
American Water Works Association (AWWA), active

PROFESSIONAL CERTIFICATION
Occupational Safety and Health Administration (OSHA), 10-hr Construction Safety and Health Course July 2020

Construction Documents Technologist (CDT) – CSI 2016

Risk Assessment Methodology for Water (RAM-W) 2002

Bentley's WaterCAD Master Modeler 2001

This experience has developed through the execution of numerous drinking water, wastewater, and water reclamation projects. These projects include the successful completion of numerous rehabilitation and new designs of pump station installations; pipeline projects; water treatment and supply projects, such as Aquifer Storage and Recovery (ASR) pumping facilities, Surficial and Floridan aquifer wellhead designs and pump selections, reverse osmosis membrane filtration, chemical feed systems, degasification and odor control systems; hydraulic modeling and master planning of water distribution and wastewater collection systems; survey coordination, corridor evaluations, design, permitting, construction observations, construction administration and final regulatory certification of these projects. Recent project management experience has focused on AMI, SCADA, CMMP and AMP.

REPRESENTATIVE PROJECT EXPERIENCE

City of Hollywood | Continuing Professional Services Agreements, Utility-wide; Hollywood, FL

Project Manager. Since 2015, Mr. Barlow has served as the primary point of client contact on three (3) separate continuing services contracts for this client. Over these recent years this client has been continuously served on a multitude of assignments from concept to final completion. These projects include completion of a new two-stage scrubber odor control system and deep injection well pump station, replacement of the high service pumps, America's Water Infrastructure Act (AWIA) Risk and Resiliency Assessment (RRA), Supervisory Control and Data Acquisition (SCADA) improvements, Cityworks Computerized Maintenance Management System (CMMS) Implementation, Assessment and Evaluation for a Utility Wide Closed-Circuit Television (CCTV) and Door Access Control (DAC) – Security Upgrades, and Advanced Metering Infrastructure (AMI) system replacement. Several of these projects are described as follows:

- Advanced Metering Infrastructure (AMI) – Black & Veatch – Project Manager to provide the City an overview of current AMI technology options that includes a 5-year roadmap and providing a basic high-level cost analysis regarding upgrading/replacing the current Aclara system. Provided a desktop assessment of the existing AMI system through a series of workshops. These workshops resulted in a

general overall description of the existing system and established the City goals for the replacement of the AMI system. The solicitation for the replacement of the AMI system.

- Asset Management Program (AMP) – Black & Veatch – Project Manager for the professional services related to providing the City an Asset Management Program (AMP). This AMP facilitated combining the City's several asset management efforts, such as, Cityworks, Condition Assessments, Master Planning, AMI, Financial Systems, and Operations into a wholistic AMP.

- Cityworks – Black & Veatch – Project Manager for the professional services associated with the implementation of a new Cityworks CMMS application. These services resulted in a successful Cityworks project by facilitating data and business process review, system configuration, data migration, systems integration, system acceptance testing, and end-user training and go-live support.

- CCTV – Black & Veatch – Project Manager for the professional technical services to expand and implement a Department-wide Door Access Control (DAC) and Closed-Circuit Television (CCTV) Camera System. The SOW presented below comprises the fundamental tasks to implement DAC and CCTV Camera System at six (6) facilities.

Seacoast Utility Authority | Continuing SCADA Services Agreement; Palm Beach Gardens, FL

Project Manager – Black & Veatch. Providing continuing consulting services related to the utilities' SCADA infrastructure. These services consist of WTP SCADA System Evaluation, ad-hoc WWTP SCADA system services, SCADA integration of all capital improvement projects, SCADA integration of the Reclaimed Services (38 sites) RTU Upgrades, Lucity Implementation at the WTP, WWTP, and New Admin Building. Several of these projects are described as follows:

- Lift Stations RTU Conversion – Project Manager for the profession services necessary to replace the existing RTU system with a cellular based system. The services consist of providing the Control System Configuration and Startup Services of the Process Control System (PCS) for the Reclaimed Water System RTU/SCADA Conversion

- Reclaimed water RTU Conversion – Project Manager for the construction phase services necessary to provide the SCADA Integration for the replacement of the existing RTU system with a cellular based system. The services consist of providing the Control System Configuration and Startup Services of the Process Control System (PCS) for the Reclaimed Water System RTU/SCADA Conversion.

- Cityworks – Project Manager for the professional services associated with the implementation of a new Cityworks CMMS application. These services resulted in a successful Cityworks project by facilitating data and business process review, system configuration, data migration, systems integration, system acceptance testing, and end-user training and go-live support.

- Lucity – Project Manager for the Conversion of the exiting CCMS application to Lucity. This service incorporated and migrated the existing asset data into a new Lucity system. BV completed this initial phase of service by providing training of the Authority's staff by providing these services virtually, post COVID travel restrictions.

Marc H Lipski, MBA

VENDOR MANAGER

Mr. Marc Lipski has more than 30 years of experience in the utility arena managing complex projects, product development and implementation, solutions and services, and business.

EDUCATION

Masters, Business Administration, Marketing, Mercer University, 2002

BS, Electrical Engineering, Power Systems, Purdue University, 1989

YEARS OF EXPERIENCE

32

RELEVANT EXPERTISE

Business Opportunity Assessment; Client Account Management; Demand Response; Electric/Gas/Water AMI; MDMS; Meter Standards; Meter Testing; Project Management; Risk Management Assessment; Smart Grid; Smart Metering; Solution Deployment; Strategy; Vendor Management

REPRESENTATIVE PROJECT EXPERIENCE

Pasadena Water and Power (PWP); Meter Data Management Feasibility Assessment; Pasadena, CA

Consultant. Mr. Lipski performed a strategic information technology (IT) assessment for MDMS and related technologies. The overall goal was to review, evaluate and recommend the IT Enterprise Infrastructure needed to support "Smart Communication" with PWP customers. Deliverables included high-level enterprise architecture strategy and roadmap, major gaps and improvement areas, priorities, and recommendations for an action plan.

City of Hollywood | Water AMI Replacement Assessment; Hollywood, FL

Project Director. Mr. Lipski is providing project guidance and subject matter expertise for the City of Hollywood's replacement of its first-generation advanced metering system. He is supporting the procurement process with RFP development, pricing evaluation, and scoring methodology. Mr. Lipski's participation is positioning the City to complete a thorough and evaluation of a solution that best meets its business objectives.

Colorado Springs Utilities | AMR to AMI Upgrade Project; Colorado Springs, CO

Project Director. Colorado Springs Utilities (CSU) is actively migrating its existing fixed network metering system to a current generation advanced metering technology. Black & Veatch had supported CSU through its selection and procurement process. Mr. Lipski is currently supporting CSU to monitor and ensure the AMI solution vendor is meeting commitments and complying with contractual requirements.

City of Sugar Land | Water AMI Business Case and Feasibility; Sugar Land, TX

Project Director. The City of Sugar Land intends to transition from manual reading of meters to advanced metering. Black & Veatch is supporting the City's procurement process for this new AMI solution. Mr. Lipski is providing guidance on the evaluation methodology and solution pricing analysis.

Andrew Chastain Howley, MCSM, P.G.

TECHNOLOGY SPECIALIST

Mr. Chastain Howley has nearly 30 years of experience in digital water systems and advanced metering infrastructure (AMR/AMI), including water loss control, distribution system optimization, and asset management.

REPRESENTATIVE PROJECT EXPERIENCE

East Bay Municipal Utility District | AMI/AMR Analysis and Pressure Zone Audit; Oakland, CA

Project Manager. Mr. Chastain-Howley managed the development of a worlds' first analysis of pressure zone audits utilizing AMR and AMI for two district metered areas (Holly and Round Hill) within the CITY OF FORT LAUDERDALE service area. These audits were the first near real-time evaluations of water losses integrated with SCADA and smart metering systems.

American Water | AMI/AMR Strategy Development

Advisor. Mr. Chastain-Howley advised American Water's corporate group on a strategic roadmap to replace and/or upgrade the utility's three million meters to advanced metering infrastructure. This included multiple vendors of metering and network infrastructure. Each Business unit was included in the analysis and individual plans were developed.

San Antonio Water System | AMI Business Case; San Antonio, TX

Project Manager. Mr. Chastain-Howley managed and provided subject matter expertise for the non-revenue water and AMI business case portions of the SAWS feasibility study and business case modeling. He conducted a review of the current metering infrastructure and reported on its relevance and compatibility with the Silver Spring Network and Master Meter AMI solution proposed for the system.

Kansas Board of Public Utilities | Automated Metering Analysis and System Integration; Kansas

Project Director. Mr. Chastain-Howley managed the integration of Elster AMI data feeds to actively construct analyses and water balances for the total system of 63,500 customers.

EDUCATION

Masters, Advanced Materials, Cranfield Institute of Technology, 1997, United Kingdom

MS, Mining Geology, University of Exeter, 1991, United Kingdom

BS, Geology, University of Saint Andrews, 1990, United Kingdom

TOTAL YEARS OF EXPERIENCE

29

PROFESSIONAL REGISTRATION

Professional Geoscientist – 2003, TX, #6834

Professional Geologist – 2002, FL, #2218

PROFESSIONAL ASSOCIATIONS

American Water Works Association

EXPERTISE

AMI/AMR; Asset Management; Distribution System Optimization; Geophysical Analysis Non-Revenue Water Reduction; Water Audit; Water Conservation; Water and Wastewater System Analytics

Mark Seastead

EDUCATION

MS, Resource Planning, Missouri State University, 1996

BS, Geology, The State University of New York at Fredonia, 1994

YEARS' EXPERIENCE

26

PROFESSIONAL ASSOCIATIONS

American Water Works Association

EXPERTISE

Water Information Systems; System Implementation and integration; Asset Management

ASSET MANAGEMENT & CITYWORKS

Mr. Mark Seastead has over 20 years of program management, consulting, and system implementation and integration experience on projects for private entities, municipal government and water, wastewater, and transportation-focused clients.

REPRESENTATIVE PROJECT EXPERIENCE

Water Reclamation District of Southern California | Asset Management Program; Lakewood, CA

Technical Lead. Mr. Seastead assisted with the ISO 55001 based Asset Management GAP assessment. He also led the CMMS selection task that included developing functional requirements, assisting with the development of RFQ language, creation of vendor scripting and evaluation processes, and assistance with developing consensus from WRD staff on final selection. Mr. Seastead also developed the framework for an Information Management Master Plan (IMMP) framework that is currently being implemented.

Unified Port District of San Diego | Phase 1 Asset Management Program; San Diego, CA

Technical Lead. Mr. Seastead helped guide a late effort to migrate facilities asset data into a GIS format. Additionally, he provided technical recommendations to relate the parks and facilities asset data to a GIS centric CMMS solution that are currently under advisement.

Milwaukee Metropolitan Sewer District | CIS & Asset Management Plan; Milwaukee, WI

Technical Specialist, Information Technology. Mr. Seastead developed a Data Management Plan with specific strategies that integrate several technologies including AssetView — data warehouse and analysis software, Power BI – Asset Management analytics platform, Esri GIS, Oracle WAM (CMMS), Bio-WIN, SCADA, CCTV, Oracle CC&B (finance system).

Sheryl A. Dickey

PRESIDENT/CEO, DICKEY CONSULTING—OUTREACH

Ms. Sheryl A. Dickey, founder and owner of Dickey Consulting Services (DCS) is a community and economic development professional with more than 35 years of experience and a track record of success in these areas. She and her staff bring a high level of energy and the ability to participate in a leadership or team member role to ensure successful completion of a project.

DCS is an economic development, government relations, project management and communications consulting firm. DCS provides services to public and private enterprises. DCS provides staffing for invoicing, accounting, documents control, contract administration, civil-CAD, construction inspections, and communications assistance. The firm also provides administrative support for budgeting, planning, management, and purchasing. DCS has enjoyed twenty-six years in business.

Ms. Dickey has worked with numerous clients including the Florida Department of Transportation, Broward County, City of Fort Lauderdale, City of Deerfield Beach, City of Pompano Beach, and Boca Raton Airport Authority. She served as the Project Director for FDOT Central Broward East-West Transit Study, Broward County Neighborhoods Improvement Program, SR 9/I-95 PD&E Study, and Airport Noise Abatement Committee Assistance for Fort Lauderdale-Hollywood International Airport. She has been the DBE Program Administrator for Boca Raton Airport Authority and Fort Lauderdale Executive Airport. Dickey has successfully completed the City of Deerfield Beach SR A1A PD&E Study, Tri-Rail EASY Card Implementation Program, Broward County B-cycle Bike Sharing System Launch, and Broadview Park Neighborhood Improvement projects.

