Water Treatment Plant and Wastewater Treatment Plant Projects

For the City of Hollywood, Florida

RFQ-041-23-JJ

February 28, 2023

Jacobs

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Executive Summary

Jacobs Engineering Group Inc.
550 W. Cypress Creek Road Suite 400
Fort Lauderdale, FL 33309

February 28, 2023

City of Hollywood
Procurement Services Division
Attn: Mary Kleinpeter-Zamora
100 N. Andrews Avenue, 6th Floor
Fort Lauderdale, FL 33301

Re: CITY OF HOLLYWOOD, FLORIDA
WATER TREATMENT PLANT AND WASTEWATER TREATMENT PLANT PROJECTS
RFQ-041-23-JJ

Dear Members of the Selection Committee,

Known for its beautiful beach, the City of Hollywood (City) is continuing to experience rapid growth. As the City nears its centennial in 2025, the importance of improving utility services that efficiently satisfy current and future infrastructure needs through your CIP plan is paramount. The City is seeking qualified firms to deliver professional engineering services to support the design and construction of various projects. The service areas include Service Area 1 – Wastewater Treatment Plant Projects; Service Area 2 – Water Supply and Treatment Projects; Service Area 3 – Infrastructure Projects; and Service Area 4 – Quality Assurance, Quality Control and Value Engineering Services.

To be successful, the City requires a partner with proven experience, a deep bench of professionals with flexibility to scale and coordinate with your internal staff, as well as expertise with successful similar projects. Jacobs Engineering Group Inc. (Jacobs) is that partner. With seven decades of successful service performance in Florida and a strong track record achieving high-quality projects that are completed on time and within budget, Jacobs understands your needs and expectations. The City will gain the following by selecting the Jacobs team:

- **Proven and effective management of similar general services contracts**: Jacobs holds many general engineering services contracts with water utilities in South Florida performing similar work. For instance, our proposed water team has recently worked on membrane skid replacement and refurbishment projects for Boynton Beach, North Miami Beach, Collier County, and Bonita Springs Utility. No firm has more membrane experience then Jacobs! Similarly, our wastewater team has extensive experience working on rehabilitating or replacing headworks, oxygenation trains, and primary/secondary clarifiers for Miami Dade County, Fort Lauderdale, Gainesville, and Jacksonville.
- **Local knowledge and project leadership backed by global expertise:** We bring in-depth knowledge of unique challenges in coastal communities and understanding of regulations governing our region, and we provide a regional and global perspective to support the City in any service area. Our philosophy is to deliver high-quality work, have open and honest communication, and grow our relationship with the City. We have an experienced and local project leadership backed by national experts that bring experiences from around the globe and execute important QA/QC and value engineering tasks. Our proposed local project manager understands your needs and will work closely with you and service area leads to identify the right resources and develop innovative and efficient solutions.
- **Industry recognized asset management system that is proven and reproduceable**: Our team has been helping utilities effectively manage water and wastewater assets for decades. We have developed specialized practices to help optimize the operation, maintenance, and capital improvement of our clients' infrastructure. Jacobs has partnered with multiple agencies including Water Environment Federation, U.S. Environmental Protection Agency, National Association of Clean Water Agencies, Association of Metropolitan Water Agencies, and others, to author industry-leading asset management guidance documents. Our approach is both proven and reproducible. One of our marque asset management projects in this area is with the City of Fort Lauderdale.

We look forward to entering into a partnership with the City to deliver successful water and wastewater projects. If you have any questions, please contact us directly.

Sincerely,

GJ Schers
Project Manager
239.404.0245, GJSchers@Jacobs.com

Ellen Patterson
Geographic Operations Manager / Principal-In-Charge
561.914.0192, Ellen.Patterson@Jacobs.com

Tab B | Executive Summary

Jacobs has evolved from a one-person engineering consultant to a publicly traded Fortune 500 company. We lead the global professional services sector delivering solutions for a more connected and sustainable world. With a local office in Fort Lauderdale and backed by nearly 4,000 professionals who live and work throughout the state of Florida, we are ready and available to serve the City of Hollywood and its residents.

Basic Company Information

Company Name	Jacobs Engineering Group Inc.
Background:	Founded by Dr. Joseph J. Jacobs in 1947, Jacobs is a publicly traded corporation. Our full spectrum of services includes scientific and technical advisement, planning, engineering, and construction and program management, covering infrastructure markets for government, business, industrial, and commercial clients. Our local resources and similar experience for surrounding counties show we understand Florida and local regulations, while also providing the capacity and specialized resources right here to develop responsive, customized solutions.
Corporate Office	1999 Bryan Street, Suite 1200, Dallas TX 75201 Phone: 214.638.0145 Fax: 214.638.0447
Address of Office location that will service this contract:	550 W. Cypress Creek Rd., Suite 400 Fort Lauderdale, FL 33309 Phone: 954.351.9256 Fax: 954.772.2621
Primary Contact Person:	GJ Schers, PMP, Project Manager Phone: 239.404.0245, Email: GJSchers@Jacobs.com
Name and Title of Authorized Representative:	Ellen Patterson, Geographic Operations Manager / Principal-in-Charge, Phone: 561.914.0192, Email: Ellen.Patterson@Jacobs.com
Website:	www.jacobs.com
Size of the Firm:	Over 61,000 employees globally, 32,000 employees in the US, nearly 4,000 employees in Florida

Key Staff

Our locally led project team of key staff and subject matter experts was purposefully selected for this opportunity, for their specific expertise, as well as their experience working together for cities experiencing similar issues as the City of Hollywood. Full resumes for key staff and abbreviated resumes for additional staff can be found in Tab D.

Staff Member	Title	Office Location
Ellen Patterson	Principal-in-Charge	Fort Lauderdale, FL
GJ Schers, PMP	Project Manager	Fort Lauderdale, FL
Raul Alfaro, PE, ENV SP	Deputy Project Manager/Service Area 2 Water Project Manager	Fort Lauderdale, FL
Joe Elarde, PE	Water, Membrane skid replacement task lead	Naples, FL
Juan Aceituno, PE	Service Area 1 Wastewater Project Manager	Miami, FL
Rudy Fernandez, PE	Service Area 3 Infrastructure Project Manager	Palm Beach, FL
Axel Rivera, PE, PMP	Service Area 4 QA/QC and Value Engineering Project Manager	Fort Lauderdale, FL

Staff Member	Title	Office Location
Russel Ford	Water QA/QC	Morristown, NJ
Julian Sandino	Wastewater QA/QC	Lawrence, KS
Dave Green	Grants and Legislative Assistance	Fort Lauderdale, FL
Matt Crowley	Condition Assessment	Boston, MA
Jim Oldach	Asset Management	Syracuse, NY

Summary of Key Elements

Proven and Effective Management of Similar General Services Contracts

By its very nature, a general engineering services contract requires a strong level of commitment. We will form qualified and experienced project teams as specific projects are undertaken and completed. Our broad experience with Florida and national municipalities allows us to create innovative and efficient solutions and apply a right-size approach for your projects. From our depth of experience working with public entities on similar contracts, to our expertise in the various design disciplines, we understand the need to apply all available tools to successfully deliver projects.

Jacobs has nearly 60 GEC/MSA contracts in Florida, including those close to the City of Hollywood:

- West Palm Beach
- Boynton Beach
- Deerfield Beach
- North Springs Improvement District
- Miami Beach
- Fort Lauderdale
- Pembroke Pines
- The Seminole Tribe of Florida

Familiarity with general engineering contracts (GECs): Jacobs has held and holds many general engineering services contracts with water/wastewater utilities in Florida performing similar work. Please refer to the graphic to the right, showing our Professional General Engineering Services Contracts in Florida. Under these contracts, we have successfully delivered very similar work to what is planned for the City.

This experience includes GEC type contracts for the City of Cocoa, City of Melbourne, City of Deerfield Beach, City of Boynton Beach, City of Fort Lauderdale, City of Winter Park, and many others. In addition, we have extensive experience with coastal communities, from the Florida keys to Jacksonville, and from the Gulf Coast to the Florida panhandle. These regional projects lend themselves well to our knowledge of site and local conditions. As similar coastal communities, they have had many of the same issues you are facing, including sea level rise, salt water intrusion, hurricanes, coastal erosion, climate change, pandemics, etc.

Deep bench of resources to respond to fluctuating and specialized demands: Our local team leaders are located in the Fort Lauderdale office and supported by almost 4,000 professionals in Florida, including nearly 100 water and wastewater engineers. With over 61,000 staff worldwide, we have the depth of resources to handle multiple projects simultaneously or to provide specific resources for niche expertise and specialized projects. We have carefully evaluated the list of projects provided in your RFQ, as well as your four Service Areas, and have proposed staff with specific experience and expertise working on these types of projects.

Extensive experience with projects currently in your Capital Improvement Plan (CIP): In the last seven years, our proposed water team has worked on membrane skid replacement and refurbishment projects for the Cities of Boynton Beach, North Miami Beach and Marco Island, Collier County, North Springs Improvement District, Seminole Tribe of Florida, Royal Caribbean and Bonita Springs Utility. No firm has more NF and RO membrane experience in Florida then Jacobs! Similarly, our wastewater team has extensive experience rehabilitating and replacing headworks, oxygenation trains, and primary/secondary clarifiers for Miami Dade County, and the Cities of Fort Lauderdale, Gainesville, and Jacksonville. Also, our asset management team has worked on similar and very successful projects in Florida for the Cities of Cocoa and Fort Lauderdale, Gwinnett County in Georgia, and United Utilities in England.

No firm has more membrane experience than Jacobs.

Local Knowledge and Project Leadership Backed by Global Expertise

We bring decades of experience supporting many of your neighboring municipalities with similar challenges as the City and bring regional and global perspectives to support the City in any of your service areas. Our overall philosophy is to meet and exceed your expectations while we deliver high-quality work, have open and honest communication, and grow our relationship with the City. We will accomplish this by deploying a team focused on defining your critical success factors while developing clear lines of communications and working with you every step of the way.

In addition to the local project managers, you will be working with our local service area leads backed by Jacobs' deepest and brightest bench of resources in the industry. With a sharp focus on schedule compliance, financial performance, safety, quality, and risk management, our team is flexible and scalable, enabling us to right-size our delivery teams and services according to your service area needs.

We will augment the project teams with subject matter expertise required for complex or niche challenges and can provide full-service project delivery. As a single integrated delivery firm, Jacobs provides deep domain industry experience and multidiscipline expertise.

We bring the experience from supporting many of your neighboring municipalities with similar challenges as the City and bring regional and global perspectives to support the City in any aspect of your service areas.

We have the qualifications and experience to assist the City with all the service areas mentioned in your RFQ. We are a local firm and the *Engineer News-Record's* #1 design firm for the past 5 consecutive years.

100% Satisfaction is our Goal

We are committed to resolve issues early in a transparent and productive process with the end goal in mind to your complete satisfaction.

2022 ENR Ranking

#1

- Design
- Wastewater Treatment Plants
- Sewer and Waste
- Sanitary and Storm Sewers
- Site Assessment and Compliance
- Program Management
- Operations and Maintenance
- PMCM

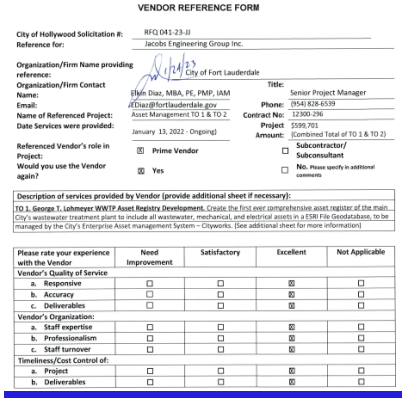
#2

- Water Supply
- Water Treatment
- Desalination

Jacobs has held a top five position in the Top 500 list since Engineering New-Record ranking began in 2003

Industry Recognized Asset Management System that is Proven and Reproduceable, and Performed to the Client's Expectation

We are helping water and wastewater utilities achieve not only performance improvement, but award-winning performance improvement in asset management. The following utilities are just a few of our clients that have been recognized by reliability industry professionals:



VENDOR REFERENCE FORM

City of Hollywood Solicitation #: RFQ 041-23-JJ
Reference for: Jacobs Engineering Group Inc.
Organization/Firm Name providing reference: City of Fort Lauderdale
Organization/Firm Contact Name: Elvin Diaz, MBA, PE, PMP, IAM — Title: Senior Project Manager
Email: EDiaz@fortlauderdale.gov — Phone: (954) 828-6539
Name of Referenced Project: Asset Management TO 1 & TO 2 — Contract No: 12300-296
Date Services were provided: January 13, 2022 - Ongoing — Project Amount: $599,701 (Combined Total of TO 1 & TO 2)
Referenced Vendor's role in Project: ☒ Prime Vendor ☐ Subcontractor/ Subconsultant
Would you use the Vendor again? ☒ Yes ☐ No. Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
TO 1, George T. Lohmeyer WWTP Asset Registry Development. Create the first ever comprehensive asset register of the main City's wastewater treatment plants to include all wastewater, mechanical, and electrical assets in a ESRI File Geodatabase, to be managed by the City's Enterprise Asset management System – Cityworks. (See additional sheet for more information)

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	☐	☐	☒	☐
b. Accuracy	☐	☐	☒	☐
c. Deliverables	☐	☐	☒	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	☒	☐
b. Professionalism	☐	☐	☒	☐
c. Staff turnover	☐	☐	☒	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	☒	☐
b. Deliverables	☐	☐	☒	☐

As shown in the reference form (above), the City of Fort Lauderdale is extremely satisfied with the asset management work we are delivering for the Public Works department. The full -size version of this form can be found in Tab G | References.

- **Metropolitan Sewer District of Cincinnati (MSDGC)** – Following MSDGC engagement with Jacobs in 2010 and working together to evolve the maintenance program over the next 3 years, MSDGC was named Best Emerging Reliability Program in 2013 by *Uptime Elements* Magazine (www.reliabilityweb.com).
- **Gwinnett County Department of Water Resources (GCDWR)** – In 2014, we assessed the GCDWR maintenance and reliability program, developed a roadmap for improvement, and then assisted in implementing the multi-year plan. In 2015, GCDWR was recognized as Best Precision Alignment Program by *Uptime Elements* Magazine (www.reliabilityweb.com), in 2017 GCDWR was named runner up in Emerson's global reliability award competition, second only to Saudi Aramco Oil Refinery in Saudi Arabia, and in 2020 received an Uptime Elements Award for Best Condition Monitoring Program Management.
- **United Utilities Water and Wastewater (UU), Manchester, UK** – UU is the fourth largest water utility in the world. After engaging with Jacobs in 2019 for development of a maintenance and reliability program improvement plan, UU received the *Uptime Elements* Magazine (www.reliabilityweb.com) award for Best Leadership for Reliability Award in 2022.

More locally, we are engaged with the **City of Fort Lauderdale, FL** on their asset management work covering all utilities and facilities of the Public Works department.

TAB C

Firm Qualifications and Experience

Tab C | Firm Qualifications and Experience

As a firm with a 70-year Florida presence, Jacobs offers the City a long history of success in similar Florida projects. Our team offers proven performance, a commitment to the City, and expertise in your services areas. Collectively, our team has the depth of resources and unique experience that closely aligns to your RFQ, enabling us to immediately implement projects for the City, and deliver projects that are on-time and within budget.

Company Name	Jacobs Engineering Group Inc.
Years in Florida	Over 70 (Since 1951)
Years in business	Over 70 (Since 1947)
Business Structure:	Corporation, registered as a legal entity in the State of Florida. Federal Tax ID: 95-4081636 publicly traded (NYSE: J)
Background:	Founded by Dr. Joseph J. Jacobs in 1947, Jacobs is a publicly traded corporation. Our full spectrum of services includes scientific and technical advisement, planning, engineering, and construction and program management, covering infrastructure markets for government, business, industrial, and commercial clients. Our local resources and similar experience for surrounding counties show we understand Florida and local regulations, while also providing the capacity and specialized resources right here to develop responsive, customized solutions.
Website:	www.jacobs.com
Size of the Firm:	Over 61,000 employees globally, 32,000 employees in the US, nearly 4,000 employees in Florida
Corporate Office	1999 Bryan Street, Suite 1200 Dallas, TX 75201 Phone: 214.638.0145 Fax: 214.638.0447
Address of Office Location that will Service this Contract:	550 W. Cypress Creek Rd., Suite 400 Fort Lauderdale, FL 33309 Phone: 954.351.9256 Fax: 954.772.2621

With ample talent for any task, Jacobs is a solutions provider ready to respond to a full spectrum of professional services including consulting, planning, design and permitting, project management, construction administration, startup, and operation services for government and private sector clients.

Delivery Office for this contract:
550 W Cypress Creek Rd.
Suite 400
Fort Lauderdale, FL 33309

Jacobs Company Overview

Jacobs provides deep domain industry experience and multidiscipline expertise as a total solutions provider. We bring more than 70 years of leadership in engineering and construction management. Since 1951, we have been a part of the Florida engineering community.

We look forward to beginning a strong partnership, working as an extension of your staff to deliver successful projects and further your commitment to the residents of the City of Hollywood.

Providing Water and Wastewater Utility Work in Florida Over 70 Years

For over 70 years, Jacobs has provided clients including Florida utility clients, similar scope of services as proposed for the City. During that time, we have been awarded dozens of continuing services agreements. Simply put, we have ample familiarity and experience with the full spectrum of wastewater, water, and infrastructure work. We offer continuity in institutional knowledge, a history of strong delivery, a breadth of firm resources, and a team with scalable delivery.

Relative Size of Firm

With over 61,000 employees firmwide, including nearly 4,000 staff in Florida, we offer capabilities in every discipline required for the City's service areas, with the local capability and bench strength to provide expertise in any technical discipline. Our team is backed by a deep bench of professionals, who are ready and available. This allows us to augment your staff, deliver specialty services, subject matter expertise for simple, complex, or niche issues, and provide full-service project delivery, as needed.

Category	# of FL Jacobs Staff
Technicians	429
Professionals	2,531
Operatives	238
Laborers and Craft Workers	230
First/Mid-Level Officials and Managers	355
Executive/Senior Level Officials	44
Administrative Support Workers	133
Total	**3,960**

Experience and Depth Bring Strength and Quality – Our Philosophy in Providing Similar Services

Our overall philosophy in providing professional service is to deliver high-quality work and build a long-term and trusted client relationship. This is done through engagement of highly qualified personnel and thorough open and honest communication during every step of each water and wastewater project. This process starts with providing a detailed scope of services to make sure that our understanding aligns with your vision of the work and provides a roadmap for successfully completing the project.

We deliver multi-year, multitask general engineering contracts to over 60 clients across Florida that encompass all the service categories in your RFQ. These clients include the cities of Fort Lauderdale, Key West, Coral Springs, North Springs, Deerfield Beach, Boynton Beach, West Palm Beach, Cooper City, Pembroke Pines, Miami-Dade WASD, Florida Keys Aqueduct Association, and the South Florida Water Management District to name just a few.

Our experience from supporting many of your neighboring municipalities with similar challenges, benefits the City. We also bring a regional and global perspective supported by many of our subject matter experts (SMEs) that call Florida home. Overall, we can fully support the City in any aspect of the scope selected in this RFQ.

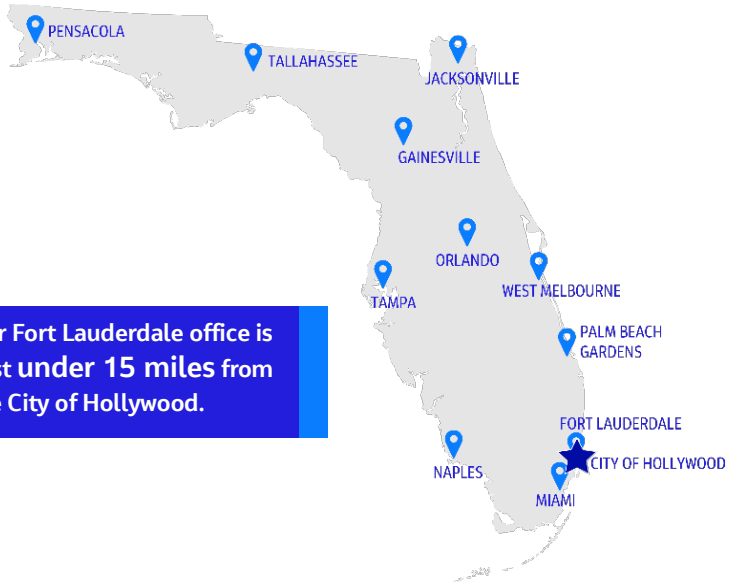
In addition to traditional engineering capabilities, we can also support your projects in more specialized disciplines by providing expertise in sustainability, resiliency, safety, cyber security, smart cities, contaminants of emerging concern, and nature-based solutions, to name few. Jacobs' globally connected organization allows access to the worlds' leading experts in virtually any aspect of scope included in your RFQ.

Local Presence

Our 60+ Fort Lauderdale-based staff are supported by nearly 4,000 professionals throughout Florida, and a talent work force exceeding 61,000 worldwide. Our key staff for this project and the office that will service this contract are located at 550 W. Cypress Creek Road in Fort Lauderdale, just under 15 miles from your Public Utilities office, water treatment plant, and wastewater treatment plant. It is just a short drive to the City offices, allowing us to successfully implement the City's projects in the most highly responsive, and cost-effective manner possible.

One of our greatest strengths is that we have engineers, scientists, project managers and other technical resources with availability to begin the City's projects immediately and to make you our top priority until successful completion. Our South Florida professionals, combined with proven processes for project delivery, allow us to deliver multiple projects for the City simultaneously and to staff them with experienced, top-tier talent bringing expertise specific to the City's needs.

Jacobs Florida Office Locations



Our Fort Lauderdale office is Just under 15 miles from the City of Hollywood.

Staffing Commitment to this Contract

We have selected our staff for their expertise in your service categories. Our team is composed of qualified project managers, local engineers, task leads, and support staff that are available and ready to work on assigned projects.

Our delivery philosophy is focused on right-sizing the teams to deliver projects, matching the City's needs while leveraging Jacobs' deep bench strength. This flexible staffing platform will apply the right resources to the right project. Workloads will be managed to provide more than adequate capacity. Our process will evaluate an individual's management and interpersonal skills and technical expertise relevant to the City's requirements to assign the right staff for each project. Our team members comprise senior and junior engineers and designers so that every project assigned by the City will be staffed with the appropriate mix of experienced personnel.

Based on an analysis of full-time versus part-time commitment, complex versus non-complex project, or expedited versus traditional schedule, we will make sure you have the staff that most efficiently and effectively meets your project needs and that they are immediately available.

We stand ready to begin work immediately and to begin a long-term partnership with City staff and contractors to leverage the strengths and efficiencies of our combined expertise.

Our project team combines strong team leadership and unparalleled technical expertise. All our professionals offer the City a solid reputation for delivering quality service and their personal commitment to being available to the City throughout this contract.

Representative Similar Experience

The table below highlights our previous design experience in your service areas (WWTP, WTP, infrastructure and value engineering/QA/QC), and other relevant experience in the State of Florida within the last 5 years. Following this table are select relevant project descriptions. **Vendor reference forms for highlighted projects can be found in Tab G | References – Vendor Reference Forms.**

Projects in Last Five Years	Service Area (per RFQ)	Capacity (MGD)	Year Completed	Asset Management, Conditions	Grant Application, Management	Studies, Bench & Pilot Testing	Supply & Inj. Wells, GW Modeling	Lime Softening	Nanofiltration, Reverse Osmosis	Activated Sludge, Clarification	Reuse Treatment	System Hydraulic Modelling	Storage, Pump Station, Pipelines	R&R Work at Existing Facilities	Permitting
General Wastewater Consultant Professional A/E and Civil Engineering Services (includes Asset Management), Fort Lauderdale, FL	1, 3, 4	12	Ongoing	✓			✓		✓	✓			✓	✓	
Melbourne Master Plan, J.A. Buckley Surface Water Treatment Plant Upgrades (RO WTP, SCADA and SWTP Improvements), City of Melbourne, FL	2, 4	25	Ongoing	✓		✓			✓				✓	✓	✓
Gainesville Regional Utilities (GRU), Continuing Engineering Services under CCNA, Gainesville, FL	1,2, 4	42	Ongoing			✓	✓	✓		✓	✓	✓	✓	✓	✓
JEA Water, Wastewater and Utilities Master Planning (includes Blacks Ford WRF Phase 4 Expansion), Jacksonville, FL	1, 2	6	2019	✓	✓					✓	✓	✓	✓	✓	✓
South District WWTP Renewal & Rehabilitation (SDWWTP), Miami, FL	1, 4	112	Ongoing	✓			✓			✓			✓	✓	✓

Projects in Last Five Years	Service Area (per RFQ)	Capacity (MGD)	Year Completed	Asset Management, Conditions	Grant Application, Management	Studies, Bench & Pilot Testing	Supply & Inj. Wells, GW Modeling	Lime Softening	Nanofiltration, Reverse Osmosis	Activated Sludge, Clarification	Reuse Treatment	System Hydraulic Modelling	Storage, Pump Station, Pipelines	R&R Work at Existing Facilities	Permitting
Continuing Contract for Architectural and Engineering Services, City of Deerfield Beach, FL	2	24	Ongoing			✓	✓	✓	✓					✓	✓
General Consulting Services Agreement, Category A – WTP and Hydrogeology, Boynton Beach, FL	2	10	Ongoing			✓	✓		✓					✓	✓
Water Utility Engineer-of-Record Services, North Springs Improvement District, Coral Springs, FL	2, 4	7.5	Ongoing			✓	✓	✓	✓				✓	✓	✓
Water/Wastewater Utility Engineer-of-Record Services (Progressive Design-Build), Deer Springs, FL	1, 2, 4	15	Ongoing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water Plant Program Management and Engineer-of-Record Services, City of Cocoa, FL	2, 3, 4	48	Ongoing	✓	✓	✓	✓	✓				✓	✓	✓	✓
General Wastewater Services, Key West, FL	2, 3, 4	10	Ongoing			✓				✓	✓		✓	✓	✓
Florida Keys Aqueduct Authority Water and Wastewater System Engineering Services, FL	1, 2, 4	6	Ongoing			✓	✓	✓	✓			✓	✓	✓	✓
Seminole Tribe of Florida Water and Wastewater Utility Program, Hollywood, FL	1, 2, 3, 4	5	Ongoing	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Water Supply System Expansion, City of Marco Island Utilities, FL	2	9.5	Ongoing			✓	✓	✓	✓			✓	✓	✓	✓
Engineering Services for WTP and WRF Infrastructure, Collier County, FL	2	16	Ongoing			✓			✓				✓	✓	
Ave Maria WTP (Ave Maria Utility Company), Collier County FL	1, 2, 4	3	Ongoing			✓	✓		✓			✓	✓		✓
Water and Wastewater Master Planning & Asset Management. Seminole County, FL	1, 2, 3	20	Ongoing	✓		✓	✓			✓	✓	✓	✓	✓	✓
Tampa Bay Water Comprehensive Asset Management Program, Tampa, FL	2, 3, 4	80	Ongoing	✓		✓					✓		✓	✓	✓
Manatee County Southwest WRF Nitrogen Removal Project, Manatee County, FL	1, 4	8	Ongoing							✓		✓			✓
Main Street WRF Capacity Renewal & Upgrade Planning Phase, Gainesville, FL	1, 4	16	Ongoing	✓						✓	✓	✓		✓	✓
City of Cocoa Beach Master Agreement for Professional Services, Cocoa Beach, FL	1	6	Ongoing	✓						✓	✓			✓	✓

Projects in Last Five Years	Service Area (per RFQ)	Capacity (MGD)	Year Completed	Asset Management, Conditions	Grant Application, Management	Studies, Bench & Pilot Testing	Supply & Inj. Wells, GW Modeling	Lime Softening	Nanofiltration, Reverse Osmosis	Activated Sludge, Clarification	Reuse Treatment	System Hydraulic Modelling	Storage, Pump Station, Pipelines	R&R Work at Existing Facilities	Permitting
Utility Department Continuing Contract Utility Engineering Services, St Johns County, FL	3, 4	-	Ongoing	✓		✓						✓	✓	✓	✓
NMB Water Program Management, Engineer-of-Record, Operation Services, North Miami Beach, FL	2, 4	32	2021	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
City of West Palm Beach Program Management and Water Master Plan, West Palm Beach, FL	2, 3	50	2019			✓		✓				✓	✓	✓	✓
Integrated Water Resources Master Plan (IWRMP) St. Petersburg, FL	1, 2, 3	60	2019		✓	✓			✓	✓	✓	✓	✓	✓	
Emergency Replacement of Force Main at Innisbrook, St Petersburg, FL	3	-	2019	✓									✓	✓	
Green Meadows WTP Expansion Pilot Study & Master Plan. Lee County, FL	2, 4	16	2018			✓	✓		✓				✓		✓
Toho Water Authority General Engineering Consulting Services for Water Facilities. Toho, FL	2	26	2018			✓	✓			✓	✓	✓	✓	✓	✓

Project Descriptions

City of Fort Lauderdale Asset Management

Fort Lauderdale, FL

Vendor Reference Form included in Tab G.