Ms. Dickey is a longtime Broward County resident and business owner. Her company's headquarters are in the Midtown Commerce Center, a newly constructed Silver LEED certified building in Fort Lauderdale. Dickey is the developer and owner of the building.

Ms. Dickey's professional experiences include Director of Economic and Community Development for Blockbuster Entertainment Corporation and Director of Economic Development for the City of Fort Lauderdale, in Fort Lauderdale, Florida. She was formerly the Deputy Director of Economic Development for the Toledo/Lucas County Port Authority in Toledo, Ohio,

EDUCATION

B.S.S.W. The Ohio State University

YEARS OF EXPERIENCE

35

PROFESSIONAL REGISTRATIONS

Charrette Planner National Charrette Institute

Public Meeting Facilitator, National Charrette Institute

Professional Associations

International Economic Development Council

Greater Fort Lauderdale Chamber of Commerce

COMTO

AMAC

RECOGNITION

Boys & Girls Clubs of Broward County/ 100 Outstanding Women of Broward County, 2010

Sistrunk Community Festival Small Business Award, 2007

Success South Florida Magazine One of South Florida's 25 Most Prominent & Influential Black Women, 2006

Greater Fort Lauderdale Chamber of Commerce/Salute to Business Award. 2002

RELEVANT EXPERTISE

Community and Business Development Expert
Public Engagement Specialist
Collaborative Change Agent

the Director of Small and Developing Businesses for the State of Ohio Department of Development, in Columbus, Ohio, and a former member of the Portsmouth City Council in Portsmouth, Ohio. Ms. Dickey's prior experiences include a variety of positions supporting small business development and community revitalization.

Ms. Dickey completed her undergraduate education in social work at The Ohio State University in Columbus, Ohio.

Ms. Dickey is active in many community and business organizations including the Urban Core Committee of Broward Workshop, Greater Fort Lauderdale Chamber of Commerce, International Council for Urban and Economic Development, Oakland Park Police and Fire Pension Board and Delta Sigma Theta Sorority. She is the former Chair of the Broward Public Library Foundation.

Carla Hankerson

SENIOR PROJECT COORDINATOR, DICKEY CONSULTING—OUTREACH

Ms. Carla Hankerson is a results-oriented professional with more than 20 years of experience supporting clients and projects. She is an organized self-starter with excellent personal and presentation skills.

Her work knowledge includes achieving results in public and private organizations with municipalities, community leaders, vendors, contractors and subcontractors.

She also assists the Project Director, Project Manager, and Project Coordinator to successfully complete projects. Her approach to project support is to provide input, actively participate on cross-functional teams, and adapt to specific client needs. She resides in the City of Fort Lauderdale.

EDUCATION
A.D. Business Administration

YEARS OF EXPERIENCE
20

PROFESSIONAL REGISTRATIONS
Certification, National Notary Association

RELEVANT EXPERTISE
Document controls, construction inspections, DBE monitoring and compliance reporting, contract and finance negotiations, and accounting and invoicing, Master Planning, system implementations

REPRESENTATIVE PROJECT EXPERIENCE

The Urban Group, Inc. Noise Mitigation Program Assistance
Electronic Document Management System (SharePoint)
The NMCT utilizes the Broward County Aviation Department (BCAD) SharePoint electronic document control system for use by all three elements of the Noise Mitigation Program (NMP). The system corresponds with BCAD's Documents Control File structure and is modified as necessary to facilitate the NMP documents. Documents are coded by situs street address to geocode the documents to specific projects locations. Access to electronic documents are accessed by a SharePoint search interface.

Ricondo & Associates, Inc./BCAD Airport Master Plan Update
Provide assistance to Ricondo staff relative to the Stakeholder Engagement/Public Outreach Program Implementation. Prepare project collateral, flyers, fact sheets, notification letters, and public notices. Dissemination of flyers, and notices. Prepare a database of Policy Advisory and Technical Advisory Committee members to notify for participation in workshops throughout the study process which included professional staff from federal, state, county and local governments and business organizations.

AECOM/Port Everglades 2006 Master Plan Update
Assisted the Consultant with the Public Involvement Plan. Developed and distributed meeting notices; attended public meetings, workshops, and hearings; recorded public events and transcribed summary minutes for the client.

South Florida Regional Transportation Authority/Tri-Rail EASY Card
Managed a 30-member street team at 17 Tri-Rail stations (Broward County, Miami-Dade County and Palm Beach County) for implementation of the EASY Card system. Responsible for overseeing proper implementation of program goals and ensuring a high level of work ethic among the street team. Scheduled and facilitated focus groups to gather passenger input. Compiled and analyzed that data and prepared a report of findings for the client.

M. Samer Alkhatib

ASSOCIATE VICE PRESIDENT, AECOM—TECHNICAL CONSULTANT

Mr. Samer Alkhatib is a versatile engineer and program manager with experience in leading diverse large scale and complex programs and projects with emphasis on quality and timely delivery.

EDUCATION
BS, Civil Engineering,
MEng. Project Management

YEARS OF EXPERIENCE
12

RELEVANT EXPERTISE
Project Management; Asset Management; Program Implementation

He develops and utilizes projects and asset management strategies, tools and processes to improve performance, increase efficiency, reduce costs and support data driven decision making.

REPRESENTATIVE PROJECT EXPERIENCE

Baltimore City Department of Public Works, AMI/AMR Program, MD.
Samer was the lead from the Engineering and Planning group and part of the Program Management team for BaltiMeter Program to evaluate and implement Advanced Metering Infrastructure (AMI) and Automated Meter Reading (AMR). involved in the AMI and AMR program supporting the tracking and workload activities. The BaltiMeter program will include 410,000 meter installations, 250,000 AMI in Baltimore City and 160,000 AMR in Baltimore County. Phase I of the program included program evaluation and an assessment of the costs and benefits for investment in AMI/AMR. The project was found to pay for itself in 6 – 8 years. Phase I of the program included extensive outreach, metering installation prioritization and program implementation development. It also included RFP development and selection of most qualified Vender. The program also evaluated a new Billing and Customer Support system that Baltimore City later implemented.

During Phase II, the work was focused on metering installation, inspection, program controls and most importantly piloting and implementing the new Billing and Customer Support systems.

Baltimore City Department of Public Works, Office of Engineering and Construction (OEC) Construction Management Contracts, Baltimore, MD.
Samer was managing all of OEC's Construction Management (CM) Contracts. He was responsible for planning, exciting and monitoring CM contracts to make sure all OEC's construction projects are properly staffed at all times.

The process starts with working with all projects managers on CIP and active projects and develop a staffing plan with existing CM contracts and prepare the next iteration of CM contracts.

Typical activities included tasks implementation and monitoring staff assignments, staff selection, subs utilization, MWBE participation, burn rate tracking and emergency's and special projects staffing. Samer

was also responsible for procurement activities (RFP, selection, award etc.) and approval all consultants invoices, and contract related requests.

Maryland Department of Transportation, Maryland Transit Administration, Management of Capital Program, Baltimore, MD.

Manager of the Office of Capital Programming and responsible for the agency's $3 billion, six- year capital program. Securing, managing and maintaining capital funding for the department was top priority as well as project prioritization and projects funding planning and recommendations. The prioritization and asset management planning are very complex and a mix of different assets, services, priorities and funding availability. The Capital Program consisted of over 200 facilities, trains, busses & cars, rail tracks, systems, structures, tunnels, utilities and equipment. Samer was also managing the procurement, application and utilization process and over 70 federal grants and grants issued to local governments. Samer was involved in each capital project on the program to track progress and project funding needs. He was also responsible for reviewing and processing claims and change orders and agency-wide capital invoices. A major accomplishment was reducing internal invoice processing time from 10 to 3 business days through restructure, reorganization and automation. Samer was directly involved in the Purple Line Project, where he was tasked with managing the project budget and grant. The Purple Line is a proposed $2 billion 16-mile light rail line extending from Bethesda in Montgomery County to New Carrollton in Prince George's County

Metropolitan Washington Council of Governments (MWCOG) & DC Water, Wastewater Flow Forecast Methodology Assessment.

Project Engineer leading the inflow and infiltration analysis to update the MWCOG Regional Wastewater Flow Forecast Model (RWFFM). Samer review the RWFFM) with respect to methodology and performed a rearview analysis (actual vs. model predicted). He also interviewed other wastewater treatment utilities contributing to Blue Plains Advanced Wastewater Treatment Plant to understand methodologies they employ in projecting flows, to record any system updates and to understand water conservations efforts (i.e., low flow toilets) have on each jurisdiction's wastewater flow trends.

The main task was to investigate current levels of Inflow/Infiltration (I/I) for the current Blue Plains Service Area (BPSA) to include [Fairfax County, the District of Columbia Water and Sewer Authority (DC Water), Loudoun Water, the Washington Suburban Sanitary Commission (WSSC). The results of those task were used to select a new base year and update the RWFFM flow factors.

Alicia DuPree, PE

PROJECT MANAGER, AECOM—TECHNICAL CONSULTANT

Ms. Alicia DuPree is a Practice Leader for Water Master Planning and brings 16 years of experience with master planning for potable and non-potable systems, demand/loading development, hydraulic modeling, capital improvement planning, design, and advanced metering (AMR/AMI) infrastructure projects.

She has managed multiple complex integrated master plans, which integrated the water resources, non-potable, treatment, and transmission and distribution systems, which require extensive experience with project management, coordination, communication, and strategic thinking. Having worked at Aurora Water for 7 years as their lead master planner for the potable and non-potable systems, she understands the utility perspective and what is needed in a master plan so it can be functional, adaptable, and implementable to meet the utility's needs. Her aptitude for project management provides strategic and tactical advantages to fuel critical decisions that garner exceptional client service, quality results, and enduring value across the organization.

EDUCATION
BS, Environmental Engineering, University of Colorado Boulder

YEARS OF EXPERIENCE
16

PROFESSIONAL REGISTRATIONS
License, Professional Engineer, Colorado

RELEVANT EXPERTISE
Long Range Integrated Master Planning; Distribution System Hydraulic Analysis; Training Program Development; Capital Improvement Planning; Redundancy & Resiliency Planning

REPRESENTATIVE PROJECT EXPERIENCE

Integrated Water Master Plan, Aurora Water, CO: Project Manager

Managed the Integrated Water Master Plan which was a long-range plan that integrated the water resources, treatment, distribution, watershed management, and non-potable systems. The purpose of the Integrated Water Master Plan (IWMP) was to update previous master plans by integrating key assumptions and analytical tools, bringing them all to the same timeframe, and developing an integrated CIP that assesses and ranks all water sector projects based on the same fundamental criteria. In addition, the IWMP analyzed multiple future scenarios in order to minimize assumptions and help Aurora Water be prepared to meet its obligations to its customers under a wide range of possible future conditions. Ms. DuPree managed the IWMP on behalf of Aurora Water and coordinated the various discipline teams with Aurora and the consultant to ensure the disciplines and key assumptions were integrated. She ensured the project was completed on time and under budget. Once the project was completed, she helped Aurora Water continue to implement the final CIP that was developed.

Non-Potable Strategic Plan, Aurora Water, CO

Project Manager. Managed the development of the Non-Potable Strategic Plan for non-potable water supplies (Sand Creek Reclamation Facility, Rampart Mountain Supplies, and Prairie Waters Indirect-Potable Reuse Supplies) to increase system efficiency and reliability. Worked closely with Carollo and Aurora Water on each project task and milestone to ensure the intent of the project was met and

exceeded expectations. Provided technical direction on the development of the potential non-potable demands and overall strategic approach. Lead project team to select a strategy that will more efficiently utilize the City's non-potable supplies. [Prior to AECOM]

Meter Replacement Project, Aurora Water, CO

Project Manager and Senior Engineer for Aurora Water's Meter Replacement Project. Ms. DuPree managed the four phases of the Meter Replacement Project from the initial cost/benefit evaluation to vendor contract negotiations and proof of concept. The initial phase of the project included a cost/benefit evaluation of the meter technologies available to determine which technology would be the most beneficial for the water department. Ms. DuPree worked closely with the City of Aurora's Operations, Engineering, Conservation, Billing, and Information Technology departments to identify the City's needs and wants for a new meter system and to gain consensus on the selected technology. The second phase included the development of a detailed AMI Meter Replacement RFP and vendor selection process so that meter technology requirements and performance could be clearly defined and evaluated. The third phase consisted of extensive negotiations with the selected meter vendor to establish a long-term contract that was in the best interest of the City. The fourth phase of the project included the successful implementation of the proof of concept, which was required prior to full implementation. During the proof of concept, the meter infrastructure was tested, meter pit/vault lid replacement was evaluated, and the meter software integration with the City's water billing system was developed and tested.