CLIENT
City of Fort Lauderdale

PROJECT DURATION
Since 1991

CONSULTANT FEE:
Varies

Completed
within budget
and on schedule

For more than 30 years, Jacobs has been working on the City of Fort Lauderdale infrastructure. The scope has included design, construction management, and asset management, beginning with our tenure as the general wastewater A/E consultant to the city and subsequently serving as the city's program manager for its water and wastewater CIP. The city re-selected Jacobs as its general wastewater A/E consultant in 2011, and that contract has been continually extended. We have also served as the city's civil engineering consultant and most recently signed an asset management consulting services agreement.

Through our hands-on experience working with the city's staff, we have a strong understanding of the city's utility infrastructure and operations. Other services have included project management; master planning; public involvement; design services (including process, conveyance, civil, geotechnical, electrical, SCADA/I&C), structural engineering; environmental/permitting; water resources; GIS; hydraulic modeling; hydrogeological; mechanical integrity investigations and other hydrogeological services; cost estimating; financial analysis and assistance; grant writing support; funding assistance; economics; cost and schedule control; inspection management; and construction management and administration.

Projects have include writing a Solids Management Action Plan for the handling of biosolids produced at the city's GTL WWTP, capacity analysis at the George T. Lohmeyer (GTL) WWTP, which increased the plant's capacity from 38-mgd to 43-mgd without a cost increase, as well as facilitating FDEP approval and the rerating application, saving the city $5M - $10M.

As part of the water and wastewater program management, we optimized water and wastewater treatment facilities and implemented the Peele Dixie membrane treatment plant to soften Biscayne Aquifer groundwater. This facility has been operating successfully since 2009. Recently, we were hired again to replace a tank and equipment at that same Peele Dixie WTP. One of these projects is the Peele Dixie WTP Sodium Hypochlorite Tanks Replacement and Degasifier Improvement project. An important aspect of the design was a construction phasing plan to replace the chemical storage tanks, while continuing operation of the WTP. Construction was successfully completed in 2022.

Since 2020, we have been supporting the City of Fort Lauderdale as the city's asset management consultant. The work involved the development of an asset registry at the GTL WWTP and conducting an asset criticality ranking, using a reliable asset prioritization process based on accepted international asset management guidelines known as the Solomon Oldach Asset Prioritization (SOAP) process. This Jacobs-developed method has been successfully implemented at several water and wastewater facilities throughout the U.S. As part of this contract, we also used a state-of-the-art mobile mapping system (Lidar) to help assess the city's streets, sidewalks, and drainage swales. The project involved the mapping of more than 700 miles of streets and alleyways using Lidar (which uses light pulses to provide precise measurement of surface characteristics) as well as high-resolution imagery to assist in identifying roadside features. This work also involved the condition assessment of the assets.

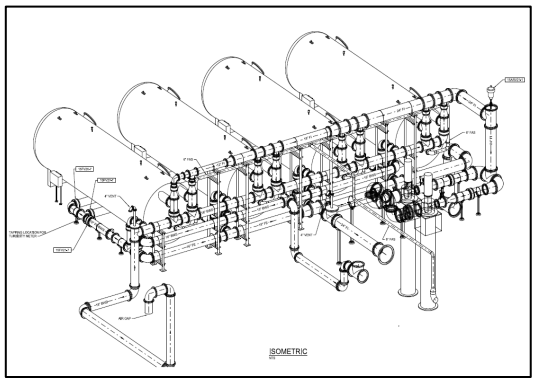
Jacobs has been providing A/E services as a known and trusted partner to the city successfully delivering projects since 1991.

J.A. Buckley Surface Water Treatment Plant Upgrades, Melbourne, FL

Vendor Reference Form included in Tab G.

The City of Melbourne faces several challenges related to its J.A. Buckley Surface WTP that treats a high organic surface water source with seasonal variable water quality, concerns about emerging contaminants including per- and polyfluoroalkyl substances (PFAS), and reliable pathogen removal, aging infrastructure and rising chemical costs. In addition, the source water lake has seen two recent (2019 and 2022) algal blooms, causing concerns for taste and odor and algae toxins in the drinking water.

In the 2000s, Jacobs conducted the pilot study, design, and engineering services during construction for upgrades to the city's aging, 20-mgd surface WTP that was not able to meet the new surface water treatment rule (SWTR). The facility improvements included the addition of the Actiflo™ high-rate clarification process to treat source water with high total organic carbon (TOC) (40+ mg/L) and color (300+ CU), ozone to eliminate taste and odor compounds, and new deep-bed dual-media (granular activated carbon [GAC]/sand) biological active filters to meet the low turbidity requirements of the SWTR and biologically stabilize the finished water. The new facilities also included a new raw water pump station, chemical storage and feed systems, recarbonation system, chlorine disinfection contact basin with provisions for future UV installation, new operations center, and provisions for future expansion to 30-mgd.



Due to aging infrastructure and increasing chemical costs, in 2018-2020, we conducted a WTP Master Plan to prepare for additional future water

CLIENT
City of Melbourne

PROJECT DURATION
Phase 1 Expansion: 2002 (Actiflo and Filters)
Phase 2 Expansion: 2007 (Ozone)
WTP Facility Evaluation and Master Plan: 2018
PLC Hardware and SCADA Improvements: 2019
Filter Drainage Improvements: 2022
Pilot Testing Phase 1: 2022

CONSTRUCTION COST
~ $70M

CONSULTANT FEE
~ $12M

Completed within budget and on schedule

demands, treatment technology changes needed to meet existing and future regulatory requirements, and to transition to more efficient and cost-effective treatment technologies. Jacobs used its one-of-a-kind Replica™, CPES™ and Preview™ tools in conjunction with our Multi-Criteria Prioritization (MCP) model to quickly evaluate alternative treatment options for surface water. We used these tools to short-list the highest benefit-cost alternatives and develop the most efficient and cost-effective option for subsequent treatability testing and design. Ultimately, the city selected the dual membrane option as the preferred alternative to treat their surface water and authorized Jacobs to conduct bench and pilot testing of the proposed dual membrane process. Phase 1 of the bench and pilot testing is completed, and Phase 2 testing is currently ongoing.

We currently provide construction support services for the media filter drainage improvement project that will allow backwashing to be performed at rates necessary for bed expansion. Work includes new backwash supply pumps and pipelines, additional backwash drainpipes and demolition and removal of structures and equipment that was decommissioned and abandoned in the past. We also provide design services for improvement and expansion projects to Actiflo™ high-rate clarification and dual media filtration systems. The proposed additional media filters will be pressurized, in horizontal vessel arrangement, with GAC over sand media. As part of the Phase 1 pilot testing, we verified multiple different GAC media types, depths, and sizes for use in the pressure vessel arrangement. The new filters will improve current process reliability and redundancy while allowing for future reuse as biological filtration pretreatment when a new dual membrane treatment process is implemented. The Actiflo improvements and filter expansion and improvements are ongoing.

As part of our general engineering services work at the SWTP, we also replaced the control system hardware and SCADA software, including improvements to the treatment system monitoring and controls. Upgrades to the treatment facility hardware and software were completed in 2019 and this type of work is continuing at the remote storage, pump, and chlorine-boost facilities for consistency purposes.

Gainesville Regional Utilities (GRU), Continuing Engineering Services under CCNA, Gainesville, FL

Vendor Reference Form included in Tab G.

CLIENT
Gainesville Regional Utilities (GRU)

PROJECT DURATION
Ongoing

CONSTRUCTION COST
Varies; projects starting at $2M

CONSULTANT FEE
Varies

Completed
within budget and on schedule

Through various contracts and engagements, the City of Gainesville/GRU and Jacobs have delivered successful projects, community support, and partnering to provide citizens and customers of Gainesville with exceptional utilities and services for more than 40 years. Over the past 10 years, we have completed more than 40 projects for GRU. This experience includes work at all three treatment plants.

We have consistently provided GRU with local knowledge, accessible professional leadership, and client service supplemented with national technical expertise to make each project successful. We provide GRU with known outcomes and instill trust that our local team will continue to lead successful projects.

Below is a sampling of our key wastewater facility experience:

Main Street Water Reclamation Facility (WRF): This involved an expansion and rehabilitation of GRU's downtown WRF. The downtown area has developed around the plant, which limits the available space to expand the facilities. This project involves expanding the capacity from 7.5-mgd to 10-mgd and rehabilitating nearly every unit process. This includes a new master lift station, new headworks (screens, grit, and odor control), conversion of three treatment trains to 5-stage conventional activated sludge, an expansion of filtration, disinfection improvements, and improvements to the operations and maintenance buildings. This project is challenged by the limited availability for new facilities and maintaining plant operations during construction with a facility that is already operating at near its peak capacity. This is a progressive design-build (PDB) project, and Jacobs is an integrated engineer and contractor for the project. This year-long planning phase will develop the roadmap for the project. Once complete, individual packages will be designed and constructed as part of the overall program.

This expedited the overall construction schedule and allowed this three-phase construction project to be substantially complete in 12 months.

Kanapaha WRF Electrical Building: We designed a new electrical building for the Kanapaha WRF, initially reviewing the existing East Electrical Building for code compliance. Given the compliance concerns, age of equipment, and future

electrical loads for the WRF, the team determined the best approach was to construct a new electrical building. The facility allows for future connection of an emergency generator and coordinates with future master planning efforts, geotechnical and survey reports, and the architectural design.

Kanapaha WRF Screen Replacement Project: This project included replacement of conventional coarse screens with fine screens as this 15-mgd average flow (peak flow of 42-mgd). The existing screens were conventional mechanical bar screens with 3/8-inch vertical openings within the existing facility. The spacing between the existing channels and the slide gates upstream and downstream left little room for the new center-flow fine screens and the sluice trough. Pre-selection and pre-purchasing the new screens allowed the shop drawing review process to coincide with the general contractor bidding process.

Quality of Work: These projects were delivered by dedicated design professionals using our standard four phase delivery and QA/QC procedures. Each project had a dedicated quality manager to lead the reviews and adjudication of all comments

Delivered Design with Minimal Revisions: The new Electrical Building at Kanapaha WRF was delivered via the construction management at-risk (CMAR) delivery model. We coordinated with the owner and CMAR during design to improve constructability, refine cost estimates and reduce construction.

JEA, Blacks Ford WRF Phase 4 Expansion
Jacksonville, FL

Vendor Reference Form included in Tab G.

CLIENT
JEA

PROJECT DURATION
2014 - 2019

PROJECT COST
$55M

Completed
within budget
and on schedule

The Blacks Ford WRF is an excellent example of the value that Jacobs brings to the City of Tampa as both a designer and contractor. Expansion of the WRF was required to address future growth and promote potable water savings using high-quality reclaimed water. Because of the completeness of our design documents, contractor bids were within 0.2% of the engineer's estimate. JEA contracted construction management services with Jacobs because of our trusted relationship and our commitment that JEA's best interests were represented during construction.

Our construction management team elevated quality, increase safety metrics, facilitated a successful commissioning process, and minimized JEA's exposure to risk from a contractor who submitted several frivolous change order and claims requests, resulting in change orders that were less than 2% of the cost of construction.

Alternatives Evaluation

We completed an alternatives evaluation prior to design of the improvements, comparing treatment alternatives and phasing approaches. Conventional activated sludge, membrane bioreactors, and oxidation ditch treatment alternatives were evaluated for liquid side treatment. Four solids treatment options were also investigated, including Class A and Class B options.

Facility Design Addressing Stakeholder Concerns

The design ultimately included two oxidation ditches in a 5-stage Bardenpho configuration for biological nitrogen and phosphorus removal to meet stringent 5/5/3/1 discharge limits for biochemical oxygen demand (BOD)/TDS/ total nitrogen (TN)/total phosphorus (TP). With the Phase 4 expansion, the facility's previous annual average daily flow (AADF) capacity of 3-mgd was increased to 6-mgd AADF, with provisions for an ultimate build-out capacity to 12-mgd AADF.

Demonstrating the quality of our design, the new 6-mgd treatment system has successfully addressed stakeholder concerns related to noise, odor, and visual impacts.

Facility Construction

Construction was sequenced to keep the SBR plant operational while the Bardenpho facilities were being constructed. With construction completed, the new $55M expansion is capable of processing wastewater to stringent AWT standards.

Permitting Services

This project was time-critical for JEA to meet customer demands in a fast-growing service area population. To meet the schedule, we provided experienced permitting assistance services for discharge to the Blacks Ford Swamp. Required permits included an FDEP Wastewater Permit; a St. Johns River Water Management District/USACE Environmental Resources Permit (ERP) for stormwater management, wetland resources, and endangered and threatened species; and an EPA National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities, including Notice of Intent and notice of Termination forms.

We also provided bid support and construction phase services, including engineering services during construction. Bid phase services included recommending contractor minimum qualifications requirements for inclusion in the bid documents. During construction, we reviewed contractor clarifications and RFIs and assisted JEA in making decisions regarding contractor claims. When construction was complete, we furnished assistance to JEA in plant startup and initial plant operation.

Navigating Through Critical Project Challenges

The contractor was claims and change order oriented, requiring many resolution meetings, which Jacobs facilitated. The end result was an overall change order of less than 2% of the contract value and claims settlement amounts of $800,000, far less than they would have been without our aggressive stance and protection of JEA's interests.

Overall change orders less than 2% of the contract value.

Notable Accomplishments

- Completeness of the Blacks Ford design documents resulted in contractor bids within 0.02% of the engineer's estimate.
- Change orders were less than 2%.
- Cost-effective design repurposed equipment (e.g., the SBR units and influent equalization tank were repurposed for use as primary and secondary aerobic digesters and reject/reclaimed water storage).

Miami Dade Ocean Outfall Legislation (OOL) Program

Miami, FL

Vendor Reference Form included in Tab G.

CLIENT
Miami-Dade Water & Sewer Department (WASD)

PROJECT DURATION
2014 – 2025 (ongoing)

PROJECT COST
$2.6B

CONSULTANT FEE
Varies

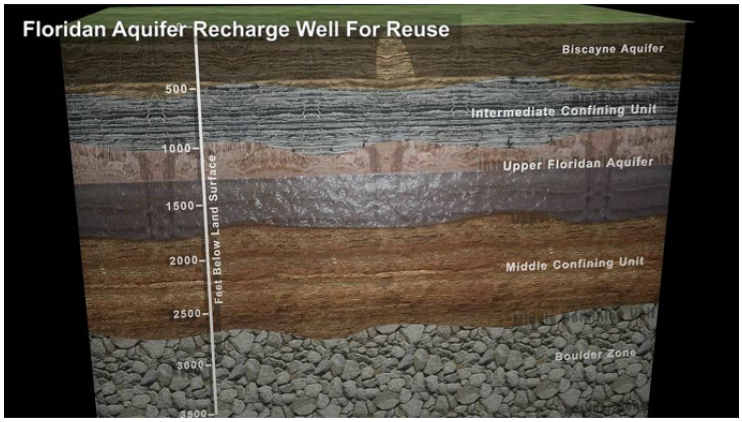
Completed
within budget and on schedule

In 2008, the State of Florida required all wastewater utilities in southeast Florida using ocean outfalls for the disposal of treated wastewater to reduce nutrient discharges or meet advanced wastewater treatment by 2018, cease using ocean outfalls for treated wastewater disposal by 2025, and reuse 60% of the flows by 2025.

As a result of this mandate, Jacobs was selected by the Miami-Dade Water and Sewer Department (WASD) to implement system-wide wastewater facility upgrades through the OOL Program. This $2.6B program involves wastewater system master planning and the design, procurement, construction, and commissioning of more than 60 major capital projects.

We are acting as owner's agent, providing professional engineering services for the following activities:

- Validating WASD's CIP for its WWTPs and wastewater collection and transmission systems
- Identifying preliminary policies, procedures, and practices that establish the means and methods to meet the requirements of the OOL
- Evaluating alternative peak flow management strategies to maximize the use of existing assets and simplify future operation
- Identifying risks that could impact implementation of the OOL CIP, including climate change impacts, such as sea level rise (SLR), storm surge, wind, and flooding
- Participating in regular meetings with regulatory agencies



Deep Injection Wells

To provide additional disposal capacity for flows nearing a billion gallons per day of treated wastewater, the deep injection well element of the program consists of drilling approximately 19 injection wells and approximately 7 Floridan aquifer dual zone monitoring wells by 2025 to augment the existing 21 injection wells. The large-diameter injection wells will have capacities of 18.65-mgd per well and will be completed with 24-inch diameter final casings to depths between 3,000 - 3,500 feet.

Our injection well team developed a unique alternative to conventional procurement to reduce cost, schedule, and technical risk. This approach includes establishing a pre-qualified pool of drilling firms and conducting negotiations following requests for quotes. To meet the OOL schedule and legislative compliance deadlines, the injection well team developed well plans with multiple drilling rigs operating at multiple WWTPs simultaneously.

In addition, we have assisted WASD with EPA Water Infrastructure Finance and Innovation Act (WIFIA) and State Revolving fund (SRF) loans for nearly the full cost of the new injection wells at the South District and Central District WWTPs.

Conveyance System Rerouting

Conveyance tasks to support the rerouting of wastewater flows include validation of the hydraulic model inputs and the pump station and force main projects. We used WASD's InfoWorks hydraulic model to plan and design the conveyance rerouting projects. First, we validated the inputs into the model, developing a template to plot the system response to multiple storms.

The result of this analysis was more confidence in the flows that used to design the projects to meet OOL goals. Our conveyance team also validated the sizing, route, configuration, and impacts to the conveyance system of the planned new West District WWTP and other OOL projects.

General Consulting Services for Water Supply, Treatment, Transmission, and Distribution System

Cocoa, FL

CLIENT
City of Cocoa

PROJECT DURATION
Surface Water Treatment Plant (12-mgd): 2000

LOX Conversion: 2006

PDR for St. Johns River / Taylor Creek Project: 2010

LOX & Ozone Generator Upgrades: 2016

Flocculation/Sedimentation Basin Improvements: 2016

Surface water Clearwell and Transfer PS: 2018

DBP Reduction Study: 2020

Chemical Conversion and Reliability Improvements (CCRIP): 2021

Corrosion Control and Nitrification Reduction Study: 2022

Completed
within budget
and on schedule

Jacobs has worked with the City of Cocoa for nearly five decades to help develop this integrated wellfield and surface water supply system to meet the growing water supply needs. Projects totaling more than $100M have included major wellfield development, surface water supply development, surface water treatment plant, construction and permitting of aquifer storage and recovery (ASR) wells, water conservation, water treatment improvements and optimization studies, transmission and distribution system improvements, and associated measures to meet increasing water demands.

In the late 1990s and early 2000s, we conducted the pilot study, design, and engineering services during construction for the new 12-mgd surface water treatment plant, to supplement the existing 48-mgd groundwater treatment plant, that had to meet the new SWTR. The facility improvements included the addition of the lamella clarification process to treat source water with high TOC (30+ mg/L) and color (200+ CU), ozone to eliminate taste and odor compounds, and new deep-bed dual-media (anthracite/sand) filters to meet the low turbidity requirements of the SWTR. The new facilities also included a new raw water pump station, a powdered activated carbon storage and feed system, chemical storage and feed systems, recarbonation system, chlorine disinfection contact basin, and provisions for future expansion to 24-mgd. The ozone generators were originally air-fed but after 5-6 of operation this was replaced with a liquid oxygen (LOX) storage and feed system.

Since 2008, we have served as the city's program manager on over 25 active projects, including the city's 5-year $100M CIP; we completed an overhaul of the city's water system SCADA, and have provided master planning and significant facility and distribution system assessment and asset management services. We provided planning services for a new St Johns River / Taylor Creek treatment system, including treatability testing and preliminary design.

Also, we designed a new clearwell and transfer pump station for the surface water treatment train. Other example projects completed and representative of Jacobs' strength in providing utility engineering services include the following:

- Construction and comprehensive field calibration of the water distribution system hydraulic and water quality models
- Water/wastewater utility GIS master planning and implementation optimization of drinking water treatment processes for disinfection by- product management, nitrification minimization, and virus inactivation
- Wewahootee pump station improvements
- Emergency structural repairs to the high service pump station
- Groundwater chemical building and elevated walkway structural improvements
- Flocculation/sedimentation basin drain valve retrofit
- Ground storage tank mixing optimization using computational fluid dynamics
- Dyal WTP surface water plant clearwell addition and reject pond rehabilitation
- Design, permitting, bidding, and SDC of the Dyal WTP groundwater treatment facility filter improvements
- SCADA design-build implementation
- Environmental resource permitting assistance
- ASR wellfield expansion and cycle testing
- Switchgear and generator closed loop transition upgrade
- Water utility-energy optimization study
- Emergency response plan assistance

As with municipalities across the U.S., the City of Cocoa is facing the need to make significant reinvestment in its aging drinking water infrastructure. While public health and safety depends upon the integrity of city's water treatment and distribution system, the cost for infrastructure renewal will be substantial. Consequently, the city's Utilities Department desired a deliberate and carefully structured approach to deliver immediate-need projects and to assess the current state of its drinking water system and develop a rigorous and reproducible method for making defensible capital and operational investment decisions. The city's CIP entails modernization and improvements to the potable water, wastewater, and reclaimed water infrastructure. Under a general services contract, the City of Cocoa contracted with Jacobs to provide a program management approach and a dedicated team to deliver the CIP. The program management processes, tools, and skills developed during execution of the program are setting the stage for the City of Cocoa to continue with implementation of additional capital improvements and preventative maintenance programs that may be needed beyond the first 3 years of the program.

General Engineering Services Contract

Key West, FL

CLIENT
City of Key West

PROJECT DURATION
1985 - Ongoing

Completed
within budget
and on schedule

Since 1985, Jacobs has been working with the City of Key West to provide a variety of planning, engineering, and construction services projects under general engineering service contract. We are currently delivering 9 task orders.

We have been the solutions provider and trusted advisor for the city since 1985 under a general services contract.

Projects have included engineering services for the design of stormwater collection catch basins and piping; installation of a new control system for effluent pump, programming of the system, associated electrical and Instrumentation; engineering services for feasibility investigations of a trenchless installation; engineering services for design, permitting and bid phase services for the rehabilitation of pump stations; design and permitting assistance for the abandonment of stormwater gravity wells in the Patricia and Ashby neighborhoods; engineering services for the design of mooring improvements for the Mallory Square cruise berth; roadway preliminary and final design, including construction management, and development of a comprehensive post-disaster recovery and reconstruction plan; guidance in support of the application of sea level rise and rainfall projections; and the development of tidal boundary conditions for use in stormwater management and other city infrastructure projects. Some of the projects are listed in more detail below:

Stormwater Master Plan - Phase I and Phase II: The purpose of this task order for the City of Key West is to update the existing Stormwater Master Plan from 2011 using current conditions and the latest modeling software and identify new projects to reduce flooding generated by rainfall.

Sea Level Rise Policy: We provided guidance in support of the application of SLR and rainfall projections and the development of tidal boundary conditions for use in stormwater management and other city infrastructure projects. Guidance for a new SLR policy will support the process by which Key West can efficiently and equitable continue to enhance its resilience to flooding.

Lift Stations Rehabilitation: We performed reconstruction of seven lift stations. Four of the stations were complete replacements of existing stations with submersible, wet well/valve vault type systems. The remaining three were rehabilitation including concrete repair and lining, new controls, and new submersible pumps. All new stations included PVC-lined wet wells, new pumps and controls, and PVC force main replacements. We also inspected all 20 wastewater lift stations and prepared a condition report to assist with the city's CIP.

Flagler Interceptor Phase 2 Rehabilitation Design, Permitting, Bid, and Award Phase Services: This project involved design of the replacement of the 14,700 linear feet of sewers, manholes, and laterals within the Flagler Interceptor. Additionally, sewer laterals were replaced for 8,100 linear feet of sewers that had new manholes and sewer mains installed on a previous project.

SDWWTP Renewal and Replacement Contract. E06-WASD-14, Miami, FDWWTP and Renewal and Replacement Contract. E15-WASD-12

Miami, FL

CLIENT
Miami-Dade Water and Sewer Department (WASD)

PROJECT DURATION
2007 – Ongoing

Completed within budget and on schedule

WASD is the largest water and sewer utility in the southeastern U.S. and serves nearly 2.3 million residents and thousands of visitors daily. Jacobs has two Master Services Agreements and has completed 29 task orders for this important client. The projects involved miscellaneous task assignments for rehabilitation and repair work for the 112-mgd South District Wastewater Treatment Plant (SDWWTP).

The following is a list of some of the projects:

- **24-inch-diameter force main improvements - basis of design report and engineering design**. Prepared bid-ready contract drawings and specifications, assisted with permitting and the contract procurement/award phase, and provided engineering support during construction.
- **SDWWTP plant stormwater Master Plan, Stormwater Pollution Prevention Plan update, and environmental resource permit modification.** ERP was successfully secured in two phases: short-term under design, and construction, planned in < 5 years.
- **54-inch force main final design and services during construction.** Developed corridor analysis, opinion of construction cost, a geotechnical data report, a geotechnical design memorandum, and 30% design drawing.
- **54-inch force main rehabilitation and 48-inch/54-inch bypass force main improvements.** Prepared a Basis of Design Report (BODR), 100% design drawings for the installation of a new force main and rehabilitation of the existing force main, and provided construction services.
- **Structural condition investigation/integrity, safety evaluation and engineering design services.** Provided design and engineering support during construction for concrete repair and replacement of the storage tank lining system.
- **Compressor buildings and cryogen plant upgrades.** Expedited delivery of engineering design documents (specifications and drawings).

We provided project management; design services, including process, planning, civil, geotechnical, electrical, HVAC, and structural engineering; regulatory/permitting; hydraulic modeling; hydrogeological; cost estimating; economics; financial analysis and assistance; and construction management and administration.

In addition to these Master Services Agreements, we are serving as the owner's representative for the OOL Program. Our team is responsible for system master planning, as well as managing the overall delivery of a comprehensive, technically sound, long-term program that encompasses the design, procurement, construction, and commissioning. This $5.7B program involves wastewater system master planning and the design, procurement, construction, and commissioning of more than 60 major capital projects.

Seminole Tribe of Florida (STOF) Water and Wastewater Utility Program

Hollywood, FL

CLIENT
Miami-Dade Water and Sewer Department (WASD)

PROJECT DURATION
2007 – Ongoing

Completed within budget and on schedule

The STOF protects the tribal community's health and safety and environmental resources by maintaining reliable, efficient, and effective water and sewer utility services to the Tribal members, residences, enterprises, and other facilities. The PWD's vision is to be recognized as "an industry leader who is distinguished for their professionalism, responsiveness, reliability, environmental stewardship, sustainable solutions, fiscal responsibility and caring attention extended to every individual they encounter." Jacobs is providing delivery resources, processes and tools, and capital planning to deliver projects with a transparent, defensible, and prioritized plan focused on accountability.

In support of that vision, PWD established the PWD Infrastructure Program. This $300M, 5-Year CIP is composed of 58 projects to update, modernize, and expand potable water, sanitary sewer, and reclaimed water infrastructure.

Jacobs is managing this program and is providing water and wastewater technology development and A/E services using a stage-gate process.

The program started with the initiation of several immediate action projects. The immediate action projects were selected to address safety issues, streamline operations, improve water quality, increase treatment capacity to support future growth, define future improvements at key facilities, and provide master planning.

Working closely with the STOF, we developed several master plans in FY 2013 for the WTPs and WWTPs, solid waste management, and SCADA controls systems. These master plans provide information and analysis necessary for the tribal community's infrastructure long-term planning using a phased approach. The CIP and master plans are updated regularly to reflect changes in service demands, infrastructure condition, emerging goals, and priorities.

Several immediate action projects were initiated as part of the infrastructure program to address high priority operational needs, conduct a wide needs assessment of plants and facilities to develop a prioritized 5-year CIP, identify the current and future funding needs to maintain the tribe's infrastructure investment, and implement a delivery platform to manage the PWD Infrastructure Program to maintain a high level of water and sewer utility service for the Seminole Tribe of Florida.

Pilot Testing and Improvements to Pre-Treatment and Nanofiltration (NF) Membrane Skids at the West WWTP

Boynton Beach, FL

CLIENT
City of Boynton Beach

PROJECT DURATION
2021 – Ongoing

Completed
within budget
and on schedule

Since the early 1990s, we have been continually providing services, including design, construction management, and inspection for the City of Boynton Beach. Under this stand-alone pilot testing and improvements to membrane skids project, we are performing a membrane pilot study to investigate size and type of particulate loading and evaluate pre-treatment alternatives to minimize particulate fouling, use alternative scale inhibitors to provide protection against scaling under reduced sulfuric acid or sulfuric acid-free feed water conditions, measure membrane performance, and verify against results of membrane projection software.

The WTP treats surficial aquifer groundwater. Pretreatment consists of sulfuric acid injection, cartridge filtration, and scale inhibitor injection. Main treatment consists of six membrane skids with two-stage NF treatment and first stage permeate throttling. Post treatment includes degasification of NF membrane permeate, sodium hydroxide for pH correction, and sodium hypochlorite for disinfection. The raw water contains elevated levels of hardness, alkalinity, organic material, and color, and modest levels of hydrogen sulfide and iron. Treatment includes a bypass blend arrangement, (currently discontinued because of increased hardness passage).

We developed the project execution plan and are providing project management, project coordination, document controls, QA/QC, health and safety plan, scheduling, and home office support. Specific services include:

- Pilot Testing: of up to three membrane element combinations as selected by each membrane element manufacturer. the anticipated NF pilot skid has a capacity of 20,000 gallons per day. Deliverables include development of pilot test protocols and results.

- Design Criteria Document: evaluating different pre-treatment solutions for particulate removal, covering sand separators, minimizing membrane scaling, changes to existing NF membrane system configuration and membrane skid size. The design criteria document will include the conceptual design, performance specifications, technical information for bid addenda, responses to technical questions, clarifications during bidding, and bid-award recommendation.
- Construction: 24-hour support; as needed observation of construction work, equipment testing, membrane element loading, membrane skid startup and performance testing; shop-drawing review; and RFI responses.

WTP Expansion and Improvements Engineering Services

Bonita Springs, FL

CLIENT
City of Fort Lauderdale, Florida

PROJECT DURATION
Lime Softening WTP Expansion (1998-2000)

RO WTP DB – New WTP (2002-2004)

RO WTP Phase 2 DB Expansion and Lime Softening WTP Improvements (2015-2018)

RO WTP Phase 2 DB Expansion and Lime Softening WTP Improvements (2019-2023)

CONSTRUCTION COST
Phase 3: $22.7M Construction

CONSULTANT FEE
Phase 3: $1.3M Design

CONSULTANT'S ESTIMATE VS. ACTUAL CONSTRUCTION COSTS
$22.7M Guaranteed max price
$21.9M Actual cost without owner-driven additions

Completed within budget and on schedule

Since the mid-1980s, Jacobs has provided a wide range of planning, engineering design, and construction services to support the needs of Bonita Springs Utilities (BSU) for the water supply system covering source water wells, both shallow and deep, water treatment, two deep injection wells, and finished water storage and pumping. Jacobs was retained by BSU to provide engineering services on numerous traditional and DB projects with total fees exceeding $100M.

Phase 1 RO WTP

In 2004, Jacobs completed construction of the $40M, 20,000-square-foot reverse osmosis (RO) WTP that boosted BSU's water production capacity to help BSU meet anticipated water demand. The new 6.0-mgd facility, which is expandable to 12-mgd, uses RO to treat brackish Floridan well water. This project also included a storage tank, wellfield, and injection well for disposal of concentrate. The new facility included four new 1.5-mgd, two stage membrane skids; new degasifier and transfer pumping facilities; new feed pump and raw water and finished water chemical feed systems; a new 2MG finished water storage tank, and high-service pumping station.

RO Energy Optimization Improvements

In 2013, Jacobs conducted a PDB project at the RO WTP to improve facility energy efficiency and operability. The project included installing new energy recovery and membrane elements to reduce annual operating cost by more than $300,000. The project included modeling of the existing RO treatment system and wellfield using Jacobs' Digital Twins Replica® dynamic process model facility controls, RO system design setpoints, and well usage to optimize operations and further reduce ongoing operating cost.

Phase 2 RO Expansion and Lime Softening Upgrades

Jacobs, serving as the DB contractor, designed and constructed upgrades to the BSU WTP to meet quickly growing demands and improve facility reliability. The Phase 2 expansion and improvements project was completed in 2018 and made maximum use of existing infrastructure to expand the RO facility by 2-mgd by retrofitting the existing RO trains with additional pressure vessels, piping and membrane elements. This cost-effective expansion increased capacity of each original 1.5-mgd train to 2-mgd while making use of excess design capacity within the feed pumps, piping headers, energy recovery devices and valves. The project also added sand strainers, a degasifier, transfer pumps and Floridan wells.

Lime improvements included replacing the existing lime silo and feed slaking equipment with a hydrated lime storage and feed system. The easier to maintain system has improved facility reliability by eliminating many common lime storage and feed issues. The lime improvements included covering the existing filters and modifying disinfection design to reliably achieve 4-log virus removal without using valuable finished water storage tank volume. The project expanded the existing lime softening process by 2-mgd to 10-mgd.

Phase 3 RO Expansion

The ongoing Phase 3 expansion includes a constructing a new building with two 2.0-mgd rated RO trains while incorporating a blend of fresh well water into both the brackish RO feed water and RO permeate to reduce facility operating cost by >$100k annually. The work also includes the conversion of the existing wet, chemical scrubber to a biological scrubber system for a cost-effective treatment of hydrogen sulfide off-gas. The expanded facility, combined with the existing lime softening WTP, will allow BSU to produce 22-mgd of potable water, enough to meet the needs of the utility's service area at build out. The facility design accommodates the low-cost future addition of NF trains within the new process building to replace the aging lime softening process. The Phase 3 expansion will be commissioned in early 2023.

City of West Palm Beach, Florida Program Management and Technical Support for Water Utility System

West Palm Beach, FL

CLIENT
City of West Palm Beach, Florida

PROJECT DURATION
2008, (2015 Constr., WTP)
Complete: 2017

Completed
within budget
and on schedule

Jacobs provided program management services during the planning, design, permitting, and construction of improvements to all aspects of the city's water supply, treatment, and distribution utility systems.

The city's capital program was driven and prioritized by Consent Order mandates and several risks identified at the city's WTP that had to be addressed while the long-term solution was being evaluated and studied by consultants. As such, the program's complexity was greatly increased due to the need to maintain a surface water supply during drought conditions, maintain full plant operations during construction, and the need to automate the 47-mgd plant without compromising any specific process.

During this multi-year contract, we provided planning and coordinating improvements to the city's water utility system, as well as overall program management of the city's consultants and contractors implementing the projects.

During the planning phase of the work, we coordinated information to/from eight consultants, six annual contractors, three regulatory agencies, four city departments, the Citizen's Water Task Force, the mayor, and the city commission. We also provided operational oversight/support of the city's water utility system throughout the planning, design, and construction of these improvements.

Our team performed a value engineering (VE) study effort, focused on reviewing the preliminary design for the city's 47-mgd conventional surface WTP and the proposed improvements. The proposed preliminary design replaced the existing treatment process and provided new facilities, including a new raw water meter, Magnetic Ion Exchange (MIEX®) contactors and building, ultrafiltration (UF) membrane filters, membrane washwater, and an administration building. We also provided oversight for the recovery system, retrofit of existing gravity filters for granular activated carbon (GAC) adsorbers, a new chlorine contracttank, and site civil, piping, electrical, and instrumentation improvements.

Force Main Condition Assessed

In addition to the water program, we evaluated force mains installed from 1974 through 1975. The city owns and operates a force main that conveys approximately 15 to 20-mgd from Lift Station #22 on 23rd Street, to the East Central Regional Water Reclamation Facility (ECRWRF). The force main evaluated is comprised of approximately 31,000 LF of 42-inch and 48-inch pre-stressed concrete cylinder pipe. The size of the force main changes from 42-inch to 48-inch just west of I-95. A recent internal inspection of the pipe revealed structural deficiencies starting at a point immediately west of I-95 and continuing to the ECRWRF— over 13,000 LF of 48-inch- diameter PCCP. We are performing design services to restore the structural integrity by internally lining it using the cured-in-place trenchless technology (CIPP) rehabilitation/renewal method.

Fort Lauderdale 2020 Bi-Annual Water and Sewer Engineer's Report
Fort Lauderdale, FL

CLIENT
City of Fort Lauderdale

PROJECT DURATION
4/10/2020 – 7/2/2020

Completed
within budget
and on schedule

Jacobs prepared a Bi-annual Water and Sewer Engineer's Report as required by the city's 2003 and 2018 bond resolutions. The bond resolutions require that the city's consulting engineer prepare and file with the city, not less than bi-annually, a report setting forth such advice and recommendations as they may deem desirable in respect to the water and sewer system. As part of the project, we reviewed with the city staff the organizational structure of the city's Public Works Department, its service contracts with nearby communities, regulatory requirements and staffing, to confirm that the institutional framework and staffing are in place to manage and plan for ongoing city operation, maintenance, and improvement of the system and to meet its regulatory requirements.

The city provided information, including the 2017 updated water and wastewater' master plan, as well as discussions with engineering and operations staff, were used to evaluate the effectiveness with which goals and objectives of the system are being met and to verify that planned facilities will accommodate projected water and wastewater demand.

We characterized the existing water and wastewater systems by evaluating the basic operating conditions, water supply, treatment, and distribution facilities, wastewater collection, treatment, and disposal facilities, and regulatory requirements. Based on available planning documents, we identified the future water and wastewater system improvements needed and evaluated the improvement schedules for their design, and construction.

We reviewed the historical operating revenues and expenses to evaluate if the revenue generating capacity of the water and wastewater systems is sufficient to meet coverage requirements as defined in bond resolutions from 2003 and 2018 in accordance with the city's outstanding debt service schedules. Operating and non-operating expense estimates were reviewed to verify that reasonable level of renewal and replacement are allowed for and to determine the efforts of the planned facilities on revenues from rates. We verified and compared current rates and charges with other nearby communities. We also developed conclusions and recommendations were developed regarding financial parameters and performance of the city's utility system.

Study findings were summarized in the Bi-annual Engineer's Report. We successfully completed the project within a very compressed schedule and under budget. Also, we successfully delivered the prior Series 2016 and 2018 Bond Feasibility Reports in 4 years and 2 years, respectively, prior to this latest update.

Resilient Rebuild – Master Planning, Coastal Resilience Planning, Platform Visualization, Tyndall AFB

Panama City Beach, FL

CLIENT
US Air Force via KBR

PROJECT DURATION
11/2018 – 8/2020

Completed
within budget
and on schedule

Jacobs provided urban planning services to the USACE for the redevelopment of the support side of Tyndall AFB in the Florida panhandle. This effort helped create a resilient, sustainable and smart installation of the future with campus-like, pedestrian- and bike-friendly environment for all base members and guests.

The project covered 30,000 acres and 129 miles of coastline. The effort required condition and vulnerability assessment, demolition and construction phasing, nature-based infrastructure design, landscape master planning, infrastructure planning and design, and coastal resilience planning. Spatial modeling included storm surge, rainfall, sea level rise, walk-time, bike-time, and drive-time analyses, parking, light-shed analysis, heat island impact, and vegetation co-benefit analyses, to name a few.

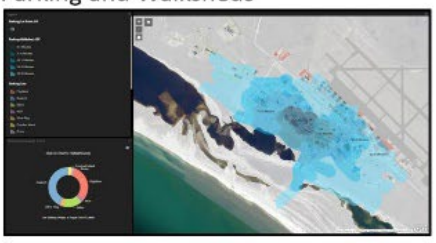
A GIS platform and several visualization techniques, from interactive maps to high-quality photorealistic visualizations, were instrumental in gaining acceptance of proposed designs.

Coastal Pilot Projects

Parking and Walksheds

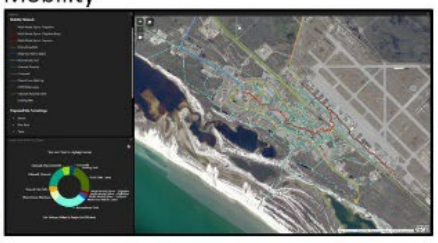
Land Management Strategy

Parking and Walksheds



Land Cover Strategy

Mobility



Water/Wastewater Utility Engineer-of-Record Services (DB)

Bonita Springs, FL

CLIENT
Bonita Springs Utilities (BSU)

PROJECT DURATION
2003 – Ongoing

Completed
within budget
and on schedule

Located in a popular resort and tourism area, the BSU service area is subject to peak seasonal loadings due to visiting tourists and part-time residents. The influx results in winter demands that are twice the typical demands for the summer months. Since 1993, Jacobs (formerly CH2M HILL) has assisted BSU with a wide range of utility planning, engineering, construction, and specialty evaluation services for its water, wastewater, and reclaimed water systems.

Services we have provided over the years include project management; design-build; master planning; design services, including process, civil, geotechnical, electrical, HVAC, SCADA/I&C, and structural engineering; architectural; health and safety; project controls; environmental/permitting; wetland hydrologic; hydraulic modeling; hydrogeological; cost estimating; financial analysis and assistance; grant writing support; economics; and construction management and administration. We have also provided O&M support services, including plant troubleshooting, process evaluation, process optimization, and bench-scale and pilot studies.

"CH2M HILL (now Jacobs) is one of the few consultants I can count on to act as an extension of my staff. When I need help and need it now, I know that CH2M HILL(now Jacobs) will deliver."

Fred Partin, Executive Director, BSU

Representative completed projects include West WRF Original, Expansion, and Upgrade (DB), East WRF (Design-Build), West WRF Screen Study, Reclaimed Water, Modeling, Permitting and Wetlands Monitoring, Windsor Ground Storage Tank and Pump Station (DB), Force Main System Master Plan, Business Continuity Plan and Disaster Recovery Plan, Water Storage Tank (DB), Potable Water ASR, WTP Capacity Evaluation, Comprehensive Water Distribution Master Plan, Water Supply Plan and Water Quality Study, Regional Irrigation Feasibility Evaluation, Water Supply Master Plan and WTP Emergency Response Plan, Kehl Canal and Windsor Ground Storage Tanks and Pump Stations, RO WTP and Expansion (DB), Lime Softening WTP Expansion and East WRF Screen Replacement (DB).

Additionally in July 2008, we began serving as the city's partner to deliver community development services.

"CH2M HILL (now Jacobs) showed engineering creativity and foresight throughout this project. The facility was designed, constructed and is operated as it was initially envisioned, without delays or interruptions during construction and startup, and within budget. It serves as a working example of current wastewater-reclamation technology and is being visited by our colleagues from across the state and nation."

Fred Partin, Executive Director, BSU Excerpt from Bonita News-Press.Com Article on East WRF on 9/11/2008

Project Highlights:

- Successfully delivered more than 100 projects— all within schedule and budget
- Over the past 17 years, have provided general water and wastewater engineering services on numerous traditional and design-build projects with total costs exceeding $110M
- East WRF was named as 2008's Florida Project of the Year by the American Society of Civil Engineers; the award honors engineering efforts in research, design, construction, or management. and exceeding the needs of the client
- Until recently, East WRF was the largest membrane bioreactor plant commissioned in the state of Florida
- Process analysis and full-scale demonstration testing was utilized at the East WRF to gain approval by FDEP to re-rate the plant, reducing the expansion and upgrade requirements and associated construction and ongoing O&M costs
- For the West WRF effluent pump station, applied the Replica™ model, a complete system dynamic model that incorporates process, hydraulics, and I&C elements, to develop and test an optimum control strategy that provided smooth and optimally efficient operations, saving time during facility startup
- Obtained $800,000 in grants through SFWMD, including alternative water supply grants
- Obtained permits through FDEP, SFWMD, and Lee County Health Department
- Managed more than 22 subconsultants to deliver the RO WTP on time and within budget
- For RO WTP, shaved 3 weeks from the original schedule and reduced construction costs by $50,000 by developing a unique installation method for the RO feed pump cans

Ave Maria Water and Wastewater Expansion Planning

Ave Maria, FL

CLIENT
Ave Maria Utility Company

PROJECT DURATION
9/2015 – 12/2015

Completed
within budget
and on schedule

The Ave Maria WTP is a 1.67-mgd membrane softening facility co-located with the 1.25-mgd activated sludge secondary treatment Ave Maria WWTP. The difference in actual water demands and delayed growth in the community have adjusted the ultimate capacity and timing of phasing. Updated Ave Maria demand projections show phased expansion of the WTP to 7.5-mgd and to 7.0-mgd for the WWTP at ultimate build-out in 2043.

Ave Maria incorporates 100% reuse of all treated wastewater, including the membrane system concentrate. Reuse storage is maintained through capacity in multiple lakes. However, the increases in wastewater production that will increase the storage requirements, along with lower cost of injection wells, may change the best disposal philosophy for the expanded Ave Maria facilities.

This project evaluated the planned phasing and expansion requirements of the WTP, WWTP, and disposal facilities. Using the updated demand projections, Jacobs reviewed the facility phasing, defined expansion requirements and made recommendations for facility expansion/upgrades based on the new build-out requirements. Jacobs also provided planning level costs for all three facilities to assist in the continued planning of the Ave Maria facilities.

42-Inch/48-Inch Force Main Condition Assessment and Rehabilitation

City of West Palm Beach, FL

CLIENT
City of West Palm Beach

PROJECT DURATION
2015 – 2018

Completed
within budget
and on schedule

Jacobs provided a wide range of engineering services for conducting a condition assessment and rehabilitating a 1970s vintage 42-inch/48-inch PCCP force main. The force main, more than 5 miles in length, carries all of the wastewater flow from the Town of Palm Beach and the City of West Palm Beach to the regional WWTP. There is no parallel or redundant pipeline to convey the flows, so the integrity and reliability of this force main is critical. Also, the force main passes through the catchment area for the city's surface water supply, meaning that a failure releasing raw wastewater into the environment would have serious public health impacts.

The force main was constructed in two segments under separate contracts, with the upstream half using pipe (mostly 42-inch diameter) manufactured by Price Brothers (now Forterra) and the downstream half (all 48-inch diameter) using pipe manufactured by Interpace. The city was aware of the historical concerns about PCCP pipes manufactured in the 1970s, so they were proactive in investigating the condition of the force main prior to a serious failure. The city contracted directly with Pure Technologies to perform internal investigations of the force main to identify locations of leaks, gas pockets, and broken prestressing wire wraps. The condition assessment concluded that the Price Brothers pipe was in good condition with no detectable leaks and a minimal number of pipe segments with broken wire wraps. However, the Interpace was found to have a large number of pipe segments with many broken wire wraps, to an extent that numerous segments were determined to be at the point of potential imminent failure.

Based on the conclusions of the condition assessment investigation, we evaluated localized repair and replacement options for individual distressed segments of Interpace pipe, as well as full replacement of the line and interior rehabilitation approaches. It was determined that installing a fiber reinforced CIPP lining system would be the most expedient, least disruptive, reliable, and cost-effective solution to restore the integrity of the 48-inch force main. Because the force main lies under a private golf and country club, parallels a drainage canal, and runs directly under a busy county highway, the CIPP solution minimized the underground trenching required to complete the rehabilitation.

We prepared drawings and specifications for the CIPP lining to be installed under two contracts, with the first contract advertised for bidding within 4 months of the completion of the condition assessment investigation to begin work as soon as possible on the most highly distressed segments of the force main. The specifications defined the performance requirements of the finished lining as well as the capacity and redundancy requirements for the bypassing system to ensure uninterrupted flow to the treatment plant during construction. The bidders were allowed to propose their preferred method of lining installation, lengths of lining "shots", and liner thickness to meet the final performance and 55-psi test pressure specifications.

We also provided construction contract administration and onsite observation services throughout construction, including coordination with permitting agencies and supporting the contractors' required community outreach activities to provide information on the impacts and timing of the work.

Over the two construction contracts, 12,100 feet of force main were lined at a total cost of $14.1M, including all costs for flow bypassing, temporary lanes, and maintenance of traffic on public roads, and installation of new isolation and air release valves in the force main.

Melbourne Master Plan, RO and SCADA Improvements

City of Melbourne, FL

Existing FRP degasifiers are short, use old technology and their condition is poor.

RO WTP Improvement Services

Jacobs developed membrane element specifications, and provided bid support and professional services during construction. The work included a pilot plant study to verify performance of different RO membrane elements, assess optimal scale inhibitor and a study to address the 4-log virus treatment requirement. The RO skids were originally built in the mid-1990s and as part of the construction project, other skid components were replaced, including RO concentrate control valves, new pressure vessel end caps, and some new pressure vessels and instruments.

We developed design modifications to the RO feed pumps, provided bid support, and are now providing professional services during construction. The required feed pressure to the RO skids dropped significantly with the new membranes and the controls was modified to include new variable speed drives. To accommodate this and take full benefit of the potential electricity savings, existing RO feed pumps will be de-staged and equipped with inverter duty, smaller TEFC motors. Construction is currently ongoing. As part of the new VFDs, the RO WTP site was also provided with a new transformer to replace the old transformer that was in poor condition.

We are also designing the replacement degasifiers and off-gas scrubbers. The technology of the existing RO permeate degasifiers is outdated, functions poorly, and its conditions is poor. Therefore, this existing equipment needs urgent replacement. The new equipment will include a 13-foot-diameter forced-air degasifier vessel, a 13-foot biological

scrubber, and associated piping and facilities. Services will also include permitting, bid support, and engineering services during construction.

SCADA Improvement Services

The RO WTP Planning, Detail Design, Programming, and Implementation Project included planning detail design improvements for seven control panels, seven programmable logic controls (PLCs), four human-machine interfaces (HMIs), and two panel-mount operator-interface terminals (OITs).

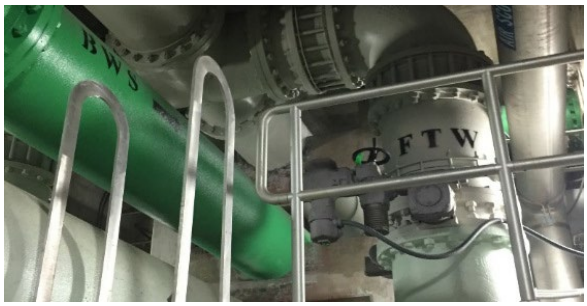
Improvements included detailed control panel design, new PLCs, surge suppression, grounding, updated communication modules, uninterruptible power supply (UPS), fiber optic convertors, and complete wiring documentation. Upgrades to the SCADA server room with two new redundant configuration servers, network rack, UPS power, fiber optic media converters, thin client architecture design, and four HMI monitors. Improvements were performed as a progressive design-build construction management at risk approach. Control upgrade was a retrofit at an active operational RO WTP facility requiring extensive sequencing and coordination. A similar project is now ongoing for the SWTP.

Master Plan Services

The City of Melbourne selected Jacobs to provide evaluation (Phase 1) and master planning (Phase 2) services for their water production facilities, which include a 20-mgd surface water WTP and a 5-mgd groundwater WTP co-located at one site. Treated water from both WTPs is blended, disinfected, and chemically post-treated prior to introduction into the water distribution system. The city system serves 180,000 customers, covers over 100 square miles, and includes several ground storage tanks, three large intercoastal crossings, one elevated storage tank, four booster pump stations, and three chlorine booster stations.

PROJECT HIGHLIGHTS:

- Treatment processes: Actiflo and filtration to treat Lake Washington source water and reverse osmosis for demineralization of Floridan Aquifer source water.
- Added VFDs to RO feed pumps and de-staged pumps to accommodate reduced RO feed pressures.
- Changed old RO membrane elements with newer generation membrane elements reducing feed pressures and immediately saving substantial electricity costs.
- Successfully completed the PLC and SCADA improvements project at both plants within schedule and budget.



Phase 1 of the Master Plan included population projections, regulatory reviews, and SCADA assessments. More importantly, this phase included a detailed condition assessment of existing assets for production facilities and remote stations, performed through visual inspections and City's personnel interviews. In some cases, additional testing and analyses were performed. The assessment covered age and condition of asset, redundancy configuration, regulatory and code compliance, health and safety aspects and environmental compliance. Also, a process assessment was performed for each treatment step covering water quality data, vulnerability, criticality and single point of failure, process configuration and capacity analysis compared to industry standards and regulatory compliance. Findings from both assessments were combined in a large matrix, and Class 5 cost estimates were developed for each deficiency. Subsequently, in a meeting with the city, the likelihood of failure and consequence of failure indices were discussed and determined that resulted in a risk rating per asset. The risk rating for each asset gave the city an indication of priority of rehabilitation and replacement (R&R) needs. The result of Phase 1 was a baseline CIP for the next 20 years covering existing assets. Photos: Actiflo sludge pumps are in poor condition and need to be replaced within the next 3 years; Filter gallery atmospheric conditions are humid and corrosive, resulting in a poor conditioning rating of filter valves, actuators, electrical panels and instruments.

Phase 2 of the Master Plan covered the 5-mgd plant expansion based on population projections, treatment technology changes based on regulatory reviews and/or process optimization suggestions by the engineer. We developed design and operational criteria, conceptual site layouts, and Class 5 cost estimates for these improvements. An outcome of this evaluation was the preference of expanding the groundwater WTP and maintaining or even downsizing the surface water WTP, due to much lower operating and whole life costs. Another outcome was the city's preference to provide a more resilient treatment system for surface water and particular the ability to treat more effectively for pathogens, PFAS,

hardness, and taste and odor compounds. During Phase 2, the baseline CIP was updated to include the future capacity needs, and regulatory and optimization requirements. The result was an integrated CIP covering R&R and expansion/regulatory needs. This integration avoided the risk of investing capital in old assets and/or technology that may be replaced or abandoned in a 5-20 years timeframe.