Colorado Springs Utilities, Integrated Water Resources Plan, CO

Assistant Project Manager for Colorado Springs Utilities (CSU) Integrated Water Resource Plan, a long-term strategic plan for providing a reliable, sustainable water supply in a cost-effective manner. Ms. DuPree was responsible for the preparation and management of technical studies for demand management, non-potable water/ reuse, and environmental management. She managed inter-departmental coordination among various departments to ensure project assumptions were consistent and integrated. She was also responsible for managing the project schedule and deliverables. She also supported the development of the public process. [Prior to AECOM]

Transmission and Distribution Refinement Study, Aurora Water, CO

Project Manager and Senior Engineer for Aurora Water's T&D Refinement Study. Ms. DuPree managed the T&D Refinement Study for Aurora Water which evaluated Aurora Water's T&D system and future population projections to identify future capital improvements including pipelines, tanks, and pump stations that will be required to support future growth. Ms. DuPree was responsible for developing growth projections and spatially distributing them throughout the City, managed the update and development of the InfoWater model to ensure the updates were accurate and realistic, and was responsible for developing the T&D CIP.

Gustavo Silva, P.E., ENV SP

SENIOR WATER/WASTEWATER PROJECT MANAGER—TECHNICAL CONSULTANT

Mr. Gustavo Silva is a water/wastewater senior project manager with design and construction experience on gravity, pressures systems, pump stations, land development and geotechnical. He has experience on complex projects that require extensive planning effort and stakeholder engagement/coordination.

His expertise is on managing a team, developing schedules, design upgrade, client coordination, construction cost, and support during the construction process. Project Manager for the City of Miami Beach West Avenue Neighborhood Improvements and Miami-Dade Water and Sewer Department (WASD) Pump Station Improvement Program.

REPRESENTATIVE PROJECT EXPERIENCE

West Avenue Neighborhood Improvements – North of 14th Street and South of 14th Street (City of Miami Beach, FL):
The over $100 M Design-Build projects is integral to City of Miami Beach ongoing resiliency improvement to address sea level rise. The scope of work included the following:

- Complete replacement and rehabilitation of all public underground utilities including water, sanitary sewer, and storm sewer within the City Right of Way
- Upgrade the existing roadway to be raised approximately two (2) feet and combat sea level rise concern.
- Develop a typical section to improve travel/bicycle lanes, pedestrian walkway, landscaping, irrigation and lighting within corridor.
- Public/private Involvement to harmonized into private property and collect rainfall water
- Design 120,000 GPM Stormwater Pump Station to discharge stormwater at the Collins Canal.
- Incorporated pressurized drainage wells to the stormwater conveyance system to improve drainage area and water quality

EDUCATION
BS, Civil Engineering, Florida International University, 2013

YEARS OF EXPERIENCE
9

PROFESSIONAL REGISTRATIONS
Professional Engineer, Florida, #86389, Issued 01/11/2019, Exp. 02/28/2023

Envision Sustainability Professional (ENV SP)

Manhole Assessment Certification Program (MACP)

Pipeline Assessment Certification Program (PACP)

FDOT CTQP QC Manager

FDEP Qualified Stormwater Management Inspector

AutoCAD Civil 3D Certification

FDOT Intermediate Work Zone Traffic Control

PROFESSIONAL ASSOCIATIONS
American Society of Civil Engineer (ASCE)

Florida Engineer Society (FES)

As Project Manager, Mr. Silva develop schedules, proposal manage subconsultants (transportation, landscaping, coastal engineering, surveying, structural, electrical and geotechnical) and in-house engineering staff. Lead engineer for overall design including QA/QC review of subconsultants and in-house

design. Lead designer of sanitary sewer system, stormwater pump station and drainage well. The gravity sewer systems include the following: 1,200 linear feet (LF) of 8-inch, 1,000 LF of 10-inch, 4,000 LF of 12-inch, 3,000 LF of 15-inch, 3,000 LF of 15-inch and 2,000 LF of 18-inch C-900. The design of the 120,000 GPM stormwater pump station included six (6) 135 horsepower pumps with variable frequency drives, trash rack structure, CDS Treatment units, raised electrical platform (above flood zone), emergency generator and a 84-inch discharge pipe into a dissipator structure. The stormwater will be treated and discharge to the Collins Canal without affecting the natural environment. Additionally, design fifteen (15) pressure drainage well rated at 2,000 GPM to improve water quality. The system was composed of a settlement structure to reduce large particles and wet well for pumps (25 and 60 HP) to discharge onto well structures. The structures were design with a secant pile system to reduce impact to local resident and large excavation.

MDWASD Pump Station Improvement Program:

Project Manager and Designer of more than 20 pump stations that were considered outdated and out of compliance with regulatory agencies. My responsibilities evolved from staff engineer to engineer of record. The general task to complete a design requires surveying, geotechnical, environmental studies, civil site layout, hydraulics analysis, structural/electrical design, utility coordination, and relocation. In general, the pump station contains a wet well, valve vault, electrical panels, SCADA, discharge piping, generator, grading, landscaping, micro tunneling (36-inch force main) and stormwater system. My role as a project manager includes the following:

- Manages contract over 1.5M, acquires change orders, and negotiates proposals with clients and sub-consultants.
- Involved in all aspects of the pump station upgrade, including proposal, design, permitting, procurement, construction, and certification.
- Develop and lead a team to design pump stations simultaneously and within schedule effectively.
- Coordinate with geotechnical engineers, surveyors, environmental analysis, utility agencies, and regulatory agencies for permits and approval.
- Design civil site above flood elevation, including demolition, proposed layout of wet well/valve vault, electrical platform, generator, railing, site grading, drainage landscaping, fencing, and other factors.
- Develop mechanical piping, hydraulic calculation, pump selection, system curve vs. pump curve, and other components.
- Support construction managers during the construction phase and certification of the pump stations.

Approach to Scope of Work

The City of Fort Lauderdale's Water Utility Division is seeking the latest advances in an AMI solution for its approximately 64,000 water meters to provide world-class service and support for its customer base. The city recognizes both the value and the challenges that this type of system provides and is seeking support in designing, crafting, and preparing detailed AMI specifications that have tangible performance criteria. This RFP will allow flexibility for adding technologies for the future, but also one that will endure in the South Florida environmental challenges to provide steady, reliable meter reads to the utility. The RFP will include all needed components including but not limited to the meters, hardware, communications, software, and services to deliver a complete turnkey solution.

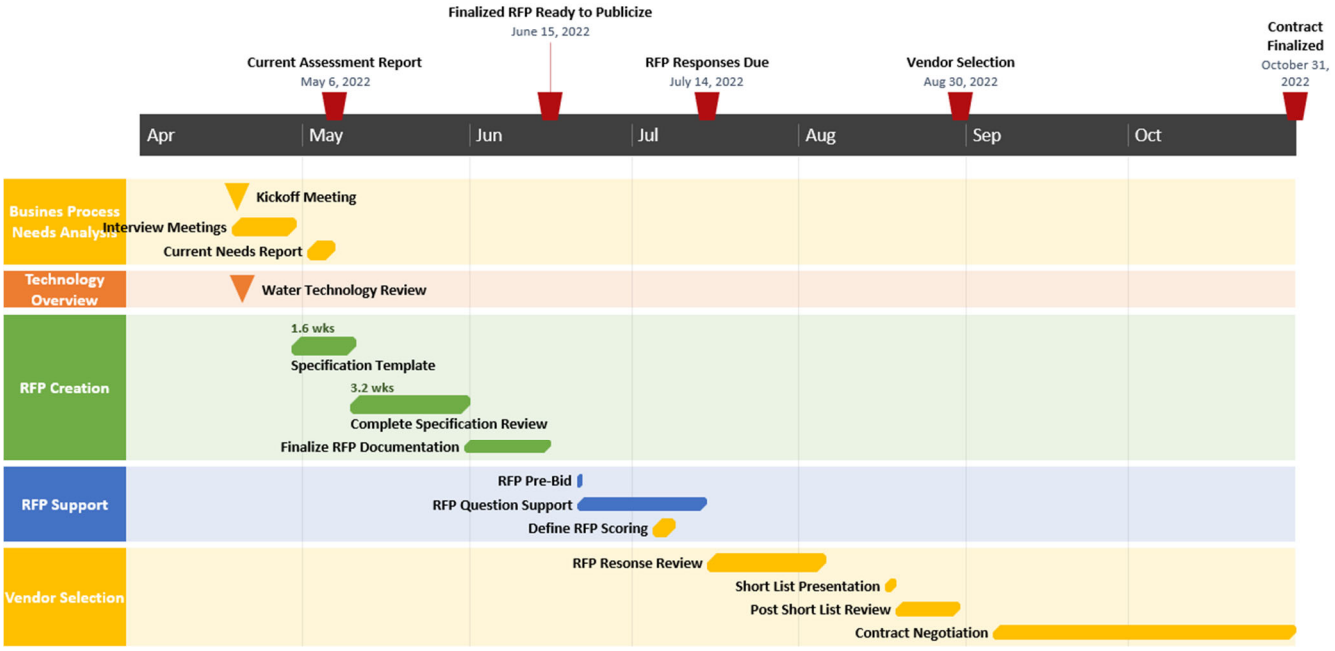
> *We had been running at almost 180 gallons per connection in daily non-revenue water. As I look at it today, we're averaging well below 100 gallons."*
>
> *(Water loss identified due to AMI System integration for KCBPU).*
>
> - STEVE GREEN, DIRECTOR WATER DISTRIBUTION, KANSAS CITY BOARD OF PUBLIC UTILITIES

The Black & Veatch approach to the City of Fort Lauderdale's successful AMI integration starts with the end goal in mind. Our delivery approach is to foster collaboration with the utility to understand the stakeholder goals, not only for today but to become a ***Utility of the Future***. Leveraging our experience in both implementing world class AMI systems across the country combined with our South Florida resources to exceed the goals from the City of Fort Lauderdale.

The AMI plan will comprehensively analyze the current needs of the City of Fort Lauderdale, review the current state of the AMI industry, and recommend a path forward for not only AMI but for additional smart water initiatives and programs for the city. It should provide transparency to your customers, improve the overall customer experience, provide more accurate/real-time billing data, increase operational efficiency through automation, facilitate proactive operations and maintenance, and ultimately reduce cost while increasing revenues for actual water usage.

Our analysis of your current programs will enable the AMI plan to transform the City of Fort Lauderdale by bringing together unique local City of Fort Lauderdale Water System details, technology understanding, and implementation of AMI systems in a logical, efficient delivery approach that ensures collaboration and that all needs are addressed as the utility prepares for the next 20 years of technology. We will also leverage our experience of AMI projects with more than 50 public and private utilities to achieve these goals.

To meet the 60-day schedule, Black & Veatch's methodology for managing AMI projects ensures the project will deliver results and stay on point. This program allows flexibility to be adjusted to suit the City of Fort Lauderdale's particular needs. Part of the Black & Veatch Team's advantage is the ability to scale up and down quickly to maintain timelines as needed. The Schedule Chart Below demonstrates how we accomplish this within the 60-day timeline.



TASK 1 PROGRAM AND PROJECT MANAGEMENT

Risk Management and Risk Mitigation

Risk Identification

Black & Veatch follows a structured process for risk management and mitigation. The first step we follow is to create a Risk Plan to identify the likely risks which may affect the Program. A series of risk categories are usually identified. Optionally, a suite of potential risks may be listed for each category. This may occur during a 'Risk Planning' workshop or related planning activities, involving some or each of the key project stakeholders involved in / affected by the Program. This may also include the Program Sponsor, Managers, team, suppliers, etc. Each of the risks identified is described in detail and documented. Risk identification is an ongoing process throughout the Program, with significant emphasis during the Planning Phase of the Program.

Mitigating Project Risks

Risk Management is an active and intentional effort. Identifying all risks and determining whether the risk is appropriate or not to the program, recording all risks in the risk register, presenting all risks to the Program Leadership team, communicating all decisions made by the Program Leadership team and monitoring the progress of all risk mitigating actions assigned confirms project risks are given the attention and priority that is required. Black & Veatch documents risks early in the Program and throughout the Planning Phase to confirm that risks identified are mitigated to the extent possible.

Problem Resolution and Exception Management

We maintain meeting minutes, action items, and an issues database for every program/project. Action items and issues status are reviewed by our Project Manager each week, and remediations and resolutions are coordinated with project team members. Remediation and resolution plans sometimes will include dealing with exceptions that need to be addressed, such as AMI meter/module installations that

AMI PROGRAM LIFECYCLE

1. **STRATEGY & ROADMAPS DEVELOPMENT**
   - Strategy/Technology Roadmap
   - Program Vision and Charter
2. **BUSINESS OPPORTUNITY ASSESSMENT**
   - Key business opportunities and requirements
   - Business Case Evaluation and Cash Flow Model
   - DRAFT business release plan and project plan
3. **SOLUTION DESIGN & ARCHITECTURE**
   - Key functional and technical requirements
   - Evaluation of potential business models
   - Key IT architecture design and development roadmap
4. **TECHNOLOGY & VENDOR SELECTION**
   - Procurement Structure and Process
   - Vendor Qualification Criteria and System Requirements
   - RFP documents
   - Vendor Proposal Evaluation
   - Scope of Work and Performance/Service Level Support for each selected Vendor
5. **SOLUTION IMPLEMENTATION**
   - PMO & Deployment Management
   - Systems Integration Management
   - Field Network Design & Implementation
   - Business Process Design
   - Change Management Plan
   - AMI and Network Data Analytics
6. **SOLUTION OPERATIONS**
   - Organizational Readiness Assessment
   - AMI operational process development
   - Change implementation
   - Use case implementation
   - Operational analytics implementation
   - Operational efficiency optimization
7. **INVESTMENT OPTIMIZATION**
   - Measurement & Validation of business case
   - System optimization and additional value extraction
   - Implement “Day 2” use cases
8. **RENEWAL STRATEGY**
   - Obsolescence Evaluation
   - Additional Value Extension Assessment
   - Asset assessment - Replace vs. extend
   - Renewal Vision, Goals, and Strategy

need to be re-scheduled for valid reasons (e.g., water leaks detected by the installer as part of the installer's installation procedures). In these cases, it is expected that procedures will have been developed in partnership by The City of Fort Lauderdale leadership and the AMI meter installation team to address "exceptions." Should exceptions be encountered that are not part of the installer's procedures, an update to the procedures might be required with communications to the installation team during the daily safety meetings, as an example.

Communications and Reporting

To execute some of the industry's most complex energy, water, and telecommunication projects, Black & Veatch has developed several innovative approaches. We collectively refer to these as the "rules" (methodology and approaches), "schools" (training), and "tools" (software, templates, and project artifacts) necessary to effectively manage a program of this magnitude. The innovation lies in the precise, practical implementation of project procedures, so team members clearly know their roles and responsibilities, strong communications using technology to bring all team members within instant contact and tools that manage the large amounts of data, metrics for the program to track program activities, status, and key metrics for communication to stakeholders all while maintaining the highest levels of quality control.

We emphasize constant communication with project stakeholders throughout the project. The specific methods of communication will be reviewed during the planning phase of the project. The plans and deliverables will be revisited throughout the AMI project execution to monitor, control, and improve project activities.

Quality Assurance

How is quality measured

Black & Veatch follows a rigorous Quality Assurance process that periodically measures project performance on several key components, including Schedule, Plan, Cost, and Scope Management. Methods that will be used to measure project performance will be discussed and reviewed, and agreed to during the planning phase of the project, but typical methods for measuring the quality of the installation include:

- Installation Quality—Provision of Services and deployment of devices with quality and accuracy, with minimum errors, exceptions, and re-work, and minimal impact to the utility's operating organization. Attention to customer satisfaction, including positive interactions with all customers, completion of deployment with minimal customer complaints, and zero complaints to the utility or The City of Fort Lauderdale, and finally, timely and complete route saturation for assigned modules and associated devices, with no non-automated/non-attempted and associated devices left behind.

- Training Effectiveness—Several methods for training for an AMI project typically include a combination of instructor lead, virtual classroom, and web-based training methods. In addition to tracking and monitoring training completion, measuring training effectiveness is also important. If, as a result of training, trainees are using appropriate skills learned during the training on the job, then you would expect that to positively impact performance. A wide variety of indicators can be employed to measure

the impact of training on performance – numbers of complaints, output per hour, and so on. It is hard to be sure that training has made the difference without comparing it to a control group – a group of employees who have not been through the training. We will work with The City of Fort Lauderdale to identify the training success parameters for this project.

- Data Quality—Measurement is a necessity at the enterprise level. There are a few modern approaches that Black & Veatch uses to measure data quality, but the one most widely used as a best practice is to 1) understand the subject and 2) define the business rules. So, for number 1, even though the focus is on the quality of meter data, the subject, in this case, might be the customer and associated rules that are measured for each customer (consumption, payment history, customer complaints, etc.). Black & Veatch will collaborate with The City of Fort Lauderdale on this approach if desirable and develop the business rules to measure data quality of the AMI system effectively.

How is quality reported

Quality measurements are reported to the program leadership team during weekly program review meetings using graphical and tabular displays. In addition to showing current weekly measurements, Black & Veatch uses planned, actual, and forecast charts as well as depicting trends in quality over time.

How is quality enforced

Quality enforcement is done in several ways. At the center of quality enforcement are well-documented procedures and training on those procedures. Secondly, identifying the quality criteria (discussed above) and measuring these criteria enables us to evaluate the quality. And lastly, but tantamount to quality criteria and measurement, is the potential for rewarding quality work for those quality elements of the project that are in control of project team members (e.g., field installation team).

TASK 2 – DATA RECONNAISSANCE

Project Kick-Off Meeting and Communication Plan

The Project Kick-off meeting is one of the most important tasks of the project as it sets the stage for project success by initiating teamwork and collaboration. We will identify project goals and success factors for each participant and the overall program during this meeting. We will establish the vision for defining success for each project phase (begin with the end in mind), define how we will communicate, and set parameters for functioning as a high-performing team.

This exercise will clarify the overall program plan and participants' expected roles. It will provide an understanding of the current state from which the City of Fort Lauderdale would transition from the current environment to the proposed solution moving forward.

Workshop No. 1: AMI Technologies Overview

For the City of Fort Lauderdale to evaluate AMI Solutions effectively, Black & Veatch has found that it is important to have a sound understanding of the AMI solution marketplace as it is constantly changing with technological improvements brought to market regularly. This includes an overview of AMI systems, the available water AMI solutions, analytical capabilities, and even knowledge of the metering infrastructure and their costs to understand the operational characteristics and nuances with

implementation. The current trends and the strengths/challenges of each technology type are important considerations too.

Black & Veatch maintains an interactive inventory, including infrastructure data from all main meter manufacturers and AMI vendors. We will consolidate the data and make it easy to digest and explain. We will conduct an interactive workshop to provide staff with an overview of the AMI technologies available and worth considering. AMI is a fast-developing industry, and we would expect additional capabilities to present themselves even between the preparation of this proposal and any start of work. We will endeavor to make the current technologies discussed as up-to-date as possible and correct through 2021 at a minimum. The AMI data will look at leak detection capabilities and how the vendors are saving water, time, and effort with their systems.

To the right is a base evaluation of the communication technology and example vendors. We have also included a screenshot of a small portion of our in-house Technological Summary database on the following page, which is actively updated every year with the major technology vendors and their main specifications. While looking at the past, we also look at the future for upcoming trends and new technologies, evaluating every vendor on its analytical capabilities, add on sensors for items like water quality, distribution leak detection, pressure management, wastewater, and more.

TECHNOLOGY & EXAMPLE VENDORS

COMMUNICATION TECHNOLOGY	AMI VENDORS
Point to Point	Sensus, Aclara, Master Meter, Mueller Systems, Neptune
Mesh	Landis + Gyr, Honeywell, Eaton, Itron, Kamstrup, Zenner
Cellular	Badger Meter, Neptune, Smart Earth Technologies, Technolog, Metron-Farnier

AMI TECHNOLOGY SUMMARY

		Aclara STAR	Badger Orion Migratable	Badger Orion Cellular	Itron Choice Connect (100W)	Itron OpenWay RIVA (500W)
Network Other	Do you require an AMR to AMI migratable system?	AMI Only, Migratable in near future	Migratable	AMI Only	Migratable	Migratable
	What is the minimum level of encryption required?	AES 128	Yes: 16bit-CRC (Cyclical Redundancy Check) error checking algorithm	AES 256	AES 128	AES 128 (mobile mode) AES 256 (network mode)

Interview Meetings

Black & Veatch will deliver a project communication plan to engage The City of Fort Lauderdale stakeholders that meets the agreed-upon timing and objectives of the District. We will organize and facilitate workshops and individual interviews to access the data needed and build up the requirements

and business process needs. A dashboard may be developed to enable and update progress tracking for ease of updating The City of Fort Lauderdale leadership.

Black & Veatch will utilize a business process needs (BPN) assessment approach along with the knowledge of the interview participants to identify efficiently, record, and document the current processes impacted by a change in metering technology and capture any specific processes that could be improved through the implementation of a new AMI system. Black & Veatch will work with The City of Fort Lauderdale to ensure that the BPN workshops include all appropriate stakeholders and address the necessary areas. Based on previous experiences, the workshops/interviews would include some of the following categories.

Interview Meetings: The City of Fort Lauderdale Water - Subject Matter Experts (SMEs)

- **Customer Services**: Water Conservation, Contact Center, Field Services, New Business, CIS
- **Engineering**: Distribution Planning, Mapping, Pipeline Improvements, Design
- **Finance and Accounting**: Purchasing, Risk Management, Auditing, ISD, Treasury, Office of Budget, and Rates
- **Information Technology:** IT, Systems, and Integrations
- **Operations & Maintenance**: Construction, Facilities, Distribution, Water Quality, Regulatory and Security
- **Supply, Planning:** Asset Management, Meter Testing

Black & Veatch will leverage our extensive library of utility operational and AMR/AMI processes to accelerate this process and complete the effort within the proposed timeframe. Based on this, Black & Veatch proposes that the workshop groups be focused on key subject matter experts and the business process owners. The key objectives of the approach are to understand the current state of operations and meter program, define baseline future state business processes, document gaps in existing business processes, and identify opportunities for improvement with AMI. Black & Veatch understands that some individuals will be in multiple workshops and will schedule them to facilitate maximum participation with deference to the need of The City of Fort Lauderdale team to perform their normal work activities while also supporting the project. We also expect that some conversations will need to be conducted on an individual level depending on these work commitments. Our team's deep expertise in water metering and water utility operations, metering, AMI, CIS, Meter Data Management Systems (MDMS), data analytics, and other relevant processes and technologies will enable us in collaboration with The City of Fort Lauderdale project management to determine which staff are needed for each workshop and allow us to address the important aspects immediately, driving thoughtful but efficient collaboration.

Workshop No. 2: Integration and CIS Considerations

It is expected that The City of Fort Lauderdale will have multiple integrations of software platforms within the duration of the AMI project. These integrations need to be monitored and managed actively. Black & Veatch has conducted system integrations beyond AMI, including payment solutions, AS400, CIS, GIS, CMMS like IBM's Maximo, customer engagement platforms and IT systems upgrades and replacements.

This deep knowledge will enable us to make sure that the understanding of integration with these systems will be made correctly and the possible issues visualized and tackled without error. For example, Black & Veatch is actively working with IBM Maximo's "Monitor" platform to enable streaming data sets and analysis to run through the platform.