General Consultant Professional and Civil Engineering Services for the City of Fort Lauderdale (multiple contracts)

Fort Lauderdale, FL

CLIENT
City of Fort Lauderdale, Florida

PROJECT DURATION
1991 - Ongoing

Completed
within budget and on schedule

Jacobs' understanding of the city's infrastructure spans over 30 years, when we began our tenure as the general wastewater A/E consultant to the city of Fort Lauderdale public services department in 1991 and subsequently served as the city's program manager for its water and wastewater CIP for 10 years. The city re-selected Jacobs as its general wastewater A/E consultant in 2011, and that contract has been extended. Most recently, since 2017, we have also served as the city's civil engineering consultant and just recently in 2020, we signed a contract with the city for asset management consulting services. During all this time, we've had hands-on experience in working with the city's staff and have a strong understanding of the city's utility infrastructure and operations.

Jacobs has been providing A/E services to the City of Fort Lauderdale Public Services Department since 1991, serving as a known and trusted partner to successfully deliver projects.

Services provided over the years include project management; master planning; public involvement; design services, including process, conveyance, civil, geotechnical, electrical, SCADA/I&C, and structural engineering; environmental/permitting; water resources; GIS; hydraulic modeling; hydrogeological; DIW mechanical integrity investigations and other hydrogeological services; cost estimating; financial analysis and assistance; grant writing support; funding assistance; economics; cost and schedule control; inspection management; and construction management and administration.

One of our first tasks was preparing a solids management action plan for the handling of biosolids produced at the city's GTL WWTP. We also performed a capacity analysis at the GTL WWTP, which found that the plant could treat an additional 5-mgd. This increased the plant's capacity from 3-mgd to 43-mgd without the city having to invest any money or time into the process beyond that necessary for the evaluation and permitting. FDEP approved the rerating application, which saved the city $5M to $10M.

A more recent project includes drafting a design criteria package for the design, permitting, construction startup, and testing of a new 40 tons/day oxygen production process to replace the existing cryogenic oxygen production process.

In partnership with Hillers Electric, Inc., we also completed the design of the replacement of various MCCs at the GTL WWTP. The project consists of the replacement of MCCs 3, 4, 4A, 5 and 6; replacement of existing utilized substations 3, 4, 5, and 6; replacement of all associated power, signal and control wiring and raceway to/from external device/connection and to the associated process controller, and an updated power system study incorporating all switchgear, unitized substations, switchboards, MCCs and panelboards installed, modified or repowered.

We also completed the Peele-Dixie WTP sodium hypochlorite tanks replacement and degasifier improvement project. An important aspect of the design was a construction phasing plan to replace the chemical storage tanks, while continuing operation of the WTP.

Additionally, we prepared the AWIA PWD Risk and Resiliency Assessment and Emergency Response Plan as well as the Bi-Annual Water and Sewer Engineer's Report and Bond Feasibility Reports for the city as required every 2 years.

PROJECT HIGHLIGHTS:

- Provided planning, engineering, and construction services to the city for 30+ years
- Obtained permits from FDEP, FDOT, SFMWD, and multiple Broward County agencies
- Provided utility evaluations for proposed major development projects
- Completed multiple projects at the GTL WWTP, including the first re-rating from 38 to 43-mgd, and Peele Dixie WTP
- Provided bond feasibility reports to the full satisfaction of bond underwriters

Florida Department of State Registration

State of Florida
Department of State

I certify from the records of this office that JACOBS ENGINEERING GROUP INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on February 12, 1987.

The document number of this corporation is P13217.

I further certify that said corporation has paid all fees due this office through December 31, 2023, that its most recent annual report/uniform business report was filed on February 15, 2023, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Sixteenth day of February, 2023

Secretary of State

Tracking Number: 3641026832CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

The State of Florida no longer issues licenses/Certificates of Authorization to businesses, only individuals. Jacobs is authorized to and offers its engineering services by and under the supervision of its Florida licensed engineers. Additional engineering licenses can be provided at a later date, upon request.

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

FBPE

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

ALFARO, RAUL

855 NE 127TH ST
MIAMI FL 33161

LICENSE NUMBER: PE92557

EXPIRATION DATE: FEBRUARY 28, 2025

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Information for Representative Service Areas

Applying innovative, creative, and value-based approaches is integral to every project we work on. With nearly 100 water and wastewater engineers in Florida, our Florida-based team members have a successful track record assisting Florida clients with developing solutions to manage their water systems, networks and facilities. We have the expertise, experience, availability, and commitment to serve the City.

Service Area 1 – Wastewater Treatment Plant Projects

Our involvement in innovative wastewater treatment technology began in the 1960s with the development of the first advanced wastewater treatment facility in North America. Subsequent pioneering work in biological, physical, and chemical treatment processes has resulted in many improved process options, as has our research in combined trickling filter and activated solids processes, the bio-selector process, and the membrane bioreactor process. We use computer modeling, such as our proprietary Pro2D2, to replicate wastewater treatment processes. As industry recognized leaders in wastewater treatment, and we have delivered benchmark wastewater facilities across South Florida the U.S.—ranging from small 1 million gallon per day (mgd) plants to 100-mgd or greater wastewater treatment plants. Our technologists have expertise in every technical area: conveyance, processing, stabilization, resource recovery and beneficial reuse, odor control and air quality, and developing master and facilities plans.

As *ENR*'s No. 1 ranked engineering firm for wastewater treatment plants, Jacobs has been responsible for a broad range of wastewater facility expansions and upgrades, as well as new treatment plants. We have experts with specific expertise in every technical area associated with wastewater: processing, stabilization, resource recovery and beneficial reuse, odor control and air quality, and developing master and facilities plans. As a unique industry differentiator, we also operate many wastewater treatment facilities across the state and across the country allowing us to offer practical advice for project implementation and to solve real-world operating challenges, in addition to providing specific operability reviews to every wastewater design so that the improvements implemented are easy to operate and simple to maintain. With the emphasis in Florida on nutrient removal and elimination of surface water discharges, we have assisted many clients with feasibility studies and alternatives evaluations to attain advanced wastewater treatment (AWT) levels of effluent quality and solutions to eliminate surface water discharges.

Water reclamation for irrigation, water supply augmentation, and sustainable water management has been an area of expertise for many years, for which we have been recognized with various industry award such as the prestigious Stockholm Industry Water Award.

Gainesville Regional Utilities (GRU), Main Street Wastewater Treatment Plant

Jacobs has extensive experience rehabilitating or replacing headworks, oxygenation trains, and primary/secondary clarifiers at WWTPs. Projects include:

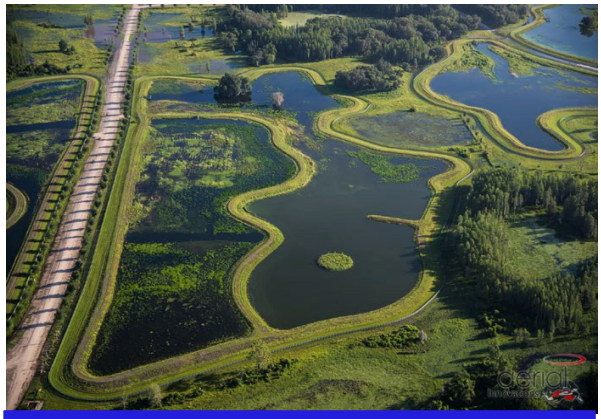
- Miami Dade County (North, Central, and South District Plants)
- Fort Lauderdale (GT Lohmeyer)
- Gainesville (Main Street)
- Manatee County (Southwest)
- Bonita Springs Utility (East)
- Jacksonville (Buckman, Blacks and Greenland)

Biosolids and Natural Treatment Systems

Biosolids treatment and disposal is an area of concern for many utilities in Florida, including emerging concerns such as PFAS and its impact on the environment. We have a deep bench of experts in this core technology to provide clients with expert advice when evaluating alternative approaches to biosolids management challenges and have supported utilities such as Gainesville Regional, Collier County, JEA, and Key West.

The GT Lohmeyer and South District WWTPs have pure oxygen systems, similar to Hollywood. We have local experience with both cryogenic and pressure swing adsorption oxygen generation systems.

Natural treatment systems are another core technology for which we have demonstrated 35 years of award-winning innovation including treatment wetlands. We have assisted numerous Florida clients with these low energy, and low O&M projects that provide multi-faceted benefits such as treatment, groundwater recharge, ecological enhancement while creating popular community amenities.



The **4G Ranch Wetlands**, (pictured above) is the world's largest groundwater recharge wetland, receiving 5-mgd of wastewater effluent for treatment, aquifer recharge, ecosystem restoration, and habitat.

Jacobs' multiple award winning 4G Ranch Wetlands project in Pasco County is an example of such a project for which we provided a feasibility study, concept development, groundwater modeling, permitting, design, services during construction, and operation optimization assistance. The project received the Florida Water Environment Association (FWEA) David W. York Water Reuse Award in 2017 and the Water Environment Federation (WEF) Project Excellence Award in 2018, among many others. We provided services associated with existing wetland retrofit and upgrade, process optimization, and habitat improvements.

Wastewater Collection System

Jacobs applies modeling principles and tools developed from more than 30 years of supporting and evolving collection system planning models, including InfoWorks® CS, InfoSewer®, and InfoWater®. Our conveyance practice maintains several network licenses for this software, and our team members have extensive experience in applying the Innovyze® suite of tools for master planning purposes.

Our hydraulic modeling team follows industry recognized model development protocols to maintain consistency with previous modeling efforts. If our modelers identify the opportunity for substantial improvement in modeling protocols or their documentation, we will develop a strategy for its integration into the system-wide hydraulic model.

We will use techniques honed through our experience developing and merging piecemeal models from multiple consultants to define interface points and assumptions that are sufficiently robust so that basin models developed independently will merge efficiently without jeopardizing the initial calibration.

Service Area 2 – Water Supply and Treatment Projects

Jacobs is a leader in water treatment technology. We have a long history of helping municipalities across Florida in providing safe, reliable, and potable water supplies regardless of technical, regulatory, or economic challenges. In addition, we assume responsibility for investment in research and innovation to continuously expand knowledge in treatment technology. The advanced technologies that we bring into full-scale application have demonstrated proven performance through extensive research, pilot, and demonstration projects.

Our proposed team has recently worked together on several RO/NF facility designs to reduce energy consumption and optimize water quality, while maintaining high reliability and operability.

Our ability to provide innovations is grounded in lessons learned from decades of experience designing, building, and operating water treatment facilities. Each project we take on incorporates the efficiency and improvements gained from previous experience.

To meet the City's continuous drive for improvement and growth, we will address all project requirements efficiently, effectively, and creatively. Our successful application of technologies is recognized by colleagues who have bestowed numerous honors through the Engineering Excellence Awards Program of the American Consulting Engineers Council.

In 2015, the Stockholm International Water Institute (SIWI) awarded CH2M (now Jacobs) the 2015 Stockholm Industry Water Award (SIWA)—an extremely prestigious award that honors outstanding and transformative water achievements by companies who contribute to sustainable water management.

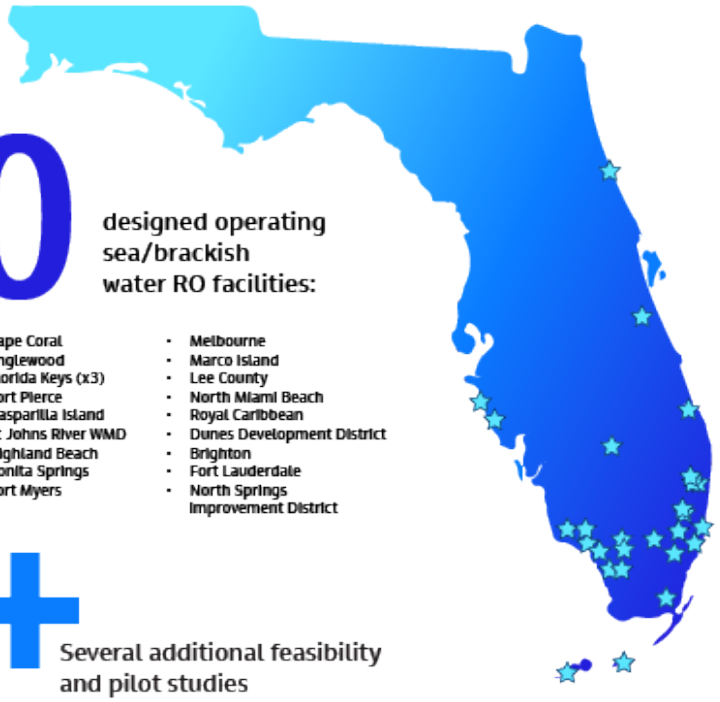
SIWI STOCKHOLM INDUSTRY WATER AWARD

Membrane Softening and Membrane Brackish Groundwater Treatment

We are familiar with the City of Hollywood's existing water treatment plant – and brings unmatched membrane experience which can be leveraged to support the City's important projects within the water treatment plan.

In Florida, we were the design engineer of one of the first nanofiltration water treatment plants in the United States and since then we have designed the original or expansion of more than 20 operating reverse osmosis/nan-filtration (RO/NF) facilities in the state of Florida and dozens more globally.

Jacobs has pioneered and is a market leader in membrane technology in Florida



8 designed operating NF hardness/color removal facilities:

- Cooper City
- Boca Raton,
- Boynton Beach
- Ave Maria
- Coral Springs Improvement District
- North Springs Improvement District
- Collier County
- North Miami Beach

20 designed operating sea/brackish water RO facilities:

- Cape Coral
- Englewood
- Florida Keys (x3)
- Fort Pierce
- Gasparilla Island
- St Johns River WMD
- Highland Beach
- Bonita Springs
- Fort Myers
- Melbourne
- Marco Island
- Lee County
- North Miami Beach
- Royal Caribbean
- Dunes Development District
- Brighton
- Fort Lauderdale
- North Springs Improvement District

27 designed original, upgrades and expansion projects

\+ Several additional feasibility and pilot studies

Wellfield and Aquifer Hydraulic Studies

We have developed and implemented hundreds of production well performance testing plans and aquifer hydraulic studies throughout South Florida, and have provided engineering services for design, permitting, and construction; we also developed rehabilitation plans for hundreds of upper and lower Floridan aquifer supply wells in Florida with clients like North Springs Improvement District, Bonita Springs Utility, City of Ocala (Wetland Groundwater Recharge Park Project), GRU (Murphree Wellfield), SJCUD (Northwest Wellfield and Tillman Ridge Wellfield), and JEA (over 20 different wellfields). Well performance testing services generally include specifying and identifying pump systems and rates, developing monitoring plans and testing durations, and identifying appropriate discharge strategies as well as necessary permitting.

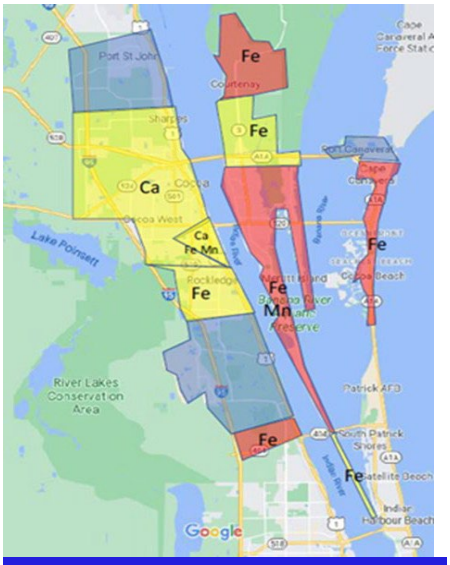
Water Transmission and Distribution

Jacobs has extensive experience in designing water distribution and raw water collection and transmission facilities, ranging from simple to the most complex transmission systems throughout Florida and the US. Our analyses and designs have accommodated operating pressures ranging from 50 to 250 pounds per square inch, pipelines ranging from 6 to more than 100 inches in diameter, and a variety of pipe materials. We have expertise with numerous hydraulic modeling software packages.

Regulatory Changes Effecting City – Revisions to Lead and Copper Rule

We have helped utilities prepare for and comply with existing water transmission and distribution regulations, including the Revised Total Coliform Rule (RTCR), Disinfection Byproduct (DBP) rules, and Lead and Copper Rule (LCR). We are particularly proud with our involvement in developing the current Revised Lead and Copper Rule (LCRR). We are working with several clients in Florida and nationwide on this new legislation. Some of the key components of the LCRR are the requirement to provide an inventory of all service lines in the next 1.5 years, conduct lead and copper sampling through the new tier structure, the revised sampling method, and develop plans to replace the remaining full/partial lead lines.

We also have a long history of helping municipalities resolve the unique set of water chemistry and simultaneous compliance issues necessary to develop and optimize corrosion control treatment (CCT), a history dating back before the original 1991 LCR. We have been instrumental in helping many large and medium sized cities in the U.S. and Canada compare and select CCT, conduct demonstration testing, develop LCR monitoring strategies, and implement their strategy via new and improved chemical treatment while maintaining simultaneous compliance with RTCR and DBP rules while minimizing nitrification in transmission and distribution systems. Our proposed team for this RFQ has been engaged in CCT studies across Florida and have just recently completed studies for the City of Cocoa, City of North Miami Beach, City of Pembroke Pines, and The Villages.



Example of distribution assessment results for City of Cocoa ('20/'21), showing predominant pipe-scales in potable water system. This baseline is important when assessing impacts if and when finished water chemistry changes are implemented.

Service Area 3 – Infrastructure Projects

Jacobs brings extensive infrastructure experience, in-depth local and regional knowledge, sensitivity to environmental and community issues, credibility with regulatory agencies, and state-of-the-art expertise in the planning, design, construction, and operational aspects of infrastructure projects to provide the City a single point of responsibility for all aspects of this work. For Jacobs, these are core competencies, and we have assisted hundreds of government agencies in developing, managing, and implementing small and large infrastructure projects around the world. Our experience includes infrastructure and general engineering services contracts with Seminole County, St. Johns County Utility Department (SJCUD), Gainesville Regional Utilities, JEA, Palm Coast, City of Cocoa, City of Winter Park, Orlando Utilities Commission, Orange County, Toho Water Authority, City of Rockledge, City of Melbourne, Bonita Springs Utility, North Springs Improvement District, Deerfield Beach, Boynton Beach and West Palm Beach, to name a few.

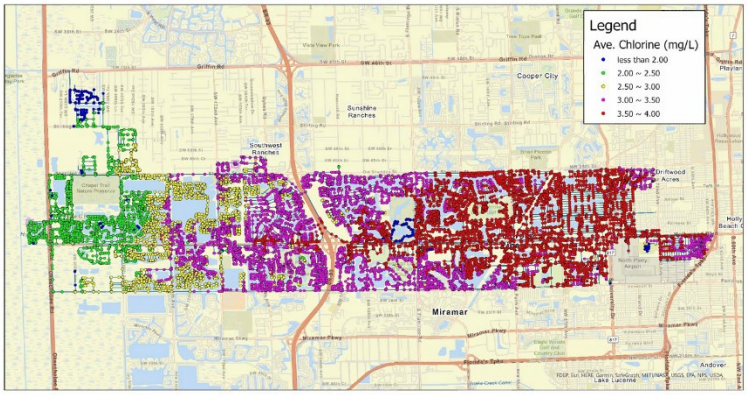
Resiliency

Resilience is the ability to recover, adapt, and thrive from both chronic stresses and acute shocks. Jacobs delivers comprehensive infrastructure, technology, and intelligence solutions to help our public and private sector clients survive, recover, adapt, and thrive regardless of the chronic stresses and acute shocks they experience. We're delivering resiliency analysis/design on more than 1,000 global projects, focused on anticipating the impact of natural hazards and extreme weather events to develop and implement resilient infrastructure—from coastal and inland river systems to water and wastewater treatment, as well as digital, supply, and transportation networks.

Across natural and built infrastructure, our resiliency experts engage with clients and stakeholders across the project life cycle, assisting in early hazard definition, evaluation, strategy development, design of solutions and full implementation, including operations and maintenance of organizational utility and infrastructure systems.

Jacobs developed a comprehensive Resilience Plan to position JEA for long-term reliability and resilience for its more than 1,400 water systems through identification of flood risk, development and prioritization of mitigation strategies, and the development of updated design standards to account for climate change for future capital projects.

We also bring expertise in efficiently planning and designing for improvements that minimize the impacts of extreme weather events on your ability to serve your customers, addressing your aging infrastructure, and maintaining the security of your systems, allowing you to respond to increasingly stringent regulations.



Jacobs has developed the hydraulic model for the City of Pembroke Pines' distribution system, to optimize hydraulic efficiency, minimize water age in the system, and improve water quality. The proposed PM, GJ Schers PMP, serves as the project manager for this project.

Modeling and Advanced Tools

We have expertise with numerous hydraulic modeling software packages, including Innovyze InfoWater, H2OMAP, AFT Fathom, EXTEND, EPANET, WaterCAD, and KYPIPE. We have also developed specialized propriety modeling tools, such as Voyage™, Replica™, and Kanew to conduct sophisticated dynamic modeling and optimization analyses to evaluate the most cost-effective solution. We have prepared wastewater models for more than 45 clients, valued at more than $22.5M. We have developed models using the major software packages, including Innovyze and Bentley. For water system modeling, we have extensive experience, especially in the Southeast, preparing, updating, and analyzing potable and reclaimed water system models.

Voyage—A decision support tool to simulate the dynamic behavior of multicomponent systems integrating water supply, treatment, storage and distribution pumping, to support high-level decision making of complex systems. It improves operations, saves capital and operating costs, and provides understanding of a complex system across a wide range of varying operational and infrastructure scenarios and conditions.

Replica—A suite of models and object libraries for dynamic simulation and optimization of water and wastewater treatment plants, conveyance and water distribution systems, and complete water supply systems. It integrates hydraulics, process treatment, instrumentation and controls. It provides an understanding of design choices on capital, and operating cost and can simulate treatment processes for optimization of energy, chemical use and water quality. Recently, this tool was successfully applied for Bonita Springs Utility, Pembroke Pines, and Fort Lauderdale.

Kanew—Uses surrogate information in addition to detailed condition assessment data for pressure pipes in drinking water, wastewater and stormwater, such as age, material, year of installation, to predict pipe renewal investment rates by year. This tool was developed with funding from Water Research Foundation, Quantifying Future Rehabilitation, and Replacement Needs for Water Mains (1998). Recently, this tool was successfully applied for Fort Lauderdale, Fort Gordon Water Authority, Georgia, and DC Water.

Permitting/Regulatory Compliance

One of the most important benefits offered by a local team is their familiarity and experience with the regulatory agencies that will govern permitting activities. We understand that establishing good working relationships with the local, state, and federal regulatory agencies is essential for expediting facility planning, permitting, design, and construction. We maintain excellent relationships with permitting agencies and have significant experience working with local, state, and federal regulatory agencies. We have a well-established, positive working relationships with regulators at local, state, and national levels, including all applicable departments of Broward County, South Florida Water Management District (SFWMD), Florida Department of Environmental Protection (FDEP), Florida Department of Health, Florida Department of Transportation (FDOT), the U.S. Army Corps of Engineers (USACE), and the U.S. EPA. Engaging permitting agencies early during a project's planning and design process, establishing a respected relationship with regulatory staff, and understanding what regulatory reviewers need to see in formal submitted applications can be key in quickly gaining permits.

Jacobs has an established working relationships with **Broward County, SFWMD, FDEP, FDOT,**

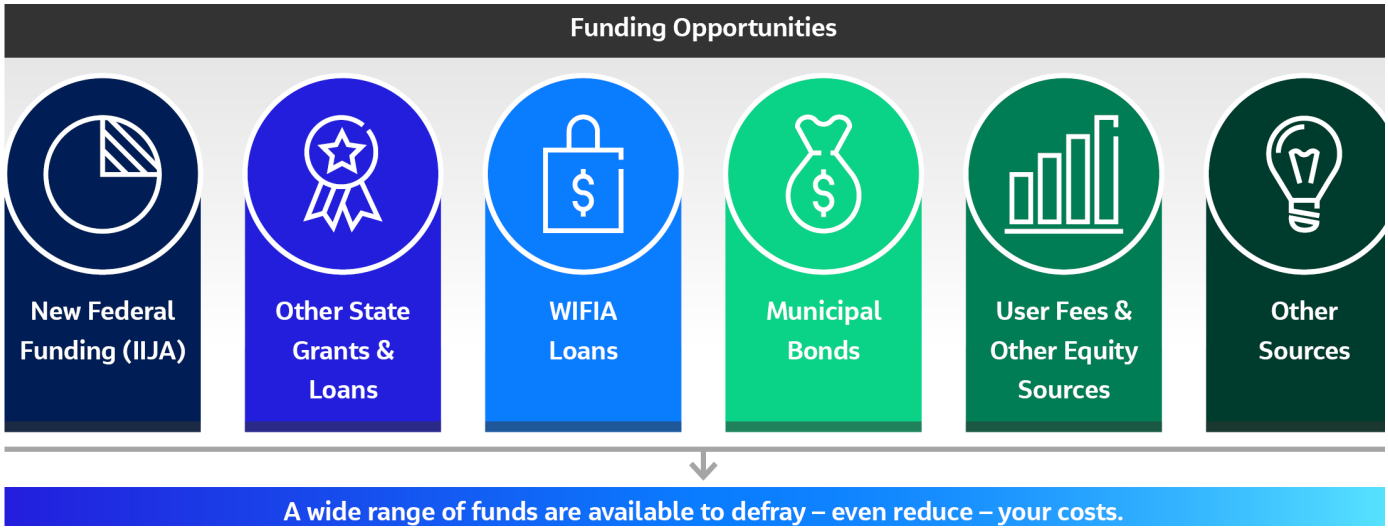
Geographic Information Systems (GIS)

Jacobs offers comprehensive mapping/GIS services as a specialized part of our engineering, architecture, planning, and environmental services, and as a stand-alone service. Based on our domain expertise within these disciplines, we create, edit, manage, and serve GIS data via the web to meet the needs of our clients and their projects. By correlating statistical data with multi-layered mapping, we help clients build accurate and easily manipulated databases for a variety of uses. From asset management to project collaboration, a working GIS brings value through increased knowledge and awareness of infrastructure, increased planning capabilities, streamlining of record keeping, and compliance with regulatory agencies.

Grants

We have the expertise to help acquire grants and capital improvement program funding for project implementation to the City. We are familiar with the options for local, state, and federal grant and loan opportunities for utility, transportation, sustainability/ resilience, and congestion management projects. We have successfully obtained water infrastructure-related loans for the cities of Fort Lauderdale, Cocoa, North Miami Beach, Daytona Beach, and North Springs Improvement District. We successfully led both the Lee County Complete Streets and Immokalee Complete Streets TIGER Grant(s) for the Lee County MPO and Collier MPO, respectively. We successfully write and receive local, state and federal grants for funding projects, including a 100% success rate applying for Water Infrastructure Finance and Information Act (WIFIA) loans. We have also successfully assisted our clients with many grant applications. Our WIFIA know-how has helped our clients obtain $2B in funding – the City of Hollywood will benefit from lessons learned.

We have helped our clients obtain **$2B** **in WIFIA funding.**



Service Area 4 – Quality Assurance, Quality Control and Value Engineering Services.

Our methodology for providing continuing engineering consulting services to the City involves applying proven communication, collaboration, project delivery, and quality control techniques we have used successfully on numerous continuing general engineering services contracts for Florida clients. We will establish and maintain a close working relationship with the City, serving as an extension of your staff and complementing your in-house capabilities, while also providing you with a single point of accountability. We develop a strong, effective partnerships with our clients, and we will bring this same collaborative spirit to your projects. Please refer to Tab E | Approach to Scope of Work for our project management and project delivery approach. In the section below, we will highlight aspects of our specific approach to quality assurance and quality control and value engineering.