Surprisingly, system integrations are often a secondary thought in business cases for AMI, so we are glad to put a fuller focus on these through this workshop. We also added IT to the internal interviews so that we can get ahead of any software and cybersecurity issues that may have surfaced since the last evaluations. The Black & Veatch integration team has led more than 50 implementations that often include multiple integrations. The team has also upgraded and expanded enterprise GIS systems as a function of these projects when required.

We have one of the most advanced understandings of metered data and billing system integrations in North America. Our work has even included emergency repair work such as that provided to the Cleveland Water Department (CWD) since 2012 and continues today. After implementing their AMI and CIS systems (Itron AMI and Oracle CC&B) in 2009, CWD experienced many operational and technical issues that they could not resolve, contributing to a condition of ongoing customer service deterioration. By 2011, this situation had escalated to rampant billing issues, high customer complaint rates, budgetary pressure on unbilled revenues, and customer service paralysis. The city's mayor stepped in to initiate a "Customer Service Turnaround" effort, hiring BV to fix these issues.

While this example shows how we fixed a major problem, it also outlines the level of experience and trust within the customer billing systems community and our ability to make sure that these issues don't arrive in the first place.

Current Needs Analysis Report

Following the workshops, Black & Veatch will assemble information obtained. The package will include notes, a complete list of business process areas, observed gaps between current and desired states, anticipated process changes, any desired additional system enhancements, and processes improvement/standardization areas.

Black & Veatch's Business Process Needs Analysis approach has been utilized successfully on many other similar engagements providing the necessary direction and guidance regarding the next steps in the metering technology (AMI) life cycle. This analysis will provide a high-level overview of your metering processes, highlight areas for improvement and identify departments and processes that will benefit the most from an AMI metering system, facilitating process delivery improvements across the utility.

Information gathered in these meetings is also needed to build the RFP that has little to do with AMI functional requirements. Combining the functional needs/goals with the current status of the water utility will allow Black & Veatch to assure all needs are met.

Included Workshops in this section will be:

- Workshop: Kick-Off/RFP Development
- Workshop: State of the Art AMI
- Workshop: Integration and CIS Considerations

- Series of Interviews: Knowledge Gathering from City of Fort Lauderdale staff

TASK 3 – MEETINGS

Black & Veatch's structured meeting approach results in clear communication and team goals. From kickoff all the way through implementation the team ensures all team members from the City of Fort Lauderdale are clear on agendas, plans and goals for every meeting. Black & Veatch provides analysts to take meeting notes so the technical experts can focus on what they do best, delivering client value. A SharePoint site will be maintained and updated regularly as part as Task 1. The following meetings are to be expected and we have indicated at what task point they are to occur:

- Workshop: Kick-Off/RFP Development (Task 2)
- Workshop: State of the Art AMI (Task 2)
- Workshop: Integration and CIS Considerations (Task 2)
- Series of Interviews: Knowledge Gathering from City of Fort Lauderdale staff (Task 2)
- Workshop(s): Evaluation Criteria Development (Task 4)
- Workshop: RFP Finalization (Task 5)
- Meeting: Pre-Bid (Task 5)
- Meeting(s): Answering Bid Questions (Task 5)
- Meeting(s): Proposal Scoring and Ranking (Task 6)
- Meeting: Finalist Vendor Presentations (Task 6)
- Workshop: Finalist Vendor Presentations (Task 6)
- Two (2) Meetings: Vendor Negotiations (Task 7)

TASK 4 – DEVELOP EVALUATION CRITERIA

After the Needs Analysis and Data gathering, Black & Veatch will create a draft Requirements documents in a format similar to the table format below. We have found the vendors are comfortable responding to this format and understand the relationship between selecting the compliance in the base bid and its relationship to the pricing section.

	Req. #	6 - IT and Security Requirements	Not Compliant	Partially Compliant (Explain)	Fully Compliant	Comments/Explanation
3	6.1	**Endpoint Device Security**				
4	6.1.1	**Water AMI Endpoint Encryption:** The water AMI Endpoint must have the capability to support encryption (AES256 or comparable) and ability to receive encryption commands and encrypted data via field tools, network devices, and the AMI Headend system.				

The City will benefit from a thorough evaluation by utilizing Black & Veatch's developed tools that have been tailored for the review of functional technology requirements of AMI systems and the proposing vendors.

Black & Veatch will then hold Workshop(s) in order to review all the proposed evaluation criteria and coordinate with procurement to ensure that criteria comply with City policies. Black & Veatch draws upon industry standards, best practices as well as lessons learned from all its Water and AMI customers – bringing that vast experience and customizing to the City of Fort Lauderdale's needs.

In order to prepare for the RFP Development, we will then proceed to rank requirements importance. We are expecting that from similar projects at least 10% of the Black & Veatch listed sample requirements will be deleted. Similarly, discussions with the utility's project team will result in adding around 10% new requirements. Each water utility, though similar in operation is not identical and these differences drive the changes during the work session discussions. The bottom line is this process is much more effective than beginning with a blank sheet brainstorming session.

The ranking exercise of high, medium, and low for each requirement will also be used when we score the vendor bids as high priority receives greater scoring than medium or low priority requirements. The rankings of high, medium, and low will be kept internal to the City of Fort Lauderdale and not shared with the vendors. After the bids are received, the rankings will be used in the bid scoring exercises. The high-priority items are highlighted, making it easier to focus on them when the City of Fort Lauderdale team closely reviews several bids.

All of this allows us to create a weighted scoring spreadsheet to reflect the desired outcome of the City of Fort Lauderdale. At the end of this section, we will have completed the evaluation matrix, including all technical requirements to be evaluated.

At a minimum, the meeting to be held during this task will be:

Workshop(s): Evaluation Criteria Development

TASK 5 – PREPARING RFP SCOPE OF WORK

The next steps create the formal RFP document and all associated chapters and files. Most of the materials for the RFP will be created by the Black & Veatch Team after our requirements sessions. Still, many of the exhibits such as the GIS of meter locations, quantity of meter form factors by type, and other written information requests would have been gathered in earlier tasks. Therefore, this phase primarily assembles the RFP with much of the work completed earlier. It can be assumed that Black & Veatch will be creating and distributing various sections separately to the City of Fort Lauderdale, seeking approval by section. The utility's project sponsor will use his/her best judgment to decide who from the utility may also benefit from each section's final review/approvals. As needed, your Black & Veatch Project Manager will also review each section with the appropriate review team. We have found this is a more effective approach than sending the entire RFP to be reviewed because the client team normally has different members of their team review and approve different sections of the RFP.

Create Request for Proposal (RFP) and Associated Documents

In the above section, we defined our approach for creating the requirements, how to define the service territory with GIS shape files, etc. we now shift our efforts to building the RFP. Below we define how to combine the various files and chapters of the RFP into a single document that integrates with the City procurement standards.

The RFP will include a minimum of the following.

1. **Contractual terms and conditions:** This section will become the contract. We suggest the City provide its standard terms and conditions as part of the RFP. This allows vendors to either approve as is or take exceptions while noting the exception or providing their standard version. We also will request that the vendors provide their software agreement, Service Level Agreement and System Acceptance Testing terms. Format: Microsoft Word and editable.

2. **Technical requirements:** This Excel file would have been drafted during the onsite work session explained above. We propose to include a single Excel spreadsheet and be embedded into the Word RFP document. We will ask vendors to indicate compliance and describe how their products perform the task and meet the requirement addressed.

3. **Expected integration:** Our Integration work session would reveal all expected integrations

4. **Expected system components diagrams for SaaS or Cloud-Based:** We are asking the vendors to provide diagrams depicting their cloud and SaaS environments. We will be looking for details as to where the locations are, the level of diversity and redundancy, etc.

5. **Key performance milestones:** Black & Veatch suggests running a System Acceptance Test on 5-10% of the overall system. We would carefully craft language around performance metrics to align with the City of Fort Lauderdale's goals. After the vendor exceeds the contractual expectations, the project would go into full deployment phase.

6. **Timeline for implementation:** We suggest a timeline for implementation be defined as part of the RFP to help manage expectations and seek commitments during the bidding process.

7. **Responsibility Matrix:** We will plan to include a responsibility matrix to reflect the roles and responsibilities between the City of Fort Lauderdale and the AMI vendor. This helps manage expectations for the deployment tasks.

8. **References:** The RFP will request the names and contact information of references. Again, including this request in the RFP saves time in later steps.

9. **Cost Template:** The RFP will ask vendors to submit proposed costs in a format defined by the City of Fort Lauderdale. This allows for a uniform cost comparison of the vendors and avoids inconsistencies in the bids. As an option, you might seek a bid directly from a metering vendor just for meters versus a turn-key meter/module. We can discuss this during the requirements session.

We suggest an Intent to Respond form be used in the process primarily to ensure the vendors received the bid and they are working on the response (emails can sometimes not reach the intended destination, so it is a good check/balance quality control process). Black & Veatch will be available to assist in answering technical questions during the bid process and create any addendums that may be necessary. We anticipate the bidders would have four to six weeks to complete the bids.

Weighted Score							Forced ranking Score Best Score is 5			
Vendor 2	Vendor 3	Vendor 4	Sub-Categories	RFP Sections		Weight	Vendor 1 Score	Vendor 2 Score	Vendor 3 Score	Vendor 4 Score
2.10	1.70	1.73	*Functional Fit* (Meters and Endpoints)	Appendix C Appendix C	Section 2 Section 3	19%	5	5	1	4

Our vendor evaluation process will allow the City to select the vendor with the most beneficial AMI technology that meets the City's needs.

Once the RFP is released, Black & Veatch assists in the Pre-Bid meeting. The goal of the call is to lay out the project, the vendor process and answer any high-level questions. Black & Veatch will be available to assist in answering technical questions during the bid process and create any addendums that may be necessary.

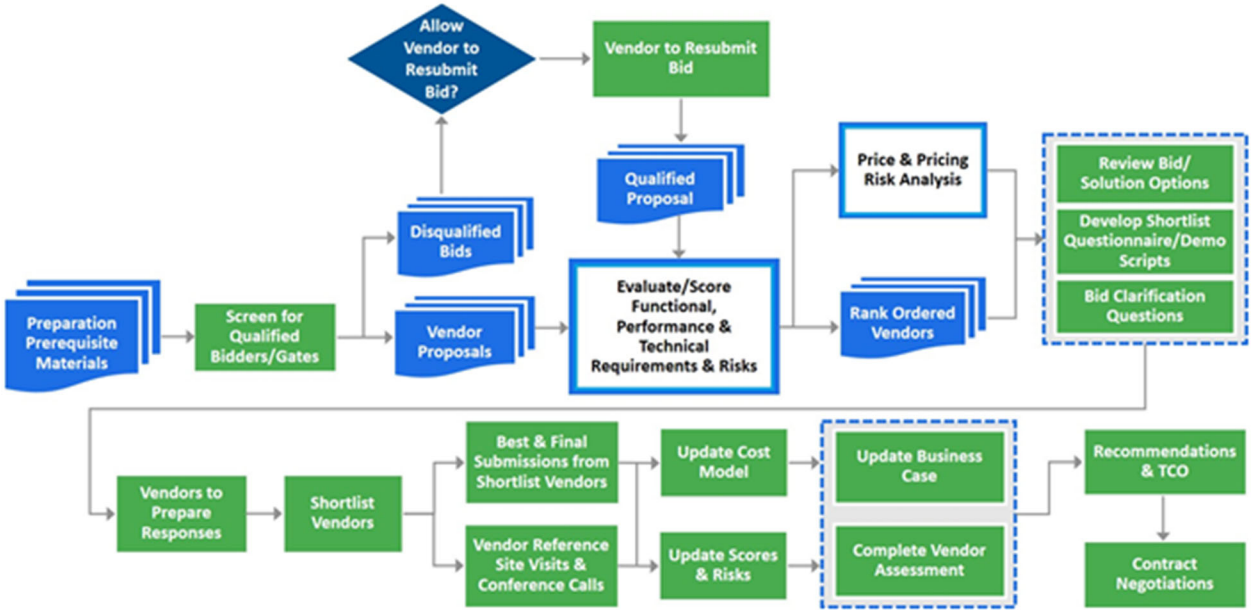
All questions on the Pre-Bid or before the bids are due shall be reviewed and documented. Black & Veatch provides technical assistance as well as suggested responses based on industry knowledge. Some vendors can use questions as a way to differentiate their product, so it is important to understand the ramifications of the answers.