Quality Assurance and Quality Control (QA/QC)

We designed our QA/QC program so that project activities comply with the contract, design, and workmanship requirements. We will implement an effective QA/QC program for design and construction projects, not only through documentation and inspection of all design and construction activities, but also through proactive planning of each activity and procurement, inspection, and documentation of design and construction activities, project startup, and operations. A key component to our QA/QC program is the early project involvement of our subject matter experts and experienced discipline engineers in design projects. As a result, best practices are implemented from the beginning.

Quality is viewed as a complete process, not just the result of reviews, tests, and inspections. It means verifying that all materials and workmanship meet or exceed expected levels. We will manage City projects so that project standards are met the first time, because we are aware that repetitive attempts and rework adversely affect project cost, schedule, and team morale.

We like to walk the project site to verify a survey. **In the past, we have identified features that were not picked up on the survey, which could have been detrimental to the construction and schedule** of the project if they had not been found in the design phase.

Our approach to QA/QC has the following goals:

- Consistently meet or exceed the City's requirements for quality, including technical excellence and innovation, by providing a design that is user friendly and that meets your requirements.
- Identify and resolve project issues before they impact budget and schedule.
- Propagate the application of lessons learned to attain quality excellence and involve subject matter experts and experienced discipline engineers early.
- Facilitate a structured project review process for the development of highly-quality deliverables.

With customer satisfaction and quality delivery at the heart of our services, clearly defined processes serve as the primary means of applying this focus:

- Charter the project team to achieve a common understanding of project goals and responsibilities.
- Develop a clear, focused project plan, including processes for delivering quality.
- Obtain full endorsement of the project plan by our team and the City's team.
- Establish a robust communication plan and meet regularly to discuss project status.
- Proactively manage any change that occurs during project execution.
- Perform independent quality reviews, including engagement of senior technical experts.
- Achieve effective closure of tasks and the project.

Value Engineering (VE)

Our VE studies have saved clients millions of dollars in costs and provided improved benefits without compromising quality or schedule.

VE encourages the development of innovative solutions that fulfill a project's objective at minimum cost. In the best interest of our clients, we have expanded the goal of VE to reduce life-cycle costs and achieve a more rapid completion schedule. We have helped save an average of $50 for every dollar our clients invest in VE, and our VE studies have saved clients millions of dollars in costs and provided improved benefits without compromising quality or schedule. We have found that our clients obtain the greatest benefit by conducting a VE workshop early in the project development when strategies and alternatives are being examined.

In addition to managing budget through VEs, we implement various techniques that will assist the City in continuous attention to cost-saving opportunities and practicing cost control. Below are examples of services we provide during planning, design, and construction to implement cost saving measures and to keep project costs under control.

- **Planning, Design, and Interdisciplinary Coordination:** Whether a project involves research, planning study, asset management evaluation, technical design, analyses, or contract documents for construction, the topics being addressed always transcend different technologies and disciplines. Life-cycle cost considerations are employed early in the effort (e.g., full exploration of alternatives), and again at major project milestones to check and re-check that cost efficiency is being employed while maintaining goals for a quality end product.
- **Constructability and Biddability Review:** One valuable service we can provide is a constructability and biddability review of plans and specifications. These services will be provided through our construction group to make sure the project meets the required criteria and objectives, can be constructed per design, and that bid documents don't present any future conflicts. This successful methodology results in minimizing change orders to cure defects in plans and specifications during the construction phase, by determining and resolving any unidentified issues with the plans and requirements for additional special provisions or specifications. Constructability and biddability reviews often provide significant cost savings for projects.
- **Change Management and Dispute Resolution During Construction:** We will review and evaluate the contractor's requests for changes. As a team, we negotiate with the contractor and submit recommendations to the City that are supported by field data related to any additional work for approval. If change orders are accepted by the City, we prepare these change orders for signature and authorization. We monitor and enforce construction requirements, as outlined in the contract and plans. We provide recommendations for disputes/claims by analyzing the work performed and determining whether any changes, extra work, and/or delays were the result of differing site conditions, suspension of work, significant changes in the character of work, plan errors, and/or requests of the City. We assess the liability to determine responsibility for the additional costs alleged by the contractor, and we evaluate the extent of the City's liability for any delays and/or changes which might have occurred. We recommend an appropriate course of action to the City for this liability, and we prepare both an oral recommendation and a written report of findings and recommendations for the City.

TAB D

Organizational Profile and Project Team Qualifications

Tab D | Organizational Profile and Project Team Qualifications

Our team is structured to meet any project need, anywhere within the City's service area. We selected our staff for their expertise in your categories and sub-categories, knowledge of the City's funding and delivery requirements, systemwide understanding of your utility and capital improvement needs and objectives, and strength in delivering work locally with an emphasis on executing contracts featuring multiple projects at one time.

Organizational Chart

Our team members have been purposefully selected for their experience working on similar scopes of services for other local clients. Most team members have also worked together on previous continuing engineering services contracts, including Miami Dade County, Cities of Boynton Beach, Deerfield Beach, West Palm Beach, North Miami Beach, Fort Lauderdale, and Melbourne.

We are ready and qualified to work for the City. We bring strong adaptable services and right sizing to match the City's needs while leveraging our deep bench strength. This flexible staffing platform will apply the right resources to the right project and workloads will be managed to bring more than adequate capacity. Our process will evaluate an individual's ability to perform the work based on her/his technical expertise, management experience and interpersonal skills relevant to the City's requirements. We will assign the right staff to each project.

In the RFQ, the City asked for the team members' percentage of time to be assigned to the project. We have included these percentages based on a general mix of projects, but these numbers depend upon the number and type of projects that will be assigned to Jacobs. The important point here is that the project manager, assistant project manager and the service area task leads are available for at least 40% of their time.

The organization chart, on the next page, lists the project managers, service area task leads, subject matter experts, discipline engineers, and support staff. Detailed resumes of our key staff and resume summaries of additional staff are included on the following pages.

Team Leadership

Our local team leaders are all based on Southeast Florida and have been selected for their experience working on similar scopes of services for other local clients, their reputation for providing top-quality service, and their ability to be committed to this assignment. Highlights of these leaders are below.

Project Manager

GJ Schers, PMP

- Locally-based, globally recognized technology subject matter expert (SME)
- Extensive membrane experience including RO & NF Florida expertise
- Established relationships with federal, state, and local regulators

Deputy and Water Project Manager

Raul Alfaro, PE, ENV SP

- Extensive WTP/WWTP experience including membrane treatment
- Ability to deliver complex projects to successful completion
- Trusted utility partner with experience coordinating operations and emergency response during high profile events

Principal-in-Charge

Ellen Paterson

- Vice President & Operations Manager for Florida & Puerto Rico
- Local delivery expertise
- 30+ years project & client management in South Florida

Wastewater Project Manager

Juan Aceituno, PE

- Extensive experience successfully implementing wastewater projects
- Familiarity with similar projects to the City CIP through his work with WASD
- Very active in local FWEA chapters and Engineers without Borders

Infrastructure Project Manager

Rudy Fernandez, PE

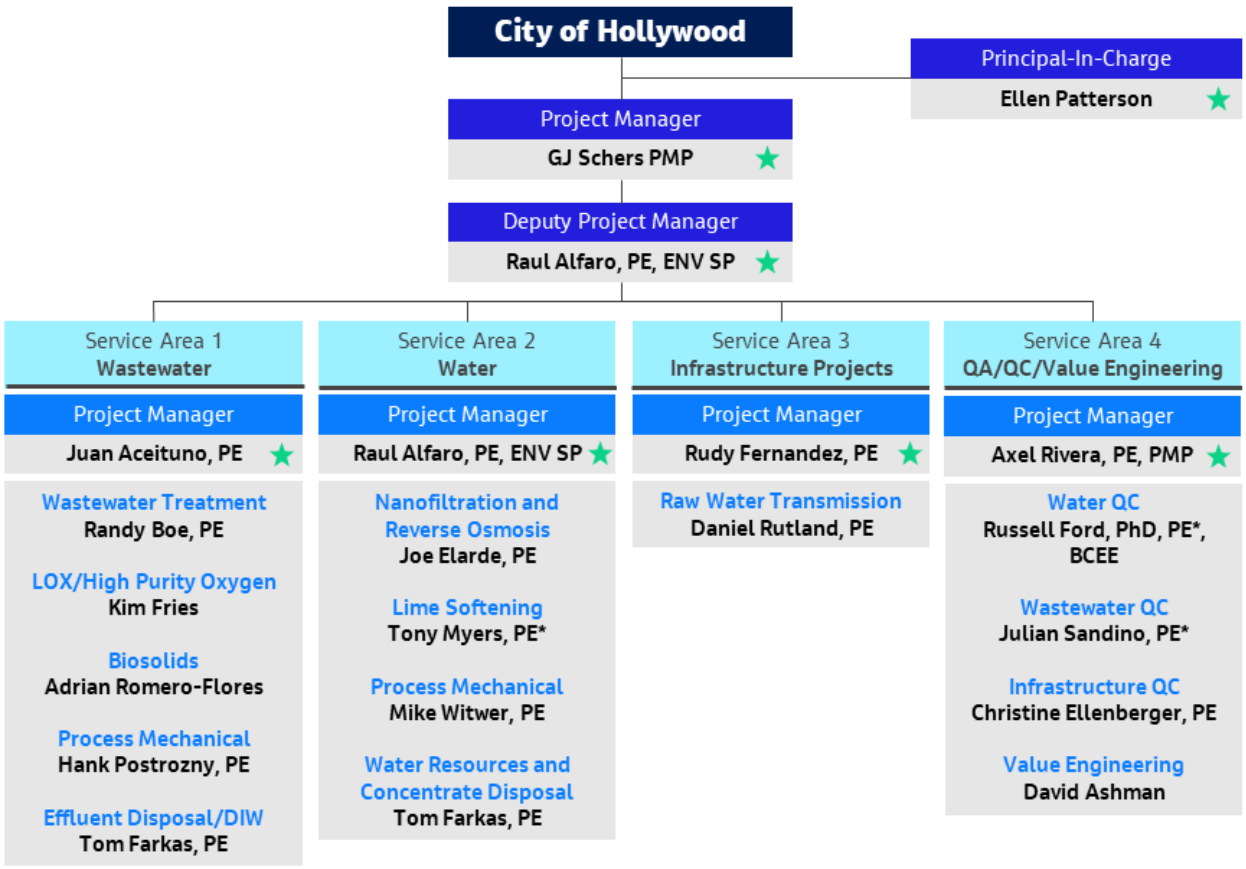
- Designed >200 miles of new and >500 miles of rehabilitated pipelines
- Extensive condition assessment experience on force mains
- Expert in trenchless technologies

QA/QC/VE Project Manager

Axel Rivera, PE, PMP

- Extensive construction management experience
- Expert in cost estimating and value engineering tasks
- Constructability and QA/QC reviews of design deliverables

Organization Chart



★ Key Professionals
* PE outside of FL

Cost Containment, Minimization of Change Orders and Project Completion within Initial Budget

At Jacobs, accountability drives repeat business, amounting to approximately 95% of our workload. Accountability to us means listening to our clients' needs and suggestions, seeing them in context, communicating early and often, pulling in the right and best qualified people for a deliverable within scope, schedule, and budget. Quality management is not just a process at Jacobs, it is the foundation of our culture and the basis for our operating policies and governing values—between each other and with our clients. We challenge and empower each employee to take personal responsibility being environmental and inclusive stewards and doing good work and then support them with tools, processes, checks, and balances that allow them to perform at peak levels.

Clients rely on our focus on quality, which translates into minimizing the need for rework reducing schedule overruns, improving cost estimating accuracy, and providing safety compliant designs.

We have consistently delivered designs of WTP projects with a net change order amount of less than 3% of the original bid price. **This low change order percentage is indicative of our long history of delivering projects with a high level of detail, completeness, and accuracy, requiring minimal revisions.**

Also, we are proud of developing **accurate opinion of construction cost estimates** at preliminary and final design deliverable **stages,** evident in the table below. This illustrated our track record of understanding material. labor and generally construction cost trends. We believe this in a large part is driven by our construction department that relies on accurate construction estimates to be successful in the industry.

Project Name, bid - completion	Client	Original Estimate	Final Cost	Variance
NF Expansion 2015 – 2017	North Springs Improvement District, FL	$20,057,510	$19,450,000	-3%
Green Meadows RO and IX 2016 – 2018	Lee County Utilities, FL	$72,392,000	$73,000,000	1%
Filter Drainage Improvements 2021 – 2023	City of Melbourne, FL	$1,674,123	$1,641,727	-2%
NF Improvements Design	Collier County, FL	$3,010,390	$3,164,390	5%
North Miami Beach NF and RO Expansion	North Miami Beach, FL	$9,373,582	$9,754,952	4%
Dixie Wellfield Improvements	Fort Lauderdale, FL	$8,993,000	$8,895,000	1%
Peele Dixie Membrane WTP Improvements	Fort Lauderdale, FL	$26,555,000	$26,035,000	2%.
GT. Lohmeyer WWTP Pump Station Upgrades	Fort Lauderdale, FL	$7,201,000	$7,229,000	-0.4%

Our overall philosophy in providing any type of professional service is to deliver high-quality work and build a meaningful client relationship. This is done through engagement of qualified personnel and through open and honest communication during every step of the project. This starts with developing and providing clear and detailed scope of services that stipulates what is included in the scope, as well as assumptions to make sure our understanding aligns with the City of Hollywood's vision of the work.

Our hands-on operational experience improves the quality of the designs: We don't just design water and wastewater treatment plants, we can operate them as well. Our operations and maintenance (O&M) experience brings a valuable perspective into the design process – successfully implementing best practices in real-world settings. We develop methods and tools to define a sustainable, integrated, and risk-based strategy for managing your assets at your desired level of service.

Sub Consultants/Sub Contractors

Jacobs will use the following subconsultants: Craig A. Smith and Associates (CAS) for surveying, RADISE International, L.C. (RADISE) for geotechnical, and Launch! Consulting, Inc. (Launch!) for emergency preparedness. Their profiles are provided in Tab H | Subconsultant Information.

Resumes

GJ Schers, PMP | PROJECT MANAGER

GJ has over 31 years of experience and is a globally recognized subject matter expert in water technology. He presented over 70 papers and is an expert in water chemistry and membrane technology. GJ's expertise includes design of different ion exchange and media filtration systems, including greensand, multi-media, sand, activated carbon and bio-filtration. In addition to new membrane facilities, he also worked on numerous membrane skid replacement projects, including Cape Coral, North Miami Beach, Collier County, Bonita Springs and Boynton Beach. He is a chair of the American Water Works Association (AWWA) M76 Workgroup developing a pilot manual to be used as best practices guide in the US.

Education | Qualifications	MS, Civil Engineering, Delft University of Technology, Netherlands BS, Civil Engineering, Delft University of Technology, Netherlands
Registrations | Certifications	PMI/Project Management Professional (#428825)
Publications Highlight/ Conference Proceedings	*One-Step Surface Water to Drinking Water Pilot with Hollow Fiber Nanofiltration in Melbourne, Florida*, AMTA/AWWA Membrane Technology Conference, February 2023

Total Years of Experience: 31 | Years with Jacobs: 7 | Years with other firms: 24 | % Assigned: 40%

RELEVANT PROJECT EXPERIENCE

Principal Technologist and Project Manager, Master Plan, RO Membrane, Feed Pump and Odor Control Replacement, Filter Improvements and Treatability Testing, City of Melbourne FL. Developed membrane specifications, bid support and professional services during construction. The work included a pilot plant study to verify performance of reverse osmosis (RO) membrane elements, a study to address 4-log virus treatment, modifications to RO feed pumps and replacement of degasifiers and biological scrubbers. Work continued with developing a master plan of both surface and groundwater treatment plants (WTPs), with combined rating of 25-mgd. The SWTP raw water contains high levels of organic material and color and based on recent sampling revealed the presence of per- and poly-fluoro alkyl substances at the point of entry. Current projects include improvements and expansion to the media filters at the SWTP, SCADA improvements, and treatability testing that include technologies like biological active filtration (BAF), low pressure and high-pressure membranes for raw water and backwash treatment.

Principal Technologist and Project Manager, Membrane Element Replacement and Treatability Testing at West WTP and Generator Replacement, City of Boynton Beach FL. The work included a study to identify the best nanofiltration (NF) membrane replacement option, technical specifications and bid forms. The study looked at finished water goals and different operational scenarios to select the best membranes for softening of the hard and colorful Surficial Aquifer water. This work continued with verifying pre-selected membranes performance during a 6-month pilot study. The study also looked at pre-treatment options to remove particulates present in the raw water and reduce or eliminate sulfuric acid during pre-treatment. This work continues now with a conceptual design and design-criteria package development to replace pre- and main treatment at the West WTP rated at 10-mgd. For the other project at the east WTP, a design-criteria package was developed to replace the standby generators, including a Tier 4 625 kW machine.

Principal Technologist, Master Plan, 4-Log Virus Compliance, Membrane and Lime Softening Studies and NF and RO membrane Skid Replacement, North Miami Beach FL. Developed the master plan for North Miami Beach water supply facilities and identified best methods to comply with Florida's groundwater rule for 4-log virus compliance. The existing Norwood-Oeffler WTP, rated at 32-mgd, contains three separate treatment trains involving lime softening, NF and RO treatment technologies. Work included bench/full-scale testing to define breakpoint chlorination curves for groundwater, chlorine decay tests and system distribution simulation (SDS) test and to optimize lime softening treatment process in regards of hardness, color and suspended solids removal. The work continued with the design and construction of NF and RO membrane expansion with an additional 6-mgd capacity (Phase 1) and lime softening expansion / rehabilitation (Phase 2). The membrane expansion included new sand separators, addition of membrane elements and pressure vessels to increase the NF and RO skid capacities, modifications to membrane skids to accommodate higher flows and chemical improvements to increase the system recovery. The lime softening expansion included a new lime softening clarifier, chemicals for increased color removal, recarbonation system, media filters, transfer/high services pumps, elevated storage and other R&R needs.

Raul Alfaro, PE, ENV SP | DEPUTY PROJECT MANAGER/ WATER PROJECT MANAGER

Raul is a water/wastewater project manager and engineer who has 7 years of experience supporting municipal water utilities and private commercial clients across the state of Florida, the US, and the Caribbean during all stages of the design process, from master planning to plant commissioning. His work includes condition assessments, performance testing, facility evaluation, process optimization, expansion evaluation, pilot testing, plant commissioning, and capital improvement planning.

Education | Qualifications	BS, Environmental Engineering, Florida International University
Registrations | Certifications	Professional Engineer: FL (#92557) Envision Sustainability Professional: ENV SP (#24443) J100 Utility Risk and resilience Certificate
Publications Highlight/ Conference Proceedings	*Modernizing an Existing Nanofiltration Facility to Improve Treatment Performance and Increase Production Capacity*, AMTA/AWWA Membrane Technology Conference, February 2023.

Years of Experience: 7 | Years with Jacobs: 6 | Years with other firms: 1.5 | % Assigned: 40%

RELEVANT PROJECT EXPERIENCE

Project Manager/Process Engineer, Pilot Testing and Improvements to Pre-Treatment and NF Membrane Skids, City of Boynton Beach, FL. Responsible for startup and operating nanofiltration softening membrane and enhanced pre-treatment pilot, which included granular media filter and sand strainer. Captured daily process and water quality data to evaluate membrane element performance, solids removal with pre-treatment, and scale inhibitor for performance-driven process optimization and changes. The project also includes evaluation and recommendations for the replacement of the current systems' membrane elements and recommendations for upgrades to the existing system to optimize system operations.

Task Lead/Process Engineer, Condition Assessment, Comprehensive Utilities Master Plan, Pembroke Pines, FL. Managed a multi-discipline team on fast-tracked condition assessment project for the City of Pembroke Pines. The comprehensive assessment established a baseline of assets, unit processes, and components of water supply and wastewater including, treatment, conveyance, and distribution system from which rehabilitation and replacement projects were prioritized and included in the city's CIP.

Project Manager/Project Engineer, Asset Management Consulting Services, City of Fort Lauderdale, FL. This project includes a development of a framework for asset hierarchy at the George T. Lohmeyer Regional Wastewater Treatment Plant and determining how data will be stored and aligned in Cityworks. Project includes field collection and documentation of asset attribute data for all assets in the asset registry that meet the criteria established.

Project Manager, Replacement of the Pure Oxygen System at GTL WWTP, City of Fort Lauderdale, FL. Managed and part of the engineering team that coordinated and developed the Design Criteria Package and 30% design for the replacement of the pure liquid oxygen system at George T. Lohmeyer WWTP with new vacuum pressure swing adsorption (VPSA) technology. Managed a multi-discipline design team under a design support services contract.

Project Engineer, Norwood WTP Phase 1 and Phase 2 Improvements and Expansions, NMB Water, North Miami Beach, FL. Responsible for supporting the engineering and design of water treatment facility to expand the production capacity of the RO and NF systems. Performed process evaluation calculation and membrane projections, modifications to Ground Water Rule evaluations and South Florida Water Management District Water Use Permit, and contact time (CT) calculations for the membrane expansions. Conducted specialty inspections and witnessing of functional and performance testing of improvements for the low-pressure RO and NF systems at the Norwood WTP, with an expanded capacity of 41-mgd.

Project Manager Motor Control Center Replacement at GTL WWTP, City of Fort Lauderdale, FL. Responsible for managing the design and services during construction of project to replace various motor control centers and other electrical components that were past useful life in the George T. Lohmeyer WWTP. The contract value of improvements was approximately $5M.

Ellen Patterson | PRINCIPAL-IN-CHARGE

Ellen is a strategic and visionary leader with over 30 years of progressive experience in driving project delivery, achieving operational excellence, and expanding business acumen across a consulting organization. Her experience includes leading delivery teams through all phases of project planning, mobilization, execution, and closeout consistent with established delivery processes to meet scope, schedule, budget, and other contract requirements. As Vice President and Geographic Operations Manager for Jacobs' Florida and Puerto Rico offices, Ellen has profit and loss responsibility for a $250M per year consulting operation. Her operational experience includes leading strategic initiatives for geographic, regional, and global consulting platforms.

Education | Qualifications	MS, Environmental Science, Indiana University, Indiana BS, Chemistry, Indiana University of Pennsylvania, Pennsylvania BS, Environmental Health, Indiana University of Pennsylvania, Pennsylvania		
Years of Experience: 31	Years with Jacobs: 31	Years with other firms: 0	% Assigned: 10%

RELEVANT EXPERIENCE

- Demonstrated experience leading delivery teams through all phases of project planning, mobilization, execution, and closeout consistent with established delivery processes to meet scope, schedule, budget, and other contract requirements.
- Responsible for all areas associated with the delivery of a diverse project portfolio including balancing staff resource requirements, scope management, client satisfaction, risk and change management, quality, health and safety, and financial performance.

LEADERSHIP EXPERIENCE

Vice President/Geographic Operations Manager, Jacobs, Florida and Puerto Rico. Ellen is currently a vice president for Jacobs' Florida and Puerto Rico operations, with profit and loss responsibility for a $250M business.

Vice President/Operations Leader, Jacobs, South Florida, Gainesville, and Puerto Rico. Ellen was responsible for the operational performance of an extensive $70M per year consulting operation that includes more than 250 staff in South Florida, Gainesville, Florida, and Puerto Rico.

Lead Manager of Talent, CH2M HILL (now Jacobs). Ellen served as the manager of talent (MoT) for staff in South Florida as well as one of four lead MoTs for the firm (over 17,000 staff). She served as a corporate liaison on how best to operationalize core talent management initiatives firm-wide and mentored leaders on how to manage through change and key core leadership competencies.

Global Talent Manager/Strategic Staffing Manager, CH2M HILL (now Jacobs). Ellen was responsible for coordinating talent management functions globally for the firm's Water Business Group (over 3,000 staff) with a focus on strategic staffing for global programs and technologists. She coordinated assignments for upwards of 40 global program managers and provide direct strategic staffing expertise for multiple, billion-dollar programs across North America and the Middle East.

Regional Talent Manager, CH2M HILL (now Jacobs). Ellen served in multiple North American regional talent manager roles for staff populations varying between 350 to 650 and was a key member of regional leadership teams.

RELEVANT PROJECT EXPERIENCE

Project Manager, Water Quality Condition Assessment, City of West Palm Beach and South Florida Water Management District, FL. Managed planning project to assess water quality conditions within the southern L-8 Basin in western Palm Beach County. Water quality data generated under this 4-year project were compared to Florida Class I standards to evaluate the suitability of southern L-8 Basin water quality as a long-term potable water supply for the City of West Palm Beach. As project manager, was responsible for historical data review and evaluation, baseline monitoring plan development, execution and management of a monitoring program of seven selected inflow and canal sites, generation and submittal of interim and final reports, and client liaison. During the study, conducted workshops for local water control districts and regulatory agencies to review and received comments on the scope and progress of the project.

Juan Aceituno, PE | WASTEWATER PROJECT MANAGER

Juan is a bilingual licensed civil engineer in Florida and Texas with more than 25 years of experience in planning, design, and permitting of water and wastewater infrastructure projects ranging from sanitary sewer collection systems including pump facilities and regional water/wastewater treatment plants. His experience also includes water distribution network modeling and master plan studies for water and wastewater systems. During his career and experience in South Florida, Juan has gained experience in securing permitting approvals from Miami-Dade County and local municipalities for water and wastewater infrastructure projects.

Education | Qualifications	Master of Business Administration, Florida International University, Miami, FL
	Master of Engineering, Civil Engineering, Texas A&M University, College Station, TX
	Bachelor of Science, Civil Engineering, Texas A&M University, College Station, TX
	Associate of Science, Pre-Engineering, Houston Community College, Houston, TX
	Project Management Certificate, University of Miami, Coral Gables, FL
Registrations | Certifications	Professional Engineer: FL (#61061), TX
	Construction Document Technologist, Associate Value Specialist
	ENVISION Professional, ENV SP

Years of Experience: 25 | Years with Jacobs: 15 | Years with other firms: 10 | % Assigned: 40%

RELEVANT PROJECT EXPERIENCE

Project Manager, SDWWTP Consent Decree Project CD 1.09 Fats, Oils and Grease (FOG) Condition Assessment, Design of New Regional FOG Facility, Miami-Dade WASD, Miami, FL. Managed and led a design team to conduct a condition assessment to establish the scope of the necessary improvements to comply with the Consent Decree Requirements. The assessment investigated needed short-term enhancements to facilitate current operational improvements, and modifications to allow beneficial use of FOG. Several alternatives were presented and compared in workshops as the basis for the recommended alternative and definition of the project. A basis of design memorandum was prepared to establish the criteria for detailed engineering design including an opinion of cost, schematic drawings and construction considerations for implementation. Based on the recommended improvements to the existing FOG Facility, the State of Florida required WASD to design and construct a new regional FOG facility.

Juan managed a multidisciplinary design team including subconsultants during the planning phase to site and locate the new regional facility. Successfully completed the basis of design for the facility which included approval from FDEP. Completed the detail design phase for a $39M regional facility while successfully securing the dry run permit from Miami-Dade Building Department and FDEP.