The meetings to be held for this task will be:

Workshop: RFP Finalization
Meeting: Pre-Bid
Meeting(s): Answering Bid Questions

TASK 6 – EVALUATE VENDOR PROPOSALS

Once the proposals have been received, Black & Veatch will process with data and make it easily consumable into our scoring categories, so the City of Fort Lauderdale can focus on the documents that apply to each section in a manageable way.



Black & Veatch plans to closely review the AMI bids and support the Core Team members at the City of Fort Lauderdale while they read and score 100% of the specifications. Regarding the list of the top-weighted attributes, we request that the City of Fort Lauderdale team collectively score these items as a team. We plan to explain the approach for this with the Project Sponsor as we reach this point in the

project. Black & Veatch will provide the Excel spreadsheet for this as the weighting percentages will be included. At the minimum, Black & Veatch will complete the following bid analysis:

1. Review the proposals for completeness.

2. Review the proposals to assess requirement compliance.

3. Provide technical guidance and insight into each RFP response. We look for signs of schedule-adherence, integrity, professionalism, etc., every step of the way.

4. Assess proposed costs in each proposal, including the initial and recurring costs. We also will normalize the pricing (e.g., annual costs likely escalated 3% per year, one vendor quoted server hardware, inconsistencies with database license costs, and other edits to normalize the bids). Anything we change, we typically use red font italic to indicate we added or subtracted some components. We will also make assumptions for ongoing maintenance, such as visiting each collector once every two years for one hour. Therefore, vendors with 500 collectors would have higher costs than vendors with 200. We would apply appropriate maintenance costs for tower-based AMI bids for tower maintenance. If any tower site rentals would be needed, we add costs for tower rentals. If the City of Fort Lauderdale would like to assume private backhaul and we conclude each site will cost, let's say $4,000, then any non-backbone collector would be allocated $4,000 as a one-time fee.

5. Assess and Score the RF Design from each bid. The vendors typically create technical questions based on their proposed design for the short-list onsite vendor sessions. Evaluate their propagation study provided, heights and locations of all collector site antennas, the number of collectors and repeaters proposed, expandability/scalability for future unidentified programs, review how cellular was proposed to be used, and other details that will impact the coverage and resiliency of the bid.

6. Review the level of risk with each solution as it relates to:

    a. System integration issues
    b. Technology obsolescence based on the age of the proposed technology
    c. Issues that could cause cost overruns include assuming cellular collectors in areas where cellular coverage is spotty.
    d. Operational logistic challenges
    e. Level of "openness" with technology
    f. Gaps in clarity that would be best to identify during the upcoming vendor demo meetings
    g. Other topics suggested by the City of Fort Lauderdale

We plan to set up a webinar work session to guide the City of Fort Lauderdale project team through evaluating all proposals. As Black & Veatch presents our analysis, we will progress from a high level to a lower level of detail for this work session. We want to stress it is human nature to gravitate towards focusing on the preferred vendor. However, the first step towards selecting the best vendor is to

eliminate the least attractive bids. Therefore, all the important selection criteria identified in earlier tasks will be used to score the bids.

The topics to be covered in this work session include the following:

- Review the City of Fort Lauderdale's ranking of the top attributes. The City of Fort Lauderdale team would have done this prior to this work session as a team.
- Review and discuss the scoring of responses and scoring and the critical questions included in the RFP, also assessed. We bring back the high, medium, and low requirement weightings into this analysis.
- Review pricing and pricing options and Black & Veatch's pricing normalization assumptions. We plan to take about 40 rows of pricing entries and summarize about six categories of costs rolled up into logical groups, i.e., one-time software, meters and modules, field equipment, annual recurring fees, etc.

The objective of the work session is to migrate to a shortlist of the top 2-4 bids and begin documenting questions for the onsite meetings. From previous client projects for the onsite AMI work sessions, vendor agendas can normally be created within a week from this work session.

Based on the Black & Veatch and the City of Fort Lauderdale's evaluation of the responses, we will refine our plan for the onsite demonstrations to clarify vague or unclear topics further or discuss any pricing items that looked like a mistake or missing.

Also, sometimes we ask for best and final prices before the onsite meetings. However, we generally find it is more effective to wait until after the onsite session.

The meetings to be held during this period will be:

Meeting(s): Proposal Scoring and Ranking
Meeting: Finalist Vendor Presentations
Workshop: Finalist Vendor Presentations

TASK 7 – VENDOR NEGOTIATION AND CONTRACTING

Upon selecting the final vendors, Black & Veatch will support the City in the final negotiation and execution of the required vendor agreements. During this task, Black & Veatch will take on the role of "Trusted Advisor," whereby the vendor negotiation and contracting process should include the following key activities:

- Vendor negotiation strategy
- Initial preparation for negotiations
- Develop statement of work
- Negotiate contract terms
- Execute final contract

As the City's trusted advisor, it is expected that Black & Veatch will primarily support the development and review of the technical and functional aspects of the solution for the contract documents in support of the City. Thus, the following descriptions of the expected activities of negotiating and contracting for the vendor agreements will be primarily executed by the City.

Develop vendor negotiation strategy

Preparation is critical to contract negotiations, and establishing a negotiation strategy is a key part of preparations. The City will need to develop a negotiation strategy that may include the following elements:

- How the City would share risks and rewards with the vendor — Here, it will be helpful to consolidate and analyze general implementation risks, risks specifically associated with the selected vendor based on the proposal on previous City experience.
- Desired cash flow, capital, and O&M budget constraints of the City.
- Starting points and targets for negotiations, including for example:
    - Hardware and software licensing, upfront and incremental licenses as the City grows.
    - Service Level needs for any Software-as-a-Service (SaaS), Network-as-a-Service (NaaS), or Managed Services planned.
    - Professional Services and expected support needs for the duration of the deployment project.
    - Warranty period and warranty start date/milestone for hardware, software, and documentation.
- Annual maintenance and support for major system components, with desired response time, response resources (skilled labor versus phone answering service), and support hours (i.e., office hours, extended office hours, 7 X 24).
- Payment milestones, holdbacks, and penalties.

Develop Statement of Work

Black & Veatch will support the City in developing the initial contract Statement of Work (SOW), technical specifications, and service level agreements as the basis for negotiations with the vendors.

This effort will cover:

- Initial technical specifications (functional and performance specifications combining the City RFP and vendor response documents).
- Initial draft of the statement of work (consolidating the City RFP and vendor response documents along with a list of deliverables).
- Initial draft of the Service level agreements.
- Initial draft of the acceptance process and criteria.

Contract negotiations

The City negotiations on contract terms will include:

- Preparation of the City negotiation team for negotiation sessions (including developing a plan for each session, reviewing key issues for the session, and expected outcomes).
- Technical negotiation sessions where work scope and performance are being addressed.
- Pricing negotiations sessions.
- Post-session wrap-up notes, including follow-on tasks.
- Team review sessions to discuss the outcome of each negotiating session and revisions to the negotiating strategy as appropriate based on outcomes from each session.

Execute vendor contract

This subtask represents a milestone for the AMI Technology procurement.

Deliverables

- Agreement SOW and performance/service levels for each selected vendor (AMI, Installation contractor.)

The meetings anticipated during this period will be:

Two (2) Meetings: Vendor Negotiations

TASK 8 - IMPLEMENTATION / OWNER'S REP (CONTINGENT ON FUTURE FUNDING APPROVAL)

Black & Veatch has extensive experience in providing project management and implementation oversight through this phase of an AMI project. We can provide an expansive approach, where we would be leading and overseeing much of the project activity; a more limited approach, where we would be supporting the City as an advisor (i.e., Owners Engineer) providing oversight and advice to the City as the primary program managers; or somewhere in between.

Here are just a few areas where Black & Veatch can work with the City and the Vendor to Engage in Project Outreach and Communications Plan, facilitate the Project Kickoff meetings, build a Project Execution Plan, and support solution deployment.

Outreach and Communications Plan

Working closely with the City of Fort Lauderdale, the Black & Veatch team will develop a program to promote awareness among key stakeholders of the project. A communication strategy and detailed tactical plan for the implementation will be developed to accomplish this. Key stakeholder communications will be created for, among others, the councils and regulatory bodies, employees, and consumers. This task includes assisting the Utility Smart Grid team in developing a strategic messaging and communications outreach plan.

Black & Veatch will facilitate a half-day workshop with Smart Grid Project team members and any other interested stakeholders to identify the specific communications requirements, including:

- The specific audiences or targets of the communication campaign
- The information content to be disseminated to each of the audiences
- The vehicle by which the information content will most effectively be communicated to each
- Reusability of materials
- Responsibilities and assignments for Black & Veatch and the City of Fort Lauderdale

Black & Veatch will summarize the results and decisions in a brief recommendations document.

The Black & Veatch Team will develop a master presentation that includes content to address all identified audiences and stakeholders and assist the Water Utility AMI team in developing strategic messaging.

Subsequently, several individual presentations will be prepared using subsets of the master presentation content to focus the correct message for the given audience. The actual delivery of these presentations to the specific audiences will likely be a combination of Black & Veatch team led or Fort Lauderdale led events. For briefing internal stakeholders, we would expect that Black & Veatch team members would be delivering the presentations and facilitating associated discussions. For external presentations such as regulators, customers, and media, we would expect Fort Lauderdale personnel to lead those, with any necessary support as may be needed in preparation or follow-up provided by Black & Veatch personnel.

Project Kickoff Meeting

The project kickoff meeting is intended to establish the City's internal project team and introduce the City’s team to the Vendor project team. Project scope, timeline, and roles and responsibilities will be discussed and agreed upon.

Black & Veatch will prepare for and conduct a Project Kickoff meeting with Core Project Team Members, Vendors, and Key Stakeholders to provide:

- Project Scope
- Project Timeline
- Communications Plan
- Roles/Responsibilities

Project Execution Plan Oversight

Black & Veatch knows that Quality Assurance is the critical facet of a successful AMI implementation. This is accomplished with established project controls, communications, and risk/issue management. The Project Execution Plan intends to bring all project parties together to level-set and define expectations on major project items. Black & Veatch focuses on the overall AMI program as a whole – the AMI vendor will have their schedule, the meter installation firm will have a schedule, the integration group will have their schedule, Black & Veatch oversees all moving parts to track the work of each of the project managers through an integrated Master Project Plan.

Deliverables

- Project Management providing a structured management approach during this implementation and deployment.
- Development and maintenance of the integrated master project plan.
- Maintenance of the risk/issue log.

Systems Integration Oversight

Black & Veatch works with the City and the Vendor to oversee Systems Integration. Black & Veatch's role is to oversee the work to assure the vendor is meeting its commitments. Black & Veatch's process of overseeing the system integration success is a combination of witnessing the testing or reviewing the test details witnessed by the City's assigned testing leads. For the Initial System Acceptance Test, City employees will perform the tests or witness the tests. Black & Veatch can provide checklists and suggested methodology to be used by the City employees. Black & Veatch will report items for resolution and re-testing.

FINAL SYSTEM ACCEPTANCE AMI SYSTEM COMPONENT METRICS SCORECARD

Target values for the Final System Acceptance Performance Metrics included are to be met or exceeded for a period of 30 consecutive days.

Metric	Target	Jan 4	Jan 5	Jan 6	Jan 7	Jan 8	Jan 9	Jan 10	Jan 11	Jan 12
Daily Read Performance	99.50%	99.76%	99.75%	99.76%	99.45%	99.77%	99.77%	99.78%	99.77%	99.57%
Billing Read Performance	99.75%	99.86%	99.86%	99.86%	99.87%	99.86%	99.87%	99.86%	99.87%	99.87%
High Revenue Read Performance	99.50%	99.86%	99.86%	100%	99.96%	99.99%	100%	99.99%	99.89%	99.89%
Interval Data Read Performance	99.00%	99.83%	99.84%	99.84%	99.81%	99.82%	99.85%	99.86%	99.85%	99.86%
Individual Meter ODR	95.00%	96.87%	95.24%	95.23%	96.85%	95.90%	95.96%	95.85%	96.11%	96.87%
Group ODR	95.00%	96.71%	96.73%	96.52%	96.91%	95.29%	96.41%	96.43%	96.76%	96.76%

Figure: Example of AMI Component Metric Scorecard

Black & Veatch can lead technical review meetings with designated internal and external resources to monitor progress and identify roadblocks for the duration of the system integration. If the City needs additional testing resources, Black & Veatch can propose additional resources for hands-on testing.