Project Manager, Miami-Dade WASD, SDWWTP Oxygen Cryogenic and Air Compressor Facility Improvements – Capital Improvements Consent Decree Project 1.2, Mami, FL. Managed a multi-discipline team, including subconsultants, during the bid advertisement phase under an aggressive consent decree schedule to deliver a set of construction documents to upgrade the air compressor capacity of the existing facility. Delivered the final 100% design and secured the dry run permit approval from the MDC Building Department on schedule. Worked with the Consent Decree program team and WASD staff to procure the pre-purchase of a new 125-ton air compressor and upgrade of an existing 100-ton air compressor. Managed a multi-discipline design team to provide technical support during the installation and successful start-up of a new compressor. Currently, providing technical support to start up the second compressor and finalize the construction phase which includes record drawing support, update of the facility's operation and maintenance manual.

Project Manager, South District WWTP Renewal and Replacement (R&R), Screening Improvements to Plants 1 and 2 Final Design and Services During Construction, Miami-Dade Water and Sewer Department, Miami, FL. Managed the planning, basis of design and final design to install four new fine plate screens at the SDWWTP Headworks Facility. The design required modifications to an existing facility to construct screenings systems improvements for Plants 1 and 2 consisting of grit chamber modifications and fine screens installation. Design included construction of a new Electrical Building associated with the improvements, plant control system modifications, site civil and stormwater modifications, and installation of a new fire alarm system.

Rudy Fernandez, PE | INFRASTRUCTURE PROJECT MANAGER/CONVEYANCE

Rudy brings more than 44 years of management and design experience in water and wastewater infrastructure, having been in environmental and civil engineering since the passage of the 1972 Clean Water Act Amendment. He has a proven track record of helping public utility agencies design and install new and rehabilitated large-diameter pipelines of up to 78 inches, including multiple pipe materials. Throughout Rudy's career, he has designed more than 200 miles of new pipelines and over 500 miles of rehabilitated pipelines.

Education | Qualifications	BS, Civil and Geological Engineering, Princeton University		
Registrations | Certifications	Professional Engineer: FL (#40328), GA, DE, ME, MD, MA, NJ, NC, SC, VA, WV		
Years of Experience: 44	Years with Jacobs: 25	Years with other firms: 19	% Assigned: 40%

RELEVANT PROJECT EXPERIENCE

Design Engineer, Construction Manager, and Project Manager, City of West Palm Beach 42-inch/48-inch Prestressed Concrete Cylinder Pipe (PCCP) Force Main Condition Assessment and Rehabilitation, West Palm Beach, FL. Performed professional engineering services relative to the design of cured-in-place lining of 13,000 LF of the existing 48-inch PCCP force main. The force main conveys a 20-mgd flow from the City and the Town of Palm Beach. Service could not be interrupted; therefor, over several months, flow was bypassed so the existing pipe could be lined. The liner was designed to restore the structural integrity of the force main using cured-in-place trenchless technology (CIPP) rehabilitation/renewal. Served as design engineer and subsequently as construction manager and project manager. The first phase the project was designated as the 2017 U.S. Project of the Year by *Trenchless Technology* Magazine.

Project Manager, City of West Palm Beach General Engineering Services, West Palm Beach, FL. Delivered six projects for the city under a separate continuing engineering services agreement: plans and specifications for emergency repairs related to the PCCP portion of the water distribution system; backwash recovery study at the water treatment plant; plans, specifications, and contractor procurement for the replacement of an existing water meter and vault at the water treatment plant; design and specifications for yard piping at the water treatment plant and related the backwash recovery study; and a thorough update and calibration of the water distribution model.

Subject Matter Expert, City of Fort Lauderdale, City-Wide Force Main Condition Assessment Plan, Fort Lauderdale, FL. Assisted in the development of a plan for conducting condition assessment of the city force mains transmission system. The plan included sufficient detail to schedule improvements of aging or deteriorating pipes, connections, valves, and appurtenances. The plan includes descriptions and application of condition assessment methods such as analysis of coupons from previous pipe failures, analysis of surrounding soil characteristics, oceanic impacts on force mains, noninvasive defect detection, and other methods. The plan also presented the method to perform a detailed risk analysis.

Design Engineer, City of Fort Lauderdale Force Mains, Fort Lauderdale, FL. Rudy completed the 30% design and specifications for the design criteria package the city will use to procure a DB firm for a new 9,000 LF 42-inch force main plus 3,000 LF of 20-inch and 42-inch force main, using horizontal directional drilling and open-cut methods.

Engineer of Record/Project Engineer, FDOT District 5 I-4 Ultimate, Area 3 and Area 4 Wet Utility Relocations, Orlando, FL. The project includes design of pipeline relocations, replacements and improvements for pipeline conflicts for I-4 widening in downtown Orlando— from west of Kirkman Road in Orange County to east of State Road 434 in Seminole County. Jacobs is a member of the SGL DB joint venture. Rudy serves as a wet utilities engineer of record for utilities in Project Areas 3 and 4, including Seminole County, Maitland, Altamonte Springs, Sanlando Utilities, Orange County, and Winter Park, in addition to the FDOT rest area utilities. Rudy is responsible for review of contractor submittals and review, approval, signing, and FDEP permit closure documents.

Axel Rivera, PE, PMP | QA/QC/VALUE ENGINEERING PROJECT MANAGER

Axel has 20 years of experience in project management of construction projects. He is responsible for the direct supervision and coordination of the design and construction phases, inspection and quality compliance, claims and change order negotiations, environmental and permitting requirements.

Education | Qualifications	BS, Mechanical Engineering, University of Puerto Rico, RUM
Registrations | Certifications	Professional Engineer: FL (#80109 PE); Puerto Rico (19144 PE)
	Certified Project Management Professional (PMP) - 1744377
	Member – Professional College of Engineers & Surveyors of Puerto Rico (CIAPR)
	Project Management Institute Member (PMI)

Years of Experience: 20 | Years with Jacobs: 0.5 | Years with other firms: 19.5 | % Assigned: 40%

RELEVANT PROJECT EXPERIENCE

Project Manager, GTL WWTP, Emergency Generator Connection and Switchgear Upgrade, Fort Lauderdale, FL. Project manager for the replacement of the existing 4,160-volt switchgear No. 1, 4 existing unit substations No. 1 and No. 2 and existing 480-volt motor control center at GTL WWTP. Monitoring of the project execution, perform site visits regularly and lead project meetings to prevent and inform any issues affecting the cost, quality and/or project schedule. Negotiation and resolution of claims and preparation of change orders. Preparation of weekly and monthly reports indicating the progress of the project and any issues affecting the schedule. Evaluation and analysis of progress schedules. Review of submittals and requests for information (RFIs). Review of contractor's payment certifications and consultant's invoices. Assurance of project compliance with the contract, plans, and specifications.

Project Manager, GTL WWTP, Rehabilitation of PCCP, Fort Lauderdale, FL. Project manager for the replacement of 48-inch and 42-inch PCCPs and the installation of a temporary by-pass at the GTL WWTP. Monitoring of the project execution, perform site visits regularly and lead project meetings to prevent and inform any issues affecting the cost, quality and/or project schedule. Supervision of the CEI work. Negotiation and resolution of claims and preparation of change orders. Preparation of weekly and monthly reports indicating the progress of the project and any issues affecting the schedule. Evaluation and analysis of progress schedules. Review of submittals and RFIs. Review of contractor's, consultant's, and CEI's payment certifications. Assurance of project compliance with the contract, plans, and specifications.

Project Manager, GTL WWTP, Replacement of Motor Control Centers, Fort Lauderdale, FL. Project manager for the replacement of four motor control centers (MCCs) and unitized sub-stations (USSs) at the GTL WWTP. Preparation of the preliminary scope of work and task order in order to request consulting services for project design. Negotiation of consultant's proposal fees. Kickoff meeting coordination. Review and approval of the 30%, 60%, 90% and 100% design deliverables. Confirm that the design deliverables follow the agreed scope of work. Make sure that the design includes all the specifications and construction details provided by the city, county, FDEP, and other agencies having jurisdiction. Confirm that all permits for the project are being procured (city, county, FDEP, USACE, etc.). Monitoring of the project execution, perform site visits regularly and lead project meetings to prevent and inform any issues affecting the cost, quality and/or project schedule. Supervision of the CEI work. Negotiation and resolution of claims and preparation of change orders. Preparation of weekly and monthly reports indicating the progress of the project and any issues affecting the schedule. Evaluation and analysis of progress schedules. Review of submittals and RFIs. Review of contractor's, consultant's, and CEI's payment certifications.

Dave Green | GRANTS AND LEGISLATIVE ASSIST.

Dave is a senior economist with 44 years of experience providing consulting services for a wide variety of economic and financial analyses. Specific financial experience includes preparing capital improvement funding plans, including reviews of funding options, feasibility studies, cost effectiveness analyses, capital prioritization and asset management plans, optimization analyses, preparation of engineer's reports in support of bond issues, grant and loan applications, and cash flow financing plans. He has conducted water, wastewater, reuse, electric, solid waste, hazardous waste, radioactive waste, and storm water rate studies and financial planning for more than 300 public and private clients in more than 30 states and in four provinces in Canada. As part of these studies, Dave has developed computerized financial planning, cost allocation, rate design, system development charge or impact fee, and/or demand forecasting models for many of these clients. He has assisted in the negotiation of contracts with wholesale suppliers, users, industries, and state and federal regulatory agencies. He has also prepared analyses of the financial capability and affordability of proposed combined sewer overflow (CSO) programs.

Education | Qualifications	MS, Economics, Portland State University BS, Agricultural and Natural Resource Economics, Oregon State University		
Registrations | Certifications	N/A		
Years of Experience: 44	Years with Jacobs: 44	Years with other firms: 0	% Assigned: 10%

RELEVANT PROJECT EXPERIENCE

Senior Economist, City of Fort Lauderdale Rate and Financial Studies, Fort Lauderdale, FL. The City of Fort Lauderdale was undertaking an extensive capital improvement program to update its waterworks infrastructure. To fund this major capital improvement program, the city issued in 2003 the first of five water and sewer revenue bond issues. In support of that bond issue. Dave led the preparation of a bond feasibility report. The feasibility report was part of a package that allowed the city to receive a bond rating that was better than anticipated by the city's finance director. In addition, he led the development of each of the other bond feasibility reports, the last being completed in 2012, as well as led the preparation of another bond feasibility report for the city in 2014 and again in 2018, which refunded prior bonds. Other work for the city included preparation of a cost-of-service rate analysis for the city's water and wastewater system, drought restriction rate analyses, impact fee analyses, annual capital renewal and replacement funding analyses, numerous additional financial studies, and State Revolving Fund loan applications for the city.

Senior Economist, North Springs Improvement District (NSID), Broward County, FL. Dave led several financial analyses for NSID, including multi-year water, wastewater, and reuse rate studies, bond engineer's reports for revenue bond issues, connection fee analyses, and engineer's reports for assessment revenue bonds for numerous developments in NSID's service area. NSID commissioned Dave to lead a financial analysis of the cost to NSID of providing wastewater and reclaimed water service to a recently annexed area of the NSID. Subsequent analysis considered impacts on Broward County's customers leaving the regional wastewater system. He recently revised the relationship between the District's impact fees for single family, multifamily, and commercial users.

Senior Economist, Miami-Dade County Ocean Outfall Program, Miami-Dade, FL. Dave conducted a prioritization analysis for three programs that the county is concurrently conducting. These programs which involve over $5B in regulatory mandated or state legislative prescribed improvements that the County needs to implement over the next 30 years to eliminate the county's discharge of wastewater effluent into the ocean, eliminate sanitary sewer overflows (SSOs), and repair or replace a large number of pump stations throughout their wastewater collection system. Each project within each program has been evaluated against 11 criteria that have been identified as important to meeting the county's overall goals and objectives and prioritized based on their expected performance in helping to achieve these goals.

Lead Analyst, USEPA Business Case Analysis (BCA) for Cincinnati Contaminant Warning System (CWS), Cincinnati, OH. Dave led a team that analyzed the business case for implementing and operating the CWS in the city. The CWS provides benefits for a single contamination event that far exceed the costs of the system, however the risk was remote. The BCA evaluated whether the benefits exceeded the costs given the perceived small, but unknown probability that a contamination event would occur. Study also estimated benefits of CWS to utility's daily operations.

Matt Crowley | CONDITION ASSESSMENT

Matt is the director of maintenance consulting services for Jacobs' O&M Technical Services Group and has 25 years of experience. He has been integral to the development of Jacobs' risk-based asset management approach. He has participated in many condition assessment projects for internal and external clients and has been a team leader on several projects. Matt is proficient in water and wastewater maintenance strategies, predictive and preventive maintenance technologies, and organizational performance support. He is experienced in the selection process and implementation of computerized maintenance management systems (CMMS) and has worked in this capacity for public and private utilities both large and small. He has extensive skills in process control planning and troubleshooting, data analysis and management, team leadership and work process planning.

Education | Qualifications	BS Marine Engineering, Massachusetts Maritime Academy
Registrations | Certifications	Massachusetts Grade 4 Municipal Wastewater Operator
	New England Water and Environment Association (NEWEA), Collection System Operator Grade 4
	US Coast Guard Third Assistant Engineer, Unlimited, Massachusetts

Years of Experience: 21 | Years with Jacobs: 4 | Years with other firms: 17 | % Assigned: 20%

RELEVANT PROJECT EXPERIENCE

Project Lead, City of Baton Rouge Collection System Operations Support, Baton Rouge, LA. Matt is working with the City of Baton Rouge to further develop their collections system linear asset and pump station vertical asset operations programs. Program development includes asset management strategies leveraging both contracted and in-house labor to address backlog, risk profile development for the vertical and linear assets in the collection system, department realignment and training. Information management is a key to meeting the city's operating goals requiring the integration of their GIS, CMMS (My Project Now), and SCADA systems.

Project Lead, New Castle County Cityworks Implementation, New Castle, Delaware. Matt led the development of an Operations Plan for New Castle County's Plant Operations department to support the implementation of Cityworks CMMS. The department operates over 165 pump stations with a staff 35 employees and was in need of building, from the bottom up, a documented asset management plan that was integrated with Cityworks, covered preventive, corrective and emergency maintenance response as well as a risk-based capital planning program. To support the development of the asset management plan interviews were required with will all levels of staff to develop detailed work procedures that supported work and data management practices expected by the Delaware Department of Natural Resources and Environmental Control.

Project Lead, Wichita Asset Management Project, Asset Management Model, O&M Plan Review, Wichita, KS. As part of an asset management program to support water and sewer utilities optimization, Matt has worked with City of Wichita Water and Wastewater Utilities to develop a risk-based condition assessment program intended to prioritized repair and replacement project risk of failure and O&M costs. O&M work practices, staff utilization, reporting and analytics are also being reviewed for the development of a sustainable asset management program model for the Utility.

Pro Lead, DC Water Asset Management Program, Washington, DC. Matt assisted the DC Water Asset Management Program (AMP) team in the development of an industry leading asset management program. He has led the preventive maintenance optimization (PMO) task, which included the review of existing maintenance processes, development of new maintenance strategies including condition-based maintenance, work plan strengthening and reassignment of tasks for effective use of craft labor. This task also included the review and development of detailed job plans in DC Water's CMMS Maximo.

Jim Oldach, CMRP AP, RCM II | ASSET MANAGEMENT/RELIABILITY AND O&M STRATEGIC PLANNING

Jim offers more than 25 years of experience as a skilled maintenance and reliability practitioner and asset management consultant. His O&M experience began as a ship's engineer in the U.S. Merchant Marine and then transitioned into shore side nuclear/fossil/hydro power generation maintenance and reliability. Overall experience spans multiple industries including water, wastewater, petrochemical, electric power, auto manufacturing, storm barriers, and pharmaceutical.

Education | Qualifications	BS, Marine Engineering, Massachusetts, Maritime Academy, Class of 1987 Valedictorian
Registrations | Certifications	Certified Reliability Leader (CRL), reliabilityweb.com
	Certified Maintenance and Reliability Professional (CMRP), Society for Maintenance and Reliability Professionals (expired)
	Reliability Centered Maintenance 2 Practitioner (Aladon)
	US Coast Guard Second Assistant Engineer for Steam Powered Vessels of Any Horsepower
	USCG Third Assistant Engineer for Diesel Powered Vessels of Any Horsepower
Publications Highlight/ Conference Proceedings	Co-developer of the Solomon Oldach Asset Prioritization process for establishing asset criticality in industrial applications. Demonstrated to save up to 70% of the effort as compared to legacy ranking methodologies.

Years of Experience: 25 | Years with Jacobs: 11 | Years with other firms: 14 | % Assigned: 40%

RELEVANT PROJECT EXPERIENCE

Asset Management Consultant, Maintenance and Reliability, City of Fort Lauderdale, Fort Lauderdale, FL. Support the city's George T. Lohmeyer WWTP with the implementation of a CMMS. Acting as the project lead for the development of a functional location and asset hierarchy to include physical walk down and documentation of asset attributes. Led the facilitation of the asset criticality ranking of all plant assets using the Jacobs SOAP criticality ranking method.

Maintenance and Reliability Consultant, Gwinnett County Dept of Water Resources, GA. Jacobs was contracted in 2014 to assess the maintenance operations and reliability excellence (MORE) programmatic components and develop a multi-year improvement plan. The assessment was conducted using Jacobs' maintenance and reliability assessment scorecard and roadmap development process. As a result of the assessment, Jacobs assisted in the creation of five task teams, one for each of the Uptime Elements program categories, and then facilitated the development of task team charters and action plans. GCDWR's maintenance and reliability improvement efforts resulted in the Emerson's international award as 1st runner up in the Reliability Program of the Year competition coming in second behind Saudi Aramco oil company.

Maintenance and Reliability Consultant, Maintenance and Reliability, Seattle Public Utilities, Seattle, WA. To develop a maintenance staffing plan for wastewater and stormwater pumping stations and storage facilities currently under design. The work will enable the utility to proactively forecast and hire the correct number of personnel with the appropriate skill sets (electrical, mechanical, instrumentation, operations, etc.) prior to facilities going into operation. Using historical data analysis and a library of proactive maintenance activity tasks and labor estimates, developed a proposed proactive maintenance strategy and associated level of effort, estimated the level of corrective maintenance based on industry statistics and client work history, and then provided a projected maintenance level of effort.

Maintenance and Reliability Consultant, Maintenance and Reliability, United Utilities (UU), Manchester, UK. Conduct a detailed assessment of the maintenance and reliability program using Jacobs' MR Assessment tool and process that includes performance criteria for approximately 110 elements across 9 categories of maintenance and reliability management. UU is the fourth largest water utility in the world and has approximately 1,500 maintenance personnel servicing hundreds of facilities across northwestern England. Led best practices assessment and was principal designer of the multi-year maintenance and reliability program improvement strategy. Continue to support UU with implementation of the proposed strategy across four sites selected for a pilot project. UU received the Reliability Web/Uptime Elements Leadership for Reliability Award in December 2022.

Name / Role / Availability	Qualifications	Relevant Experience
Randy Boe, PE **Wastewater Treatment** **Assigned: 20%** **Years with Jacobs: 27** **Years with other firms: 2**	MS, Environmental Engineering, Virginia Polytechnic Institute and State University BS, Civil Engineering, Virginia Polytechnic Institute and State University	▪ Process Engineer, South District WWTP Oxygen Production Upgrades, Miami FL ▪ Senior Technical Consultant, Miami-Dade County Ocean Outfall Legislation Program, Miami FL ▪ Senior Technical Consultant, GT Lohmeyer WWTP – Pure Oxygen Generation System Replacement, Fort Lauderdale, FL
Kim Fries **LOX/High Purity Oxygen** **Assigned: 20%** **Years with Jacobs: 20** **Years with other firms: 24**	MS, Environmental Engineering, University of Toronto BS, Civil Engineering, University of Manitoba	▪ Process/Commissioning Lead, City of Winnipeg, South End Winnipeg Pollution Control Centre Upgrades and Expansion for Nitrogen and Phosphorus Removal, Winnipeg, Manitoba, Canada ▪ Lead Process Engineer; The City of Calgary Bonnybrook WWTP Process Upgrades, Calgary, Alberta ▪ Senior Process Engineer, Metro Vancouver Northwest Langley WWTP Upgrade, Langley, British Columbia
Adrian Romero-Flores **Biosolids** **Assigned: 20%** **Years with Jacobs: 6** **Years with other firms: 4**	PhD, Civil and Environmental Engineering, University of Maryland MS, Environmental Engineering, Monterrey Institute of Technology BS, Chemistry, UANL	▪ Lead Project Engineer, Biochar Business Case Evaluation, City of Tacoma, WA ▪ Lead Project Engineer, Biosolids Master Plan, City of Encinas, CA ▪ Lead Wastewater Process Engineer, Chemical Modeling for the Austin Water Collection System, Austin, TX
Hank Postrozny, PE **Process Mechanical** **Assigned: 20%** **Years with Jacobs: 31** **Years with other firms: 12**	MS, Environmental Engineering Science, University of Florida BS, Environmental Engineering, University of Florida BS, Chemistry, University of Florida	▪ Project Manager/Lead Engineer/Engineer of Record, Lift Station Rehabilitation, City of Boynton Beach, FL ▪ Lead Process/Mechanical Engineer/Engineer of Record, Lift Station 317 Rehabilitation, City of Boynton Beach, FL ▪ Lead Process/Mechanical Engineer/Engineer of Record, Pump Stations D2 and B44 Rehabilitation, City of Fort Lauderdale, FL
Tom Farkas, PE **Effluent Disposal/DIW | Water Resources and Concentrate Disposal** **Assigned: 20%** **Years with Jacobs: 27** **Years with other firms: 7**	MS, Hydrogeology, University of South Florida BA, Geology, Case Western Reserve University	▪ Senior Hydrogeologist, North Lee County Water Treatment Plan Deep Injection Well II, Fort Myers, FL ▪ Project Manager/Senior Hydrogeologist, Fort Myers Beach & Fiesta Village Class V Reclaimed Water ASR Well System, Fort Myers, FL ▪ Project Manager, Class V Reclaimed Water ASR Program, Manatee County, FL

Name / Role / Availability	Qualifications	Relevant Experience
Joe Elarde, PE **Nanofiltration and Reverse Osmosis** **Assigned: 20%** **Years with Jacobs: 24** **Years with other firms: 0**	MS, Environmental Engineering, University of Illinois BS, Civil Engineering Technology, University of Illinois	▪ Project Manager and Process/Mechanical Designer, North County Regional WTP NF Improvements Evaluation and Design, Collier County Public Utilities Division, Naples, FL ▪ Lead Process Designer, RO WTP Expansion and Lime Softening WTP Improvements Design/Build, Bonita Springs Utilities, Bonita Springs, FL ▪ Senior Process/Mechanical Designer, Green Meadows WTP Expansion Design, Lee County Utilities Department, Fort Myers, FL
Tony Myers, PE (WI, MI, OH) **Lime Softening** **Assigned: 20%** **Years with Jacobs: 35** **Years with other firms: 2**	MS, Environmental Engineer, University of Illinois BS, Civil Engineering, Michigan Technological University	▪ Senior Technical Consultant, Water Quality and Treatment Task Lead, Water Supply Study and Lake Michigan Application, City of Waukesha, Waukesha, WI ▪ Project/Technical Manager, Distribution System Water Quality Study, Waukesha, WI ▪ Lead Process Engineer, Water Plant Improvements, Oshkosh, WI
Mike Witwer, PE **Process Mechanical** **Assigned: 20%** **Years with Jacobs: 17** **Years with other firms: 0**	ME, Environmental Engineering, University of Florida BS, Environmental Engineering, University of Florida	▪ Pilot Plant Manager, Lake Washington WTP Filtration and Dual Membrane Pilot Study, City of Melbourne, FL ▪ Senior Process Technologist, City of Melbourne Water Treatment Plant Master Plan, Melbourne, FL ▪ Pilot Plant Manager and Process Lead, Pilot, Design and SDC for the RO/IX Green Meadows WTP, Lee County, FL
Daniel Rutland, PE **Raw Water Transmission** **Assigned: 20%** **Years with Jacobs: 1** **Years with other firms: 11**	MS, Agricultural and Biological Engineering Specializing in Land and Water Resources, University of Florida BS, Agricultural and Biological Engineering Specializing in Agricultural Systems, University of Florida	▪ Project Manager Design Engineer, L-73 Reservoir Design and Construction, Deseret Cattle and Citrus, Osceola County, FL ▪ Project Manager/Design Engineer, Soil and Water Engineering Technology, Bob Janes Preserve Restoration Project, Lee County, FL ▪ Project Manager/Design Engineer, Stormwater System Evaluation, Above Ground Impoundment Inspection and Above Ground Impoundment Certification, St. Lucie County, FL
Russell Ford, PhD, PE (NJ, NY, PA, CT), BCEE **Water QC** **Assigned: 20%** **Years with Jacobs: 29** **Years with other firms: 6**	PhD, Environmental Engineering, Stevens Institute of Technology MS, Environmental Engineering, Stevens Institute of Technology BS, Chemical Engineering, Syracuse University	▪ Senior Technical Advisor, City of Hamilton Drinking Water System, Hamilton, Ontario ▪ Principal-in-Charge and Senior Technical Consultant, Alternative Disinfection Study, Poughkeepsie's Joint Water Project Board, Poughkeepsie, NY ▪ Lead Process Engineer, Chao Chu Kang Water Treatment Works (WTW) Upgrades, Singapore Public Utilities Board, Singapore

Name / Role / Availability	Qualifications	Relevant Experience
Julian Sandino, PE (KS, NY) **Wastewater QC** **Assigned: 20%** **Years with Jacobs: 17** **Years with other firms: 22**	PhD, Environmental Health Engineering, University of Kansas MS, Environmental Health Engineering, University of Kansas BS, Civil Engineering, Universidad de Los Andes, Bogota, Colombia	▪ Senior Technology Consultant, Conceptual Design Report West District WWTP, Miami-Dade County, Florida ▪ Program Planning and Technology Director, Miami-Dade County Ocean Outfall Legislation Program – North District WWTP Conceptual Design, Miami, FL ▪ Process Optimization Lead, Ina Road WRF Capacity and Effluent Upgrade Project, Pima County Regional Wastewater Reclamation Department, Tucson, AZ
Christine Ellenberger, PE **Infrastructure QC** **Assigned: 20%** **Years with Jacobs: 11** **Years with other firms: 13**	MS, Environmental Engineering, Virginia Tech BS, Civil Engineering, Virginia Tech	▪ Pipeline Engineer/EOR, SJCUD CR214 24" Water Main, St. Johns County, FL ▪ Pipeline Engineer/Engineering Manager, JEA TWMP Segment 2 - 36" Water Main River Crossing DB, Jacksonville, FL ▪ Pipeline Engineer/EOR, 1-4 Ultimate, Area 3 Utilities, FOOT District 5, Orlando, FL
David Ashman **Value Engineering | Construction Management** **Assigned: 20%** **Years with Jacobs: 22** **Years with other firms: 2**	BS, Civil Engineering, Howard University	▪ Construction Manager/Project Manager/Assistant Deputy Design Manager, Utility Capital Improvement Projects (UCAP) Program, Tampa, FL ▪ Construction Manager, UCAP CIAC Segment 2 Phase 1 - Water Transmission Main, Tampa, FL ▪ Project Manager, Cypress Street Outfall Project, Tampa, FL
Mike Matichich **Grants and Legislative Assist.** **Assigned: 20%** **Years with Jacobs: 33** **Years with other firms: 5**	MURP, University of Wisconsin at Milwaukee AB, Politics & Government, Ripon College	▪ Task Lead, Evaluation of Alternative Funding and Financing Strategies for Nature-based Coastal Resilience Solutions, FL ▪ Funding Task Lead, Inter-American Development Bank: Identification of Viable Funding and Financing Options for Coastal/Flood Resiliency Projects, Belize ▪ Lead Financial Reviewer, Support in Securing Loan for $125 Million Drinking Water CIP, North Miami Beach Utilities, North Miami Beach, FL
Jerome Griffin, PMP **Corrosion** **Assigned: 20%** **Years with Jacobs: 6** **Years with other firms: 12**	ME, Construction Engineering, University of Alabama at Birmingham (UAB) MS, Management, Faulkner University	▪ Principal Corrosion Technologist, Amtrak East River Tunnel Reconstruction, New York, NY ▪ Principal Corrosion Technologist, Montgomery Water Works Sanitary Sewer Board, Corrosion Control, Montgomery, AL ▪ Principal Corrosion Technologist, Northeast Water Purification Plant, NEWPP. Coating Specification, Coating Remediation, Material Selection and Cathodic Protection, Houston, TX

Name / Role / Availability	Qualifications	Relevant Experience
Janeane Giarusso **Asset Management Systems/Plans** **Assigned: 20%** **Years with Jacobs: 7** **Years with other firms: 15**	MA, Urban and Regional Planning, Georgia Institute of Technology BS, Biology/Environmental Studies, University of California	▪ Project Manager and Technical Leader, Asset Management Program, Billings, MT ▪ Business Process Facilitate and Analyst, ISO 55001 Asset Management Certification, GA ▪ Technical Leader, Business Continuity Plan Development, Morrow, GA
Bob Lawrence **Work Management** **Assigned: 20%** **Years with Jacobs: 9** **Years with other firms: 14+** **(46 years in maintenance)**	AS, Information Technology, Jefferson Community College	▪ Senior Asset Management Consultant, Maintenance Excellence Initiative, Columbus, OH ▪ Senior Asset Management Consultant, Maintenance Work Management Process Improvement, Tampa, FL ▪ Senior Asset Management Consultant, Maintenance Planning and Scheduling Support, Seminole County, FL

TAB E

Approach to Scope of Work

Tab E | Approach to Scope of Work

With a sharp focus on schedule compliance, financial performance, safety, and risk management, we use our project delivery best practices to expertly manage and deliver your projects. Our team and approach are highly flexible and scalable, enabling us to right size our delivery teams and services according to your needs. This allows us to augment your staff, deliver specialty services, subject matter expertise for complex or niche issues, and provide full-service project delivery, including alternative delivery, as needed.

Project Understanding

Jacobs is eager to become a long-term successful partner to the City of Hollywood and help the City continue to provide essential services to the communities it serves. Jacobs recently visited the Southern Regional WWTP and the City of Hollywood WTP to better understand the City's needs, existing treatment processes, and the City's overarching vision for the planning horizon of this contract.

City of Hollywood WTP's existing membrane softening trains are arranged into a three-stage 32:16:6 configuration with seven element per pressure vessels and dedicated feed pumps.

Jacobs understands the City's existing WTP

The City of Hollywood WTP employs three (3) major treatment processes for a total rated capacity of 46-mgd; lime softening, nanofiltration (NF) membrane softening, and low-pressure reverse osmosis (RO). The treatment processes consist of 24-mgd from the lime softening system using Spiractors technology, 14-mgd from the membrane softening NF, and 8-mgd from low pressure brackish groundwater desalination RO. The City plans to invest on the replacement of existing membrane softening skids, which are at the end of their useful life. Each existing skid consists of a dedicated feed pump and 54 pressure vessels arranged into a three-stage 32:16:6 configuration with seven elements per pressure vessel and is designed to operate at an 87% recovery. The existing skids are over 40 years old while the existing membrane elements have been in continuous operation for approximately 18 years. As a result, the City intends to convert to a two-stage configuration and is currently operating a pilot to confirm operational design criteria and evaluating whether an antiscalant can successfully protect membrane elements from calcium carbonate scaling without the addition of sulfuric acid. **We ran a similar pilot for the City of Boynton Beach's membrane softening WTP and developed design criteria for the replacement of the six existing NF skids.** The pilot concluded that the elimination of sulfuric acid would result in a cost saving of up to $64,000/year for the utility, while reducing operator hazard.

North Miami Beach NF & RO expansion. Jacobs brings market-leading membrane experience to the City of Hollywood, FL.

The Jacobs team has direct experience with facilities similar to that of the City of Hollywood such as the City of North Miami Beach's Norwood WTP and the City of Deerfield Beach's West WTP. Both facilities have three major co-located treatment processes with lime softening, NF membrane softening, and low-pressure RO. For the City of North Miami Beach's Norwood WTP, **Jacobs designed, permitted, and provided construction management services for the NF membrane softening and RO desalination expansion project.** Both membrane expansions were designed with operational flexibility in mind and with a clear understanding of the membrane elements' anticipated rejection based on software projections and strong relationships with membrane system suppliers and membrane element manufacturers. Jacobs' design and procurement package also included a custom membrane loading sequence requirement to allow for the "right mix" of blend water quality to ensure that the City's water quality goals were met. Through a detailed construction sequencing, which included **G.J. Schers and Raul Alfaro** as key staff on the delivery team, the project was successfully completed in 2020 within schedule

and budget. **Jacobs' market-leading membrane experience brings the City of Hollywood lessons learned that lead to cost savings allowing the City to continue to maintain a cost-effective and equitable water system.**

Jacobs understands the City's Southern Regional WWTP

The City-owned Southern Regional WWTP collects and treats an average daily flow of 42-mgd of secondary-treated wastewater. The system serves large users such as Broward County, Dania Beach, Hallandale Beach, Miramar, Pembroke Park, and Pembroke Pines. The majority of the treated effluent is currently discharged to an ocean outfall, while approximately 11.65-mgd is discharged through injection in deep wells.

City of Hollywood's Southern Regional WWTP. The City intends to rehabilitate the existing clarifiers.

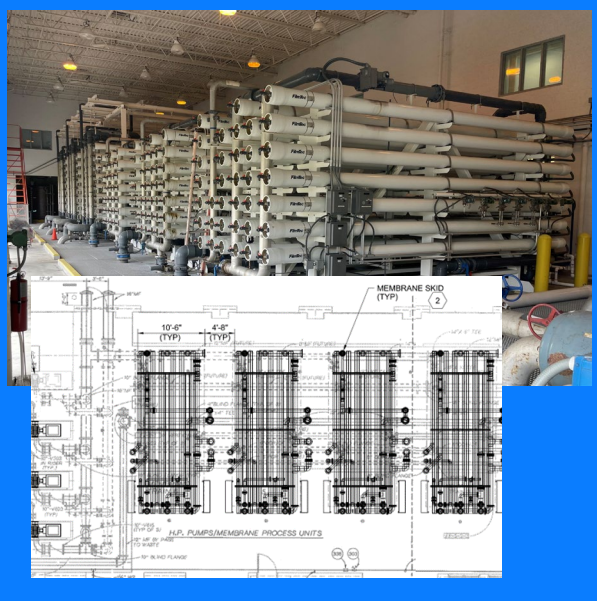
The City intends to rehabilitate the oxygen generation system under this contract. The previous rehabilitation effort was completed in 2010. The proposed **Jacobs team has been entrusted by several utilities with pure oxygen systems rehabilitation or replacements.** In 2022, we developed a design criteria package and 30% design for the selection of a qualified Design-Build contractor to replace the cryogenic oxygen production system with a vacuum-pressure swing adsorption oxygen production system at Fort Lauderdale's GT Lohmeyer WWTP. **We bring relevant project experience with lessons learned that can be applied to the City such as Miami-Dade Ocean Outfall Legislation Program which developed conceptual designs for the North District WWTP, South District WWTP, and Central District WWTP, which included evaluations and alternatives evaluations for modifications to the high purity oxygen activated sludge systems, oxygen production, aeration, headworks/screens, and clarifiers.** Under the project management guidance of **Juan Aceituno** and the process engineer and technical lead **Randy Boe**, these improvements were designed to a detailed design level and delivered successfully.

Our professional experience in water and wastewater offers a new perspective on the infrastructure challenges that the City is currently facing. We have assisted hundreds of utilities throughout the US in managing and implementing their CIP projects, with strong asset management practices, through general engineering services and CIP contracts. We will provide the City world-renowned engineering expertise, local presence, knowledge of current state and federal regulatory action that can directly impact the City's decisions and operations, and directly applicable experience in delivering successful water and wastewater projects, like those planned under this RFQ.

We have immediate availability to commit each of our project managers to each project listed under this contract. Our team brings a strong adaptable services approach, right sizing, and a flexible platform. This is a perfect approach for this type of contract to match the City's needs while leveraging our deep bench strength of engineers and subject matter experts, including our subconsultants. This flexible staffing platform will apply the right resources to the right project at the right time. Workloads will be managed to provide adequate capacity and immediate availability. We will also make our global experts available if the assignment requires it. We will dedicate any required resources and dedicated time to

City of Boynton Beach Membrane Softening Trains Replacement Project

Jacobs is the design criteria professional for the City's West WTP membrane softening trains replacement project. We developed a conceptual design and design criteria package based on a 6-month pilot study. The design allows for future expansion to a build-out capacity of 16-mgd, within the existing footprint of the membrane building. The NF skids will be modified from existing six elements per pressure vessel to seven elements per pressure vessel and from six skids with a 26:10 array to four skids with a 36:18 array. The design allowed the City to plan for a shift in reliability to this membrane softening facility and **saves the City an estimated $1.5 Million in construction cost** versus a replacement.



Key Staff: G.J. Schers and Raul Alfaro.
Relevance to the City of Hollywood: This project is similar in scope, size, and complexity to the planned membrane softening trains replacement that the City of Hollywood is intends to complete under this contract.

see each project through from planning to commissioning and startup, as requested and under the direction of the City. Our team is structured to meet any task order needed – your success is our highest priority.

Commitment to this Contract and to the City of Hollywood

Our local project team combines strong team leadership, unparalleled technical expertise, with familiarity with the City and its service area, and an understanding of the City's goals and challenges. All of our professionals offer the City a solid reputation for delivering quality service and their personal commitment to being available to the City throughout this contract. We will be a proactive, responsive extension of the City's staff, working in the best interest of the City. Our team organization provides the City with the following benefits:

- **An absolute commitment to the City and this contract**—providing exceptional client service, full accountability for our performance, and our best resources to help you achieve your future goals.
- **A high-performance management team with a successful history of working together and with other area clients**—bringing a highly cohesive, integrated team with proven experience delivering projects of similar scope, size, and magnitude on time and within budget.
- **Core delivery resources and support staff with the comprehensive skills required to deliver any project**—providing immediate access to our local and industry-leading experts and highly responsive service throughout this contract.

Our Project Manager and Deputy Project Manager believe that communication and responsiveness and delivering high quality products are key to effective project delivery.

We are only a phone call, text, or email away.

G.J. Schers, PMP
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954-513-1540 (Office)
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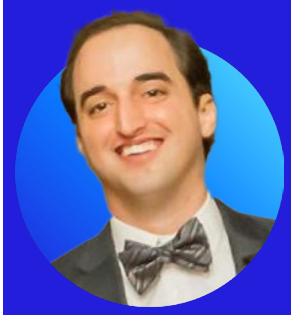


Raul Alfaro, PE, ENV SP
Raul.Alfaro@Jacobs.com
954-513-1530 (Office)
786-709-1119 (Mobile)

The proposed project managers for the four technical service categories have served as project managers for similar projects. These managers will be responsible for:

- Directing all technical and administrative requirements and assigning experienced personnel to the service area team.
- Maintaining strong channels of communication with team members through weekly meetings.
- Maintaining a close relationship with the City project manager so that tasks goals are clearly understood and met and include the City project manager on all key decisions that will affect the project.
- Resolving conflicts in a swift manner and meeting with the necessary personnel (field, office, City) on a regular basis.
- Maintaining project schedules and budgets by establishing a timeline that meets the City's satisfaction and holding weekly team meetings to ensure schedule adherence.

Overall Approach to Scope of Work – Project Initiation

Backed by our deep bench strength, our in-house pool of skilled resources allows us to **deliver concurrent projects on schedule and within budget.**

After our project manager is assigned, they will communicate the City's project manager and other key staff to get a full understanding of the scope and City's expectations for the project. We will develop a detailed scope so that there is a common understanding of the project. The project manager, working with the local service area leads, will make sure the right technical experts are assigned and confirmed to be available to work on the project. The project manager will also prepare a project schedule in Microsoft Project or Primavera, depending on the complexity of the project, and confirm that the schedule meets the City's expectation. If the project requires expedited services, our assigned project manager will determine what staffing needs to be added and brainstorm with other leaders and the City what options are available to ensure that the project is delivered within the City's required schedule. The scope, level of effort, and schedule will provide a clear roadmap for the project execution and delivery.

We have evaluated our current workload and we have the staff available to meet any project needs efficiently and effectively, whether a single task order or multiple concurrent projects.

Our Project Delivery System

Once the City has approved the project and given us a Notice to Proceed, our project manager will plan, charter, and implement project management activities. The project manager will then prepare and present the Project Management Plan (PMP) detailing specific project management activities that will be refined and administered throughout the project. We will use the PMP to manage risk, project controls, resources, schedule, quality, change management, corrective action, dispute resolution, health and safety, and project reporting in accordance with detailed project schedule and work breakdown structure specifically developed for each project.

The project will be delivered using the Jacobs' Project Delivery System (PDS). Jacobs' delivery system focuses on:

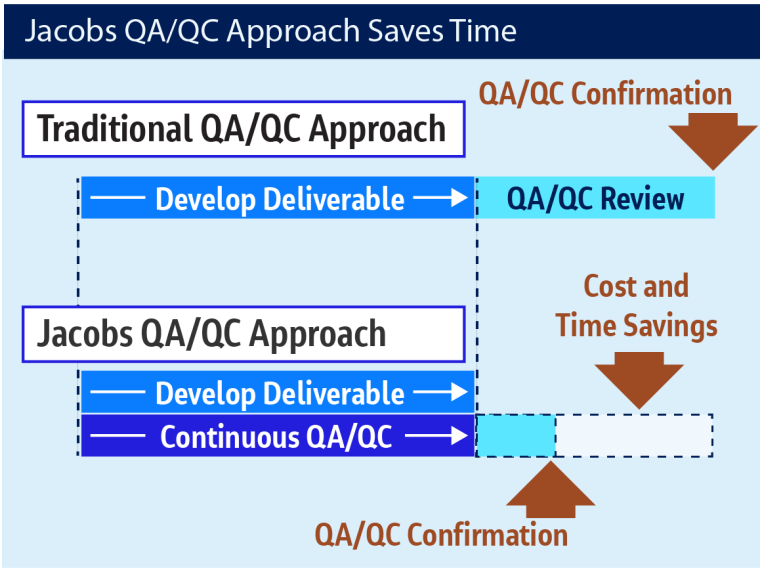
- Quality management
- Schedule and budget management
- Risk management
- Staff planning
- Team integration for enhanced collaboration and review.
- Safety management
- Decision-making tailored to the urgency of the project

Jacobs' Five-Step Project Delivery Process

Our project delivery system provides the framework for planning, delivering, and closing out each project, while managing change throughout.

Quality Management

For planning and preliminary design services, the QA/QC Plan is based on the deliverables planning. Each key deliverable is assigned a lead and senior reviewer who will review and sign-off on deliverables prior to being submitted to the City. Senior reviewers will help determine the scope, opportunities for sustainable and resilient initiatives and lessons learned. For detailed design, we will use discipline engineering checklists for work planning and QA/QC review. These checklists are customized by our senior reviewers. These checklists will address the specific project scope, City's specified requirements, and interactions with other design disciplines. Formal QA/QC reviews of complete contract documents are scheduled for the 30%, 60%, 90% and 100% submission stages unless otherwise agreed with the City. For construction, QA/QC will be the responsibility of construction manager, who will be supported by contract administrator and inspectors. He will audit the work of the construction team to make sure that the PMP is being followed and that all reports and logs are up to date.



Our quality control process builds quality into each project, rather than fixing it at the end.

Our work plan and delivery approach are developed to provide the City with a two-stage QA/QC process throughout the entire project: (1) continuous QA/ QC will be fostered by our discipline leads who will check the work of our discipline support staff, who in many cases will carry out the bulk of the work, and (2) formalized QA/QC confirmation with senior discipline reviewers at scheduled deliverable milestones.

Schedule and Budget Management

We understand that schedule control is one of the most crucial elements of change to project management, and that controlling costs, avoiding change orders, and minimizing time delays are essential. Our best practices for budget and schedule control have been successfully applied to numerous projects and programs, providing the City with the following benefits:

- Fully integrated Project Controls System (PCS) that provides rigorous cost and schedule management, systematic reporting tools, and cost-saving documentation tools. PCS includes analysis tools to forecast schedule, budget, and cash flow; is easy to use; and seamlessly integrates with standard project management software.
- Robust contract management and document control tools to control all contract- and project-related documentation. Our document control capabilities facilitate collaborative sharing of information for management, field staff, and other project stakeholders and aggressively track correspondence, requests for information (RFIs), and submittal turnaround.
- Systematic project reporting capabilities for timely and accurate performance reports that display scope, cost and budget, and status against the approved baseline.
- Scheduling tools and processes to provide rigorous schedule management, including accurate forecasting capabilities to form the basis for sound decision making. We use the project's work breakdown schedule (WBS) to organize scope, cost, and schedule and to leverage critical path method (CPM) scheduling and sequencing of contract work to track both near- and long-term activities.
- Cost control tools and processes, including earned value analysis and reporting if needed, to track and report the construction budget against established performance measures to ensure the projects financial requirements are met.
- Best practice change management, claims prevention, and issue resolution strategies that focus on capability, foster teamwork, and promote problem solving to support early identification of potential issues and the timely application of corrective actions.

Our proven schedule management tools and processes provide accurate forecasting and a basis for sound decision making, and include:

- Schedule that provides a time-phased plan based on the logical sequence of and tailored to the detail required for each project
- Schedule analysis to provide critical path analysis, float analysis, resource leveling, and preparation of alternate solutions.
- Key influences and actions affecting both internal and external to the project.
- Schedule performance reporting to the City, as frequently as required by the City.

Our primary project management goal is **delivering the project on time and on budget** while assuring all **quality control** processes are followed.

Our project managers will use Jacobs' fully integrated project control system to:

- Understand budget expenditure on a week-to-week basis as well as key monthly performance indicators.
- Compare the actual amount of work performed against the budget expended.
- Review and record in an action log associated constraints and issues with the design team on a weekly basis and the City's PM on a monthly basis.
- Address any cost or scope issued, develop mitigation measures, and reach consensus on next steps with the City.

Risk Management

Our project manager and the design team will, as needed, design meetings and use an Excel-based risk register to identify potential project risks on updates as the design progresses. This tool is flexible and can accommodate the tracking of design or construction risks, the register will be provided to the City at progress meetings.

"Jacobs has been very successful on getting subtasks completed on time for both projects and being cautious of the projects' budget and risks. It has been very productive to work with Jacobs on these two projects(…)"

– Elkin Diaz, MBA, P.E., PMP, IAM, City of Fort Lauderdale

Value Engineering (VE)

VE encourages the development of innovative solutions that fulfill a project's objective at minimum cost. In the best interest of our clients, we have expanded the goal of VE to reduce life-cycle costs and achieve a more rapid completion schedule.

For a VE workshop to be truly effective, it is critical to have a team that includes SMEs from various design disciplines and any other specialty disciplines based on project needs. These SMEs are not directly involved with the design to avoid bias and to foster fresh ideas. In our process, we invite the design project manager to the kickoff meeting and anytime during the VE Workshop to answer questions, if necessary.
Our PM will work with the City to first identify the critical design elements where VE is of most use. The PM will then identify available and experienced SMEs and reach into our national resources and subconsultants to assemble a VE Workshop team. We have found that our clients obtain the greatest benefit by conducting a VE workshop early in the project development phase when strategies and alternatives are being examined. The timing of this task is critical to the project's success.

We have helped save an average of $50 for every dollar our clients invest in VE, and our VE studies have saved clients millions of dollars in costs and provided improved benefits without compromising quality or schedule.

Jacobs provided a constructability and value engineering review for the design phase of the Sugar Land Surface WTP CMAR, Sugar Land, **Texas, resulting in a savings of $20M on an $85M design.**

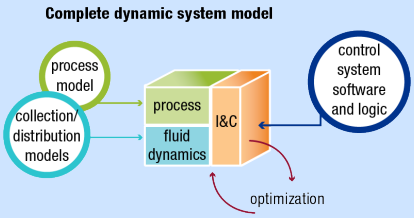
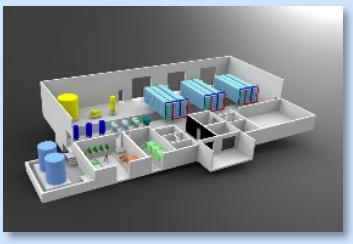
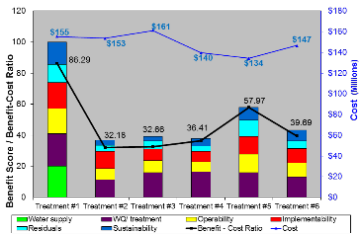
Design and Modeling Software Expertise

We are familiar with the infrastructure and experienced with industry-leading best management practices for all areas of your scope of work. We use industry recognized software tools, including WaterPro and Pourbaix Charts for water chemistry modeling, AFT Fathom for hydraulic modeling, Bentley WaterGEMS and EPANET for distribution system modeling and AUTOCAD and MicroStation for two and three-dimensional design.

In addition, we have developed specialized tools for streamlining the activities required to evaluate existing infrastructure, forecast future investment needs, and optimize the selection of alternative treatment scenarios. Select tools are noted in the table on the following page.

Jacobs has developed and successfully applied a variety of simulation and optimization modeling tools that quickly and accurately estimate capital, O&M, and life-cycle costs, treatment performance, and system control. We will use our Replica™ Parametric Design (PD) tool for City projects in addition to our experience with similar Florida waters and using on-site bench and pilot testing of alternative treatment technologies as necessary. Replica™ PD uses built-in algorithms based on general arrangement drawings derived from real projects to generate project-specific facility designs using the entered preliminary process design criteria at the conceptual stage of the project. Our Replica™ PD – CPES™ cost estimating tool will quickly generate accurate and detailed comparative construction, O&M and life-cycle costs for candidate alternative treatment options with the ability to check the sensitivity of changing size and process parameters. Compared with traditional conceptual estimating techniques, CPES yields a much clearer picture of the project's unique scope in a fraction of the time to help the City make informed decisions. We will use our Replica™ PD – Preview™ to help the City visualize the different options developed in CPES™ when evaluating process improvements. Our Replica™ - Digital Twin dynamic process simulation tool will be used to model existing or proposed treatment process operational changes or upgrades to determine the true optimum lifecycle cost options without the need to make estimations to simplify the analysis that can find apparent optimum solutions instead of true optimum solutions. A multi-criteria prioritization (MCP) model accounts for strategic objectives of the utility, is flexible to include decision criteria and weighting developed by the City, and scores total benefit value of proposed upgrades alternatives.

Jacobs' State-of-the-Art tools we offer to efficiently deliver City of Hollywood needs

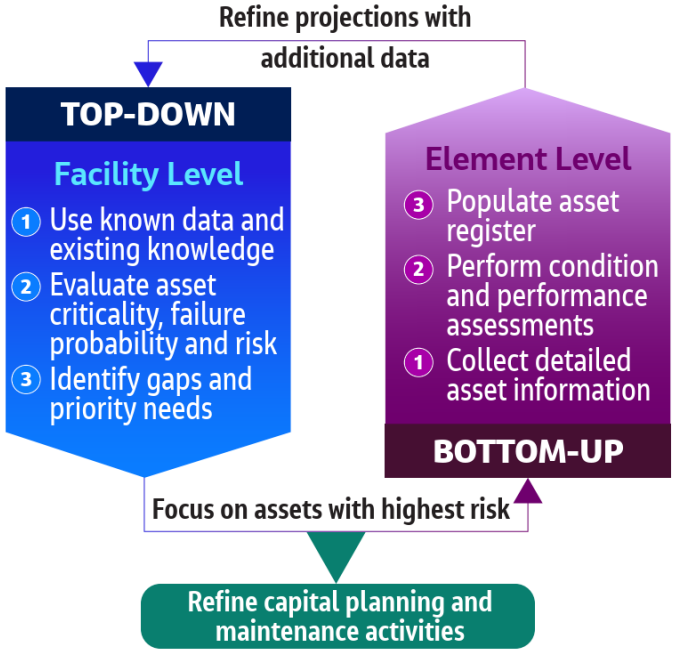
Tool Name | Graphic	Description	Benefits	Proofs
Replica - Digital Twin™ 	A dynamic in-house water and wastewater treatment performance and optimization tool combining hydraulics, process treatment, instrumentation and controls for simulation and optimization.	▪ Quick understanding of design choices on capital and operating costs ▪ Simulation of treatment processes for optimization of energy, chemical use, and improve water quality ▪ Powerful training tool	▪ Pembroke Pines Raw Water Line, FL ▪ Deerfield water supply, FL ▪ West Point WWTP, CA ▪ Bonita Springs WTP, FL ▪ Tarrant Regional Pipeline, TX ▪ London Lee Tunnel, UK
Replica Parametric Design - CPES™ 	Replica Parametric Design includes a state-of-the-art Conceptual Parametric Engineering System (CPES) used to generate project-specific, conceptual-level designs and cost estimates that support improved water management decision-making using preliminary project data.	▪ Accurate and detailed costs early in the project lifespan using project-specific input ▪ Allows life-cycle cost comparison of many alternatives for decision making ▪ Enables 3D visualization of facilities early in the project	▪ Aquifer Replenishment System, Hampton Roads, VA ▪ Melbourne WTP Master Plan ▪ St Petersburg Integrated Plan, FL ▪ Parque Novo Mundo Direct Potable Reuse, Sao Paulo, Brazil
Replica PD - Preview™ 	Our Preview™ model uses the designs developed in Replica PD to create initial 3D drawings at the conceptual level that will be enhanced during detailed design.	▪ Allows utilities to visualize proposed treatment options during the conceptual evaluation ▪ Provides understanding of how new facilities will integrate into existing sites	▪ Melbourne WTP Master Plan ▪ Green Meadows WTP Design, FL ▪ Coral Springs Improvement District WTP Design, FL ▪ North Springs Improvement District WTP Design, FL
Multi-Criteria Prioritization (MCP) 	A MCP model accounts for strategic objectives of the utility, is flexible to include decision criteria and weighting developed by the FKAA, and scores total benefit value for each design alternative.	▪ Evaluate non-cost technical, economic, and O&M benefits ▪ Provides an efficient way to evaluate several treatment options for non-cost benefits while providing a defensible basis for process selection ▪ Combines with design costing, and optimization tools to find highest benefit-cost ratio	▪ Melbourne WTP Master Plan ▪ Lee County Green Meadows WTP Design, FL ▪ Coral Springs Improvement District WTP Design, FL ▪ North Springs Improvement District WTP Design, FL

Asset Management

Jacobs has partnered with multiple agencies to author industry asset management guidance documents.

Jacobs is a leader in asset management best practices and applies its industry best practices to every asset management project that we perform. Our team has been helping customers effectively manage water assets for decades. We have continually developed specialized practices to help optimize the O&M and capital improvement of our clients' infrastructure. In particular, we have partnered with multiple agencies including WEF, U.S. EPA, National Association of Clean Water Agencies, and Association of Metropolitan Water Agencies to author several asset management guidance documents.

Our approach is proven and reproducible. In general, asset management can be implemented using either of two approaches: top-down, or bottom-up. Both focus on assessing risk, where they are associated with not meeting established levels of service, and then identifying mitigation measures to reduce the identified risks. However, the two approaches differ in the level at which the utility begins assessing their assets.