Deliverables

- Integration Coordination to include oversight of Integration Design, Development, and Testing
- Integration Progress Tracking and Reporting

AMI DEPLOYMENT

As a result of Black & Veatch's extensive AMI project experience, we have found that to deploy an AMI system successfully, the project management team needs to address deployment oversight, project communications, and proper controls through phase gating and overall system acceptance. Black & Veatch will fulfill the role of "owner's engineer" and work with the City and the Vendor to coordinate the deployment efforts. Black & Veatch will provide subject matter experts and support resources as needed.

Black & Veatch can provide the following services for this AMI Deployment Project Management:

- Provide structured project management during this deployment period.
    - Project Tasks executed in a timely and organized fashion.
- Coordinate with the City and Installation Coordinator to develop the Field deployment plan incorporating process and procedures for:
    - Supply chain
    - Contract employee protocols
    - Warehouse functions
    - Training
    - Field installation
    - Data Quality Assurance
- Perform oversight reviews and coordinate status meetings to review progress, review meter count progression, and identify areas where deployment activity is expected.
- Provide ongoing planning, troubleshooting, support for the management of this deployment.
- Review, monitor, and ensure that the communications plan is followed to ensure that customers, project team, steering committee, and City staff are aware of pertinent information regarding the AMI deployment project.

Deliverables

- Project Management providing a structured management approach during this deployment phase.
- Coordination with the City and Installation Coordinator to develop the field deployment plan.
- Oversight reviews and coordination of status meetings to review progress.
- Ongoing planning, troubleshooting, and support for the management of the full deployment.
- Review, monitoring, and assurance that the communications plan is followed.

References

Water AMI System Replacement

CITY OF HOLLYWOOD | HOLLYWOOD, FL

The City of Hollywood, located along the coast in southeastern Florida, serves 143,000 customers through its water distribution system that includes 44,000 water meters. The City engaged Black & Veatch to help them replace their aging water AMI system by initially assessing their current state and educating them on new AMI technology options.

Black & Veatch has been subsequently engaged to facilitate the Vendor

Solicitation process for AMI Technology and Endpoint replacement services.

These activities include requirements gathering, vendor identification, RFP packaging and issuance to qualified vendors, vendor response gathering, facilitating the City review and scoring of responses, managing vendor shortlist presentations, and contracting support. As is typical of a Vendor Solicitation, this process will also support the City in addressing the broader high-level project-related issues such as deployment planning and scheduling, project financial and staff planning, IT integration, and organizational change management.

Specialized Project Value

- Understanding of current industry offerings
  - Addressing obsolescence of their current metering system
  - System replacement planning
  - Deployment plan, sequencing, and schedule
  - CIS integration efforts
  - Field area network and endpoint deployment logistics

OWNER REFERENCE
City of Hollywood
2600 Hollywood Blvd
Hollywood, FL 33022

Vivek Galav
Water Utility Director
+1 954-967-4455
VGalav@hollywoodfl.org

HARDWARE AND SOFTWARE ENVIRONMENT
- Aclara Star
- Munis
- Paymentus

SERVICE DATES
- Phase 1: July – September 2020
- Phase 2: January – September 2021

STATUS OF IMPLEMENTATION
Starting Vendor Solicitation

KEY RESOURCES AND ROLES
- Marc Lipski, Project Director
- Chris Barlow, Project Manager
- Joe Turgeon, Engagement Lead and Subject Matter Expert
- Andrew Chastain-Howley, Water Metering SME

PROJECT COST
- Confidential

Water AMI Business Case and Feasibility

CITY OF SUGAR LAND | SUGAR LAND, TX

The City of Sugar Land is a growing suburb of Houston. This utility has about 45,000 water accounts. AMI is an enabling technology that supports this wide range of opportunity and potential benefit areas. In 2016 and 2017, Black & Veatch performed an assessment for the City that involved that strategy and AMI feasibility and business case analysis. Black & Veatch's approach was to review the City's current situation and requirements, evaluate the results and effectiveness of various AMI architectures, access relevant market-leading solutions, evaluate available options and scenarios, identify pilot designs and recommend the appropriate actions for the City to pursue. In addition to examining the core meter-to-cash process, Black & Veatch will evaluate, analyze and recommend the viability of using smart meter technologies to improve leakage and pressure management; water distribution operations and maintenance; water quality monitoring; and productivity and efficiency through less truck rolls while enhancing customer service.

Specialized Project Value

- Remotely and continuously monitored and diagnosed problems, preemptively prioritized and managed maintenance issues, and remotely controlled and optimized all aspects of the water distribution system using data-driven insights.
- Provided customers with the information and tools they need to make informed choices about their behaviors and water usage patterns.
- Provided the cost benefits of using smart meter technologies for production, distribution, meter shop, and customer service.
- Evaluated the use of such technology within the following categories:
  - Leakage and Pressure Management
  - Water Quality
  - Monitoring distribution Operations and Maintenance, and
  - Water meter replacement planning

OWNER REFERENCE
City of Sugar Land
2700 Town Center Blvd.
North Sugar Land, TX 77479

Brian J. Butscher
Assistant Direct of Public Works
+1 281-275-2456
BButscher@Sugarlandtx.gov

HARDWARE AND SOFTWARE ENVIRONMENT
To be determined

SERVICE DATES
2019-Ongoing

STATUS OF IMPLEMENTATION
Starting RFP Preparation and Vendor Solicitation

KEY RESOURCES AND ROLES
- Marc Lipski, Project Director
- Tom Bohrer, Engagement Lead and Subject Matter Expert
- Andrew Chastain-Howley, Water Metering SME
- David Sayers, Water Audit SME

PROJECT COST
- Confidential

CAPABILITIES DEMONSTRATED

- Water AMI Technology Overview
- AMI Business Case

Smart Meter Strategy

JACKSONVILLE ELECTRIC AUTHORITY | JACKSONVILLE, FL

Jacksonville Electric Authority (JEA) chose Black & Veatch to perform a detailed AMI strategy and business case for their 300,000 electric meters and 350,000 water meters.

Black & Veatch developed an AMI strategy to effectively manage the transition of water and electric metering technology from first generation to second generation AMI technologies. This included stakeholder requirements, scenario analysis, benchmark evaluation, and recommended strategies. Program objectives included reviewing JEA's current meter strategy and identifying JEA's desired future state. BV assisted them by evaluating different strategy options, reviewing metering industry benchmarks and best practices, and then presenting the recommended strategy to JEA's Senior Leadership Team.

AMI Business Case

Subsequent to this work, JEA retained Black & Veatch to develop a detailed business case for JEA to examine their options and determine associated costs and benefits. BV provided this solution by reviewing the electric and water meter strategy and developing meter strategy scenarios to transition to the future state. JEA migrated from Cellnet AMR to a Gridstream AMI system.

Specialized Project Value

Black & Veatch helped JEA transition to a dual-protocol system. Their challenge was to understand how to leverage the AMI system to accommodate the Clean Power Plan and leverage the AMI system for non-meter reading technology. On the water side, JEA was deciding how to move from drive-by AMR to AMI. BV evaluated multiple water deployment strategies that would be different from their electric system.

Their financial payback on the water side was not nearly as robust as their electric side, so Black & Veatch recommended a run to failure approach. The benefit for JEA was identifying a financially prudent and operationally effective strategy for surgically converting AMR to AMI for water endpoints and then identifying a threshold deployment density whereby it would make sense to mass deploy AMI on their water meters proactively.

OWNER REFERENCE
Jacksonville Electric Authority
21 West Church Street
Jacksonville, FL 32202

Brandon R. Cottrell
Program Manager Customer Field & Meter Services
+1 904-665-6000
cottbr@jea.com

HARDWARE AND SOFTWARE ENVIRONMENT
- Cellnet Fixed Network AMR
- L+G Gridstream AMI
- Oracle CC&B
- Siemens eMeter

SERVICE DATES
2015 - 2016

STATUS OF IMPLEMENTATION
Completed

PROJECT COST
- Confidential

CAPABILITIES DEMONSTRATED
- AMI Strategy
- Business Process Modeling
- AMI Business Case

AMI Integration and Meter Analytics

KANSAS CITY BOARD OF PUBLIC UTILITIES | KANSAS CITY, KS

Kansas City Board of Public Utilities (BPU) has an Elster AMI system for its 63,000 customers. Black & Veatch was engaged for analyzing the AMI data and aiding with metering system analysis and upgrades for almost 5 years. Project tasks include troubleshooting meter interface unit and mechanical meter body issues. The project also incorporated a "first-of-its-kind", helping BPU to manage their distribution system water losses by integration of the AMI data with other BPU systems and software.

Black & Veatch also worked on the rich data set from the consumption meters to develop a more accurate future system demand curve for annual budgets and more effectively determine the timing on capital improvement projects to meet system growth.

Worlds First Automated Non-Revenue Water Loss Audit using AMI

This project includes the world's first automated water audit which integrated AMI consumption and multiple SCADA supply data points in near real-time. The project actively calculated water production and water consumption to measure apparent and real water losses daily. What used to take several individuals many hours to calculate happens automatically each day.

Other project details:

- Diverse customer mix – residential, parks, schools, light commercial, industrial, and agriculture.
- Kansas BPU upgraded their Elster AMI system without impacting data connectivity or accuracy.
- Following AWWA M36 Water Loss Measurement Standard
- Piloted in a pressure zone of 12,000 meters, scaled to all pressure zones o 63,000+ meters.

Specialized Project Value

- Set up analysis tools for BPU staff to monitor AMI system from total aggregation down to an individual customer level.
- Saved over $200,000 in water treatment and pumping costs since 2017.
- A single point of truth used by employees of Kansas BPU at all levels.

OWNER REFERENCE
Kansas City Board of Public Utilities
540 Minnesota Avenue
Kansas City, KS 66101

Steve Green
Director of Water Distribution
+1 913-573-9630
sgreen@bpu.com

HARDWARE AND SOFTWARE ENVIRONMENT
- Elster AMI
- Energy Axis

SERVICE DATES
2016-2021

STATUS OF IMPLEMENTATION
Completed

KEY RESOURCES AND ROLES
- Andrew Chastain-Howley, Water Metering SME
- Ben Cownie, Business Intelligence SME

PROJECT COST
- Confidential

CAPABILITIES DEMONSTRATED
- AMI Integration
- Integrating Multiple Data Sources
- Data Visualization
- Data Analytics
- Data Mining & Knowledge Discovery

Minority/Women (M/WBE) Participation

Black & Veatch has a strong track record of utilizing MBW/WBE/SBE firms in the local community, and we have outstanding partnering relationships with such firms leveraging quality services to meet M/WBE procurement goals under Florida Statues.

Black & Veatch is committed to fulfilling the requirements of Florida's MBE/WBE Business Enterprise goals and to significantly enhancing local economic development. Black & Veatch has made great strides in developing similar programs in Florida with local MBE/WBE companies on previous projects and around the country to help overcome the obstacles that prevent minority businesses from becoming effective leaders.

On this project, Black & Veatch is partnering with Dickey Consulting Services, Inc., a local sub-consultant registered with the City or with Broward County. As demonstrated by our organizational chart, we have provided a key role for each sub-consultant to participate in this project.

RECOGNITION

Federal Small Business Administration

Award of Distinction awarded for exceptional success in promoting small business utilization. Only achieved by 2% of large federal contractors

Category "A" firm Designation based on subcontracting programs and statistical results that small, small disadvantaged, 8(a) and woman-owned businesses provided with the maximum practical opportunity to participate in our projects.

The City of Fort Lauderdale benefits from MBE/WBE participation in several ways. From an economic perspective, a large portion of every dollar earned is spent locally; therefore using local small business firms re-circulates money throughout the region. However, choosing a MBE/WBE firm is more than a matter of economics. **Black & Veatch makes it a priority** because it allows these firms to work on large-scale projects from which their size or resource level may have precluded them. By utilizing M/WBE firms in significant roles, we support the development of their abilities and increase their resources, enabling them to operate more competitively in the marketplace.

BLACK & VEATCH VALUES SUPPLIER DIVERSITY

We are committed to the participation of minority, women's, and underrepresented enterprises in our projects through mutually beneficial business relationships. This commitment is based on the strong belief that supplier diversity supports our mission of building a world of difference and can help us realize our vision of leading the industry in value creation for our clients and their constituents.


State of Florida
Woman & Minority Business Certification
Dickey Consulting Services, Inc.
Is certified under the provisions of
287 and 295.187, Florida Statutes, for a period from:
04/13/2020 to 04/13/2022
Jonathan R. Satter, Secretary
Florida Department of Management Services
Department of
MANAGEMENT
SERVICES
Office of Supplier Diversity
Office of Supplier Diversity
4050 Esplanade Way, Suite 380
Tallahassee, FL 32399
850-487-0915
www.dms.myflorida.com/osd

Sub-Consultants

COORDINATION WITH SUB-CONSULTANTS

The City will have access to a local team of professionals with expertise in stormwater design, climate change, sea-level rise, surveying, public relations, community outreach, geotechnical services, and the comprehensive capabilities to deliver this project successfully.

Black & Veatch regularly teams with local subconsultants to complement our comprehensive engineering services capabilities. During preliminary discussions of the project scope, Black & Veatch will identify the subconsultant Team members that will be utilized during the project.

Each sub-consultant's scope and fee will be developed, and each project-specific contract between Black & Veatch and a consultant Team member will be processed upon your approval. The subconsultant contract will be adhered to during project implementation. Should additional subconsultant services be identified during a project, a change order will be developed by Black & Veatch and approved by you before proceeding. Black & Veatch will review subconsultant deliverables prior to delivery to you.

SUBCONSULTANT MANAGEMENT

You will receive services from Black & Veatch subconsultants as an extension of your own staff. Each subconsultant participating on an assignment will be required to have input on scoping, schedule, and cost on the front end of a project.

Black & Veatch requires subcontractor deliverables to engage the same quality management procedures as our own staff. Deliverables will always be reviewed and transmitted by Black & Veatch to our client unless other arrangements are made in advance of the assignment.

We have teamed with several local subconsultants to best support this project. We have chosen firms that we have worked with in the past and are confident in their abilities to support this project.

AECOM

Technical Advisory

3201 W Commercial Blvd, Fort Lauderdale, FL 33309

Balancing the need for safe, reliable water systems while incorporating advanced technologies for optimum delivery requires a deep understanding of interconnected water flow patterns; as well as the implementation of cutting-edge technology that can help track changes in user trends and demand, detect flow anomalies; while helping shift water flow patterns as necessary.

As a world leader in Water Systems Program Management, AECOM has worked with clients in upgrading their metering systems by supporting their due diligence to automatically collect consumption, diagnostic and status data from water devices which then help transfer that data to a central database for billing and analysis. From initial master planning through final construction and operations and maintenance services — on both traditional and alternative project-delivery options; AECOM assists with strategic decisions related to

	meter and system automation, improving utility operations, customer services, or other aspects available from a Smart Grid platform.

Dickey Consulting Services, LLC

Public Relations

1033 NW 7th Street, Suite 206
Fort Lauderdale, FL 33311
+1 954-467-6822

Dickey Consulting Services (DCS) is an economic development, government relations, project management, and communications consulting firm. The organization and its associates provide services to public and private enterprises, coordinating, implementing, and promoting projects related to economic and community development, government relations, business development, housing, public relations, public involvement, and other marketing initiatives.

DCS provides guidance on developing effective partnerships and achieving collective objectives, working closely with administrators, public officials, elected officials, and various community/civic groups to develop and initiate public involvement and public relations programs. DCS has the capability to work on multiple projects simultaneously and ensure successful completion.

Required Forms

a. Insurance Certificate

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/1/2022 — 3/28/2022

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 (816) 960-9000	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:
INSURED 1482177 BLACK & VEATCH MANAGEMENT CONSULTING, LLC 11401 LAMAR AVE OVERLAND PARK KS 66211 BOHER, TOM	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Zurich American Insurance Company — 16535 INSURER B : Lexington Insurance Company — 19437 INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 18376319 **REVISION NUMBER:** XXXXXXX

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	Y	Y	GLO 4641358	11/1/2021	11/1/2022	EACH OCCURRENCE	$ 2,000,000
A	CLAIMS-MADE X OCCUR			GLO 1365630	11/1/2021	11/1/2022	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 4,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 4,000,000
	OTHER:							$
A	AUTOMOBILE LIABILITY	Y	Y	BAP 4641355 (AOS)	11/1/2021	11/1/2022	COMBINED SINGLE LIMIT (Ea accident)	$ 2,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$ XXXXXXX
	X OWNED AUTOS ONLY; SCHEDULED AUTOS						BODILY INJURY (Per accident)	$ XXXXXXX
	X HIRED AUTOS ONLY; X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$ XXXXXXX
								$ XXXXXXX
	UMBRELLA LIAB OCCUR			NOT APPLICABLE			EACH OCCURRENCE	$ XXXXXXX
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$ XXXXXXX
	DED RETENTION $							$ XXXXXXX
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY		Y	WC 4641353 (AOS)	11/1/2021	11/1/2022	X PER STATUTE; OTH-ER	
A	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: N	N/A		WC 4641354 (ID, MA, WI)	11/1/2021	11/1/2022	E.L. EACH ACCIDENT	$ 1,000,000
A	(Mandatory in NH)			WC 1365632	11/1/2021	11/1/2022	E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
A	If yes, describe under DESCRIPTION OF OPERATIONS below			WC 1365631 (NE)	11/1/2021	11/1/2022	E.L. DISEASE - POLICY LIMIT	$ 1,000,000
B	PROFESSIONAL LIABILITY	N	N	026030198	11/1/2021	11/1/2022	$10,000,000 PER CLAIM $10,000,000 ANNUAL AGGREGATE	

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

PROJECT NUMBER: 8113826.3500; PROJECT NAME: 12648-1026 ADVANCED METERING INFRASTRUCTURE (AMI) CONSULTANT SERVICES; PROJECT MANAGER: BOHER, TOM; GENERAL LIABILITY AND AUTO LIABILITY ARE PRIMARY AND NON-CONTRIBUTORY. CITY OF FORT LAUDERDALE IS INCLUDED AS AN ADDITIONAL INSURED ON THE GENERAL AND AUTO POLICIES. WAIVER OF SUBROGATION IN FAVOR OF THE ADDITIONAL INSURED ON THE GENERAL, AUTO, AND WORKER'S COMPENSATION POLICIES. 30 DAY NOTICE OF CANCELLATION APPLIES, 10 DAYS NOTICE FOR NON-PAYMENT OF PREMIUM.

CERTIFICATE HOLDER	CANCELLATION: See Attachments
18376319 CITY OF FORT LAUDERDALE 100 N. ANDREWS AVENUE FORT LAUDERDALE FL 33301	**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 Agnello

POLICY NUMBER: GLO 4641358, GLO 1365630

COMMERCIAL GENERAL LIABILITY
CG 20 10 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
As required by written contract	As required by written contract
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and

If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

Attachment Code: D560353 Master ID: 1482177, Certificate ID: 18376319

Waiver Of Subrogation (Blanket) Endorsement

Policy No.	Eff.Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer	Add'l. Prem	Return Prem.
GLO 4641358	11/1/2021	11/1/2022	11/1/2021			
GLO 1365630	11/1/2021	11/1/2022	11/1/2021			

Named Insured: BLACK & VEATCH MANAGEMENT CONSULTING, LLC

This endorsement modifies the insurance provided under the following:

Commercial General Liability Coverage Part

The following is added to the **Transfer Of Rights Of Recovery Against Others To Us Condition:**

If you are required by a written contract or agreement, which is executed before a loss, to waive your rights of recovery from others, we agree to waive our rights of recovery. This waiver of rights shall not be construed to be a waiver with respect to any other operations in which the insured has no contractual interest.

POLICY NUMBER: BAP 4641355 (AOS)

COMMERCIAL AUTO
CA 20 48 02 99

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED INSURED

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE
GARAGE COVERAGE FORM
MOTOR CARRIER COVERAGE FORM
TRUCKERS COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

This endorsement indentifies person(s) or organization(s) who are "insureds" under the Who Is An Insured Provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage Form.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement Effective:11/1/2021
Named Insured: BLACK & VEATCH MANAGEMENT CONSULTING, LLC

SCHEDULE

Name of Person(s) or Organization(s): AS REQUIRED PER WRITTEN CONTRACT

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to the endorsement.)

Each person or organization shown in the Schedule is an "insured" for Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured Provision contained in **Section II** of the Coverage Form.

Waiver of Transfer Of Rights Of Recovery Against Others To Us

Policy No.	Eff.Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer No.	Add'l. Prem	Return Prem.
BAP 4641355 (AOS)	11/1/2021	11/1/2022	11/1/2021			

This endorsement is issued by the company named in the Declarations. It changes the policy on the effective date listed above at the hour stated in the Declarations.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

Named Insured: BLACK & VEATCH MANAGEMENT CONSULTING, LLC

Address (including ZIP code): 11401 LAMAR AVE OVERLAND PARK KS 66211

This endorsement modifies insurance provided under the:

Business Auto Coverage Form
Truckers Coverage Form
Garage Coverage Form
Motor Carrier Coverage Form

SCHEDULE

Name of the Person or Organization:
AS REQUIRED BY WRITTEN CONTRACT

We waive any right of recovery we amy have against the designated person or organization shown in the schedule because of payments we make for injury or damage caused by an "accident" or "loss" resulting from the ownership, maintenance, or use of a covered "auto" for which a Waiver of Subrogation is required in conjunction with work performed by you for the designated person or organization. The waiver applies only to the designated person or organization shown in the schedule.

WC 00 03 13

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

AS REQUIRED PER WRITTEN CONTRACT

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.
(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Effective Policy No. WC 4641353 (AOS), WC 4641354 (ID, MA, WI), WC 1365632, WC 1365631 (NE)

Insured: BLACK & VEATCH MANAGEMENT CONSULTING, LLC

Effective Date: 11/1/2021

b. Local Business Preference Certification [if applicable]

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

115 S. Andrews Ave., Rm. A-100, Ft. Lauderdale, FL 33301-1895 – 954-831-4000

VALID OCTOBER 1, 2021 THROUGH SEPTEMBER 30, 2022

DBA:
Business Name: BLACK & VEATCH CORPORATION

Receipt #: 315-252905
Business Type: ENGINEER

Owner Name: BLACK & VEATCH HOLDING CORPORATION
Business Location: 3111 N UNIVERSITY DR STE 700
CORAL SPRINGS
Business Phone: 954-838-0686

Business Opened: 05/15/2010
State/County/Cert/Reg: 8132
Exemption Code:

Rooms	Seats	Employees	Machines	Professionals
		5		

For Vending Business Only
Number of Machines: Vending Type:

Tax Amount	Transfer Fee	NSF Fee	Penalty	Prior Years	Collection Cost	Total Paid
30.00	3.00	0.00	0.00	0.00	0.00	33.00

THIS RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS

THIS BECOMES A TAX RECEIPT

WHEN VALIDATED

This tax is levied for the privilege of doing business within Broward County and is non-regulatory in nature. You must meet all County and/or Municipality planning and zoning requirements. This Business Tax Receipt must be transferred when the business is sold, business name has changed or you have moved the business location. This receipt does not indicate that the business is legal or that it is in compliance with State or local laws and regulations.

Mailing Address:

BLACK & VEATCH HOLDING CORPORATION
C/O TAX DEPT P7

11401 LAMAR
OVERLAND PARK, KS 66211

Receipt #WWW-20-00239561
Paid 09/17/2021 33.00

2021 - 2022

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		5		

Signature

For Vending Business Only
Number of Machines: Vending Type:

Tax Amount	Transfer Fee	NSF Fee	Penalty	Prior Years	Collection Cost	Total Paid
30.00	3.00	0.00	0.00	0.00	0.00	33.00

Receipt #WWW-20-00239561
Paid 09/17/2021 33.00

The below forms have been completed in the BidSync site.

c. Disadvantaged Business Enterprise Preference Certification [if applicable]

Black & Veatch is not a Disadvantaged Business Enterprise.

d. Non-Collusion Statement

e. Non-Discrimination Certification Form

f. E-Verify Affirmation Statement

g. Contract Payment Method [if applicable]

h. Proposal Certification Complete and attach the Certification