Source: Association of Metropolitan Water Agencies. 2007. Implementing Asset Management-A Practical Guide. Published jointly with the National Association of Clean Water Agencies, and Water Environment Federation)

The bottom-up approach focuses first on collecting detailed data to analyze utility assets. The data collected include detailed characteristics of assets (e.g., age, material, condition, manufacturer, size, and capacity), O&M records, field condition assessments, performance analysis, estimation of remaining useful life, determination of asset replacement costs, and other detailed information (AMWA, 2007). Once collected, data are entered into an asset inventory where data are reviewed, risks assessed, and mitigation measures identified. This method focuses first on the collection of data, which can be a daunting, expensive, and a resource-consuming task for a utility, depending on the number and condition of its assets. It can easily take years to develop a full inventory of assets in a large system. The advantage of the bottom-up approach is that decisions about assets, and the risks associated with assets, are based on detailed and specific data that provide confidence to utility decision making. Collected data can be easily inserted into predictive models. However, a utility could lose focus during the data collection process and become "data rich but information poor" before the benefits are realized from the data analysis (AMWA, 2007).The top-down approach focuses on analysis first, at a system or facility level where institutional knowledge and existing data are readily available.

The top-down approach enables a utility to proactively assess and manage risk based on available information. The assessment can start at a high level and then be further detailed as specific asset information becomes available – supported by the bottom-up approach. Two major advantages of the top-down approach are that results are obtained quickly, and the process is flexible. This approach provides immediate benefits, yielding the following results:

- Assuring that a utility addresses its highest risk assets
- Identifying solutions to reduce risk
- Focusing resources to the highest risk assets that do not satisfy the established levels of service

The best overall asset management approach is to use a combination of the top-down and bottom-up methods.

The best overall asset management approach is to use a combination of the top-down and bottom-up methods. This combined approach is standard to our risk-based condition assessment process and is readily applicable to the City. Our team will conduct an initial screening based on our familiarity of your facilities, with confirmation provided by City staff. This will allow us to focus your condition assessment program on highest risk facilities first. It also saves staff time as we suggest an option to visit facilities once rather than twice for data collection and condition assessment. While the current condition of an asset is widely accepted as the primary indicator

of its likelihood of failure (LoF), there are additional risk factors specific the City's assets that can more accurately help define the optimal rehabilitation or replacement strategy and timeline. Applying the concept of relative risk allows for fact-based, repeatable and defensible decisions for the maintenance, rehabilitation, and replacement of infrastructure assets.

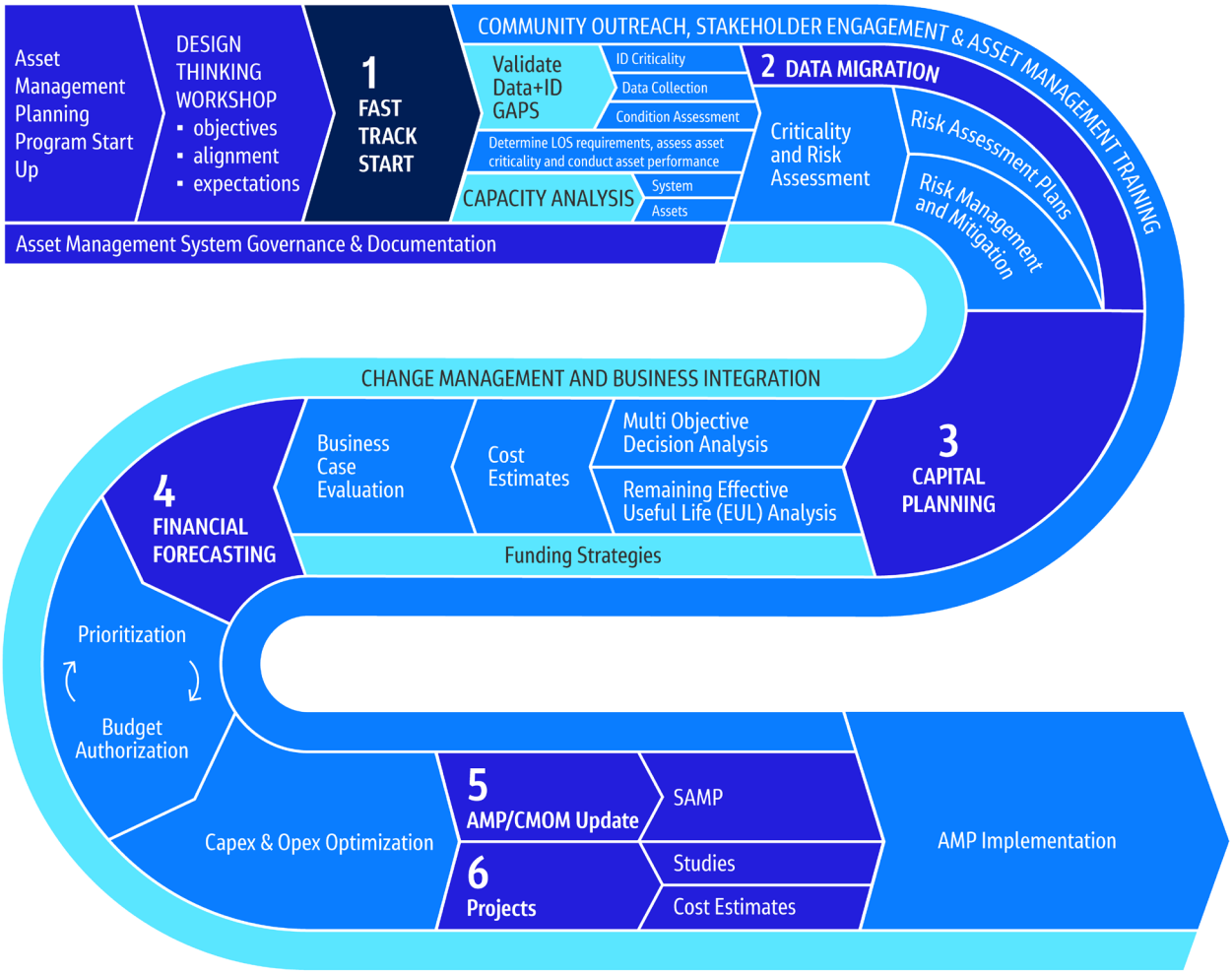
Jacobs has provided leadership both globally and domestically in utility management in variety of areas, including asset management, maintenance management, and financial management. Our work has included not only enhancement of multiple GIS platforms, but also asset management programs and performance metrics that use prudent industry practice. We bring a proven track-record of asset management programs for more than 60 municipal clients across the U.S., and significantly more projects of asset management, condition assessment, and risk assessment.

Implementing an asset management system (AMS) that conforms to combined good practice during the development of the City of Hollywood's more immediate CIP requirements will strengthen the City's financial sustainability and infrastructure resilience. Asset management tools and software programs use optimization and decision science to identify high-risks, select projects, optimize funding, prioritize projects throughout the City's asset-portfolio, and facilitate decision-making. One direct benefit is that asset management enables the City to make proactive decisions rather than reacting to the next emergency or system deficiency.

While strengthening the City's financial sustainability and infrastructure resilience, the Asset Management Planning Pathway will also include a FAST TRACK – so City commissioners will see results quickly. The FAST TRACK process, shown in the pathway below, was developed to put the City of Hollywood in the driver's seat, giving staff the strategic advice, technical support, and AMS framework, you require to gain endorsement for key decisions.

Through a combination of experience and resources, we will provide tailored asset management services for the City of Hollywood that meet your specific needs.

Jacobs' Asset Management Planning Pathway



Asset Management Training

The Institute of Asset Management (IAM) Competences Framework provides guidance of what asset management professionals should be capable of doing, and what they should know and understand. The City of Hollywood is recommended to apply this framework within their AMS business processes to conduct training needs analysis, recruitment, career planning, continuing professional development and workforce management. The framework contains a unified set of competence requirements that apply to all organizations and sectors whose business performance relies on optimizing the delivery and performance of physical assets. Its structure is compatible with other leading competence frameworks and the contents reflect the fundamentals of ISO 55000, and will meet the requirements of ISO 55001.

Jacobs is able to provide a certificate course to City personnel that is recognized by the IAM and allows us to act as proxy between exam candidates and the IAM. Jacobs is an IAM-endorsed assessor and trainer.

City of Fort Lauderdale George T. Lohmeyer WWTP

Asset Management Consulting Services: Since 2020, Jacobs has been supporting the City of Fort Lauderdale as the City's Asset Management Consultant. The work involved the development of an asset registry at the George T. Lohmeyer WWTP and conducting an asset criticality ranking, using a reliable asset prioritization process based on accepted international asset management guidelines known as "Solomon Oldach Asset Prioritization" (SOAP) process. This Jacobs-developed methodology has been successfully implemented at several water and wastewater facilities throughout the United States.

Replacement of the Pure Oxygen System: Jacobs developed a design criteria package and 30% design for the selection of a qualified Design-Build contractor to replace the cryogenic oxygen production system with a vacuum-pressure swing adsorption oxygen production system. Jacobs also provided services during design.

Motor Control Center Replacement and Electrical Upgrades: Jacobs developed a detailed design for the upgrade, rehabilitation, and replacement of many motor control centers (MCCs) that are beyond their useful life, were unreliable, and/or were no longer supported.

Key Staff: Raul Alfaro, Jim Oldach, Randy Boe, and Axel Rivera.
Relevance to the City of Hollywood: These projects are similar in scope, size, and complexity to those planned by the City of Hollywood including; SRWWTP Oxygenation Trains Rehabilitation and SRWWTP South Electrical Service Center Rehabilitation.

Grant Funding Assistance

As one of the largest financial management consultants in the nation, we have found that there are several options available for funding CIPs, each with distinct advantages and disadvantages. An example of a funding strategy might include:

- EPA Water Infrastructure Finance and Innovation Act (WIFIA) accelerating investments in water infrastructure by providing long-term, low-cost supplemental loans for significant projects.
- Federal Emergency Management Agency (FEMA) grant funding is available for pre- and post-emergency or disaster related projects.
- Infrastructure Investment and Jobs Act (IIJA) funding.
- Loans and grants for projects that qualify for funding under clean water and safe drinking water revolving loan programs (SRF) and other funding programs. The Clean Water Management Trust Fund, the Wetlands Restoration Program and Alternative Water Supply are good examples of funding that can support the City.
- Bonds and other municipal borrowing instruments for long-term capital projects that will provide benefits to generations of residents. Over the past 15 years, numerous counties and municipalities throughout Florida have approved bond issues valued at more than $6B to retain open space, protect environmentally sensitive lands, provide water and wastewater infrastructure, and remove development pressures from agricultural lands. Opportunities may exist to use some bond funds to accomplish multiple objectives, including the CIP.

The table below lists some of our most applicable past state, federal, and capital program funding assistance. Additionally, we have experience preparing applications for and ensuring project compliance with USACE, FDEP, EDC, EPA, ERM, FDOT, SFWMD, SRF, USDA, and FEMA. Should you require examples of programs not shown in the table below, we can provide them upon request.

Jacobs' Funding Assistance Experience

Client Name	Agency	Grant Amount
City of Daytona Beach	FDEP/SJRWMD	$4,000,000
City of North Miami	FDEP-SRF	$30,000,000
Hillsborough Beach	FDEP-SRF	$3,000,000
City of Boynton Beach	HUD-CDBGMIT	$2,000,000
San Mateo County, CA	EPA-WIFIA	$554,000,000
Salt Lake City, UT	EPA-WIFIA	$250,000,000
Thornton, CO	EPA-WIFIA	$200,000,000
City of North Miami Beach	EPA-WIFIA	$60,000,000
City of Fort Lauderdale[(1)]	FDEP-SRF	$104,000,000
Fort Pierce	FDEP/SFWMD	$1,540,000
Bonita Springs Utilities	SFWMD	$800,000
Ava Maria Utility Co.	SFWMD	$480,000
City of Fort Myers	SFWMD	$400,000
Manatee County Port Authority	FDOT/FBC	$600,000
City of Cocoa/St. Johns River Water Management District	EPA-STAG	$4,000,000
FKAA	SFWMD	$700,000
City of West Palm Beach	FCT	$1,000,000
City of West Palm Beach	SFWMD	$600,000
City of Boynton Beach	SFWMD	$1,022,800
Blountstown	CDBG	$1,520,000
Blountstown	RUS	$2,900,000

Client Name	Agency	Grant Amount
Jackson County	RUS	$6,850,000
Jefferson County	CDBG	$2,300,000
Town of Sneads	RUS	$4,500,000
Town of Jennings	CDBG	$500,000
Chiefland	CDBG	$750,000

Note: (1) Ten loans and grants secured during WaterWorks program.

Jacobs holds the Public Assistance Technical Assistance Contract IV (PA TAC IV) providing continued support of the U.S. DHS's FEMA mission.

Under the previous PA TAC III FEMA contract, Jacobs was awarded more than $500M to provide public assistance, recovery operations, construction and project management and technical services, including recovery support to Puerto Rico in response to Hurricane Maria. Additionally, we provide support to FEMA under the Logistics Housing Operations Unit Installation, Maintenance and Deactivation (LOGHOUSE) contract and the Individual Assistance Services Contract. Under LOGHOUSE, we provide temporary housing installation and maintenance recovery services and overall project management to house families displaced by Hurricane Michael in the Florida Panhandle region.

Jacobs supports FEMA post-disaster response and recovery across 17 US states and territories by providing technical assistance for FEMA disaster-related operations. FEMA uses the Public Assistance Technical Assistance Contract (PA TAC) to obtain construction managers, construction inspectors, project managers, PA TAC coordinators, and other related professional services to assist state and local municipalities in developing grant applications for federal public assistance funding to repair infrastructure damaged by natural or man-made disasters (roads, bridges, hospitals, schools, water treatment facilities, etc.). The PA TAC supports communities' recovery from major disasters by providing them with grant assistance for debris removal, life-saving emergency protective measures, and restoring public infrastructure. Local governments, states, tribes, territories, and certain private nonprofit organizations are eligible to apply. Public Assistance is FEMA's largest grant program. Since 2017, FEMA has provided over $5B through Public Assistance grants to help communities clear debris and rebuild roads, schools, libraries, and other public facilities.

TAB F

Knowledge of the Site and Local Conditions

Tab F | Knowledge of the Site and Local Conditions

The team we have selected to perform under this contract has successfully completed numerous projects together. This recent, relevant experience will allow our team to bring to the City the technical expertise gained through similar work, as well as direct knowledge of implementable solutions to issues.

Jacobs has a long history of working in Broward and surrounding counties. We understand the local geography and are very familiar with Florida, Broward County, and City requirements. We stay abreast of Florida laws and have insight and knowledge to futureproof what we see coming from state and federal agencies.

Working in local areas affected by low elevation lines, points and as well as areas prone to hurricanes wind forces

As a premier sponsor of the Southeast Florida Regional Climate Change Compact, we understand the value of becoming resilient and the infrastructure challenges that the City of Hollywood is currently facing as a result of sea level rise, King Tide events, low elevations, storm surge, and backflow. We have extensive experience working in areas affected by low elevation as well as areas prone to hurricane wind forces.

At Jacobs We Have

100+	resilience technical experts in Florida
50+	years of integrated resiliency solutions across markets
1,000+	resiliency-related projects in our portfolio
200+	clients worldwide, focused on the planning response to the full range of climate hazards

Along with beautiful, sunny days, the Sunshine State is home to all types of weather – from hurricanes and heavy rain to extreme heat. Extreme weather events are growing in Florida, with an increasing number of storms and stronger hurricanes that last longer. Other extremes are wreaking havoc too, such as drought and wildfire, water scarcity, and sea level rise. These natural extremes are taking their toll on aging infrastructure and residential housing. And beyond weather-related issues, added threats lurk too, such as cyberattacks and physical security threats. It's time to act so you're safeguarded. It's time for resilience.

Resilience is the ability to survive, recover, adapt, and thrive from chronic stresses and acute shocks.

Becoming resilient means minimizing the impacts of climate change, extreme weather, natural disasters, urbanization and aging infrastructure, supply chain, regulations, and health and cybersecurity threats so public entities and private citizens are safe and secure. It also means increasing the capacity of individuals, communities, institutions, businesses and systems to continue to adapt and grow — no matter what adversity they face. Resilience is an attribute of a safer world, and it requires planning and adapting ahead of potential hazards.

As global supply and demand for water intensifies, solving the world's most complex water challenges demands different thinking. We tackle the most complex water challenges by providing innovation, technical, and delivery solutions using best practices of collaborative delivery, backed by 26 Design-Build Institute of America (DBIA) awards received in the last two decades.

Jacobs is committed to supporting the City's vision *"to be a model of sustainability by recognizing the environment as an asset"* by incorporating resiliency into everything we do in order to strengthen and safeguard communities and assets, save money, enhance sustainability, fuel growth, and secure a more vibrant, prosperous future for generations to come.

System Resilience Plan for JEA's Water, Wastewater Systems, Jacksonville, FL

JEA serves more than 1.5 million people across a 900-square-mile area spanning four counties in Jacksonville. Jacksonville's long shorelines and low-lying communities increase the threat of flooding with sea level rise and storm surge as a result of hurricanes. JEA retained Jacobs to develop a comprehensive Resilience Plan that serves as an action-oriented guide to position JEA for long-term reliability and resilience for its more than 1,400 water systems through identification of flood risk, development and prioritization of mitigation strategies, and the development of updated design standards to account for climate change for future capital projects.

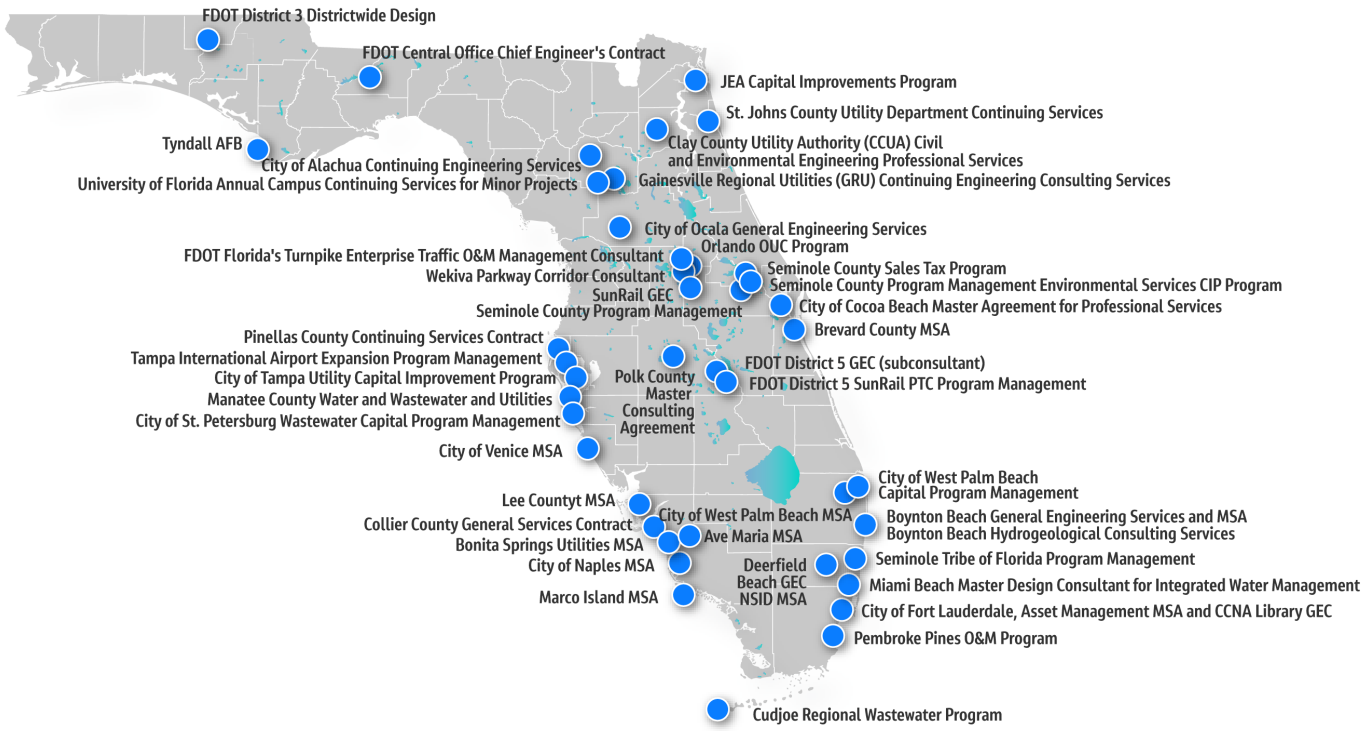
Miami-Dade County Ocean Outfall Legislation Program, Miami, FL

Miami-Dade Water and Sewer Department (WASD) selected Jacobs to deliver its ocean outfall legislation Program, including a significant climate resiliency component. The program involves wastewater system master planning, design, procurement, construction and commissioning of more than 60 major capital projects to significantly reduce wastewater discharges to the ocean by 2025. To design facilities for longevity and low O&M costs, Jacobs evaluated the impacts of extreme weather and sea level rise on WASD's wastewater assets and developed a climate resiliency framework.

Knowledge of Local Subcontractors and Suppliers

Our vast experience working for various Florida cities and utilities has allowed us to assemble an experienced team to provide reliable and responsive services to the City. We have a long history of delivering successful projects in the state of Florida and in Broward County using our knowledge of local, responsive, and experienced subcontractors. See map (below) for select Jacobs professional services contracts.

Jacobs' Professional Services Contracts



Experience with Local Permitting Agencies, Procedures, and Testing Protocols

Understanding the implications of emerging regulations is a critical component of a successful regulatory approach. Having access to Jacobs staff who participate in state and national legislative committees and who are heavily involved in regulatory decision-making, will help the City keep current on emerging regulations, or interpretations of existing regulations in a changing political environment, and will enable the team to develop forward-thinking, proactive regulatory strategies. Because design and construction of forthcoming projects will be occurring while new rules are being developed and promulgated, it is critical that the City stay ahead of regulations so that new facilities are in compliance when they are brought online.

Jacobs has completed hundreds of Florida Department of Environmental Protection (FDEP) construction permits, most with minimal requests for additional information keeping your project on schedule. We have developed a strong rapport with the Florida Department of Health (DOH), SFWMD, FDEP, USACE, U.S. EPA, and FDOT, which will help us expedite the permitting of any City projects. Engaging permitting agencies early during a project's planning and design process, establishing a respected relationship with regulatory staff, and understanding what regulatory reviewers need to see in formal submitted applications can be the key ingredients toward quickly gaining permits.

We also recognize that assisting or representing a client at meetings with regulatory or other agencies is essential for obtaining permits. For this reason, our project team members are trained in formal presentation and public relations techniques. They have participated in public workshops and hearings concerning state rule amendments and permit

applications and in technical advisory committee meetings. Our team successfully delivered various engineering studies, such as the recently completed Master Plan for the City of Melbourne surface water and brackish groundwater RO WTPs, and the Variable Total Dissolved Solids (TDS) study for Collier County's North Regional WTP.

Jacobs successfully obtained water use permits for many municipal clients in South Florida such as the Florida Keys Aqueduct Authority (FKAA), where we secured a 20-year allocation of water from the Biscayne Aquifer.

We have offered clients a full range of compliance and permitting services for the past 70+ years. Applying innovative, creative, and value-based approaches is integral to every project we work on. We have a successful track record assisting South Florida and the City to develop solutions and provide compliant, sustainable solutions to environmental challenges, we clearly have the capacity, availability and commitment to serve the City under this contract.

Experience Working in Projects with Complex Logistical Challenges

Our proposed Jacobs team has had extensive experience successfully designing and implementing improvements and modifications to existing, operating, and occupied treatment facilities. Our clients rely on our focus on quality which translates, not just into minimized rework and reduced schedule overruns, but also providing designs with a strong focus on safety and safety compliance. Our commitment to safety is ingrained in our values; *"**We do things right.** We always act with integrity – taking responsibility for our work, caring for our people and staying focused on safety and sustainability. We make investments in our clients, people and communities, so we can grow together."*

Our team has completed numerous complex planning and design projects with logistical challenges and have the required qualifications, experience, and expertise to provide planning and engineering services with a focus on public health and safety. In all alternatives evaluations that Jacobs conducts, safety of plant operators and public health are a key focus.

Commitment to Safety

At Jacobs, safety is an important aspect of our culture. For every project, in design or in construction, we develop a Health & Safety Plan. Each progress meeting, we start with a Safety Moment. And in construction, we require every sub-contractor and vendor to adhere to our H&S procedures, starting with a H&S training at the first site visit. We form a commitment at every level of our organization which is demonstrated by achieving safety statistics that are well below the industry standard. Our Experience Modification Rate (EMR) for 2021 was 0.48, less than half of the industry standard.

Jacobs Experience with Logistical Challenges. The city's capital program was driven by a Consent Order and risks at the city's WTP that had to be addressed to protect public health and safety while long-term solutions were being evaluated. The **project complexity was greatly increased due to the need to maintain a surface water supply during drought, maintain full plant operations during construction**, and to automate the 47-mgd plant without process interruptions. During the planning phase of the work, **Jacobs coordinated information with 8 consultants, 6 contractors, 3 regulatory agencies, 4 city departments, Citizen's Water Task Force, City mayor, and city commission.** We also provided operational support to the city's water system throughout planning, design, and construction of these improvements. The program was completed in 2017.

TAB G

References - Vendor Reference Forms

Tab G | References – Vendor Reference Forms

Project descriptions for each referenced project can be found in Tab C | Firm Qualifications and Experience

City of Fort Lauderdale Asset Management

Fort Lauderdale, FL

VENDOR REFERENCE FORM

City of Hollywood Solicitation #:	RFQ 041-23-JJ		
Reference for:	Jacobs Engineering Group Inc.		
Organization/Firm Name providing reference:	1/24/23 City of Fort Lauderdale		
Organization/Firm Contact Name:	Elkin Diaz, MBA, PE, PMP, IAM	**Title:**	Senior Project Manager
Email:	EDiaz@fortlauderdale.gov	**Phone:**	(954) 828-6539
Name of Referenced Project:	Asset Management TO 1 & TO 2	**Contract No:**	12300-296
Date Services were provided:	January 13, 2022 - Ongoing)	**Project Amount:**	$599,701 (Combined Total of TO 1 & TO 2)
Referenced Vendor's role in Project:	☒ **Prime Vendor**	☐	**Subcontractor/ Subconsultant**
Would you use the Vendor again?	☒ **Yes**	☐	**No.** Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
TO 1. George T. Lohmeyer WWTP Asset Registry Development. Create the first ever comprehensive asset register of the main City's wastewater treatment plant to include all wastewater, mechanical, and electrical assets in a ESRI File Geodatabase, to be managed by the City's Enterprise Asset management System – Cityworks. (See additional sheet for more information)

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	☐	☐	☒	☐
b. Accuracy	☐	☐	☒	☐
c. Deliverables	☐	☐	☒	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	☒	☐
b. Professionalism	☐	☐	☒	☐
c. Staff turnover	☐	☐	☒	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	☒	☐
b. Deliverables	☐	☐	☒	☐

Additional Comments (provide additional sheet if necessary): JACOBS has been very successful on getting subtasks completed on time for both projects and being cautious of the projects' budget and risks. They have anticipated challenges in a timely manner and provide solutions as well as opportunities on improving O&M processes.(See add. sheet for more information)

****THIS SECTION FOR CITY USE ONLY****						
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Verified by:	**Name:**				**Title:**	
	Department:				**Date:**	

VENDOR REFERENCE FORM

ADDITIONAL SHEET

Description of services provided by Vendor (provide additional sheet if necessary):
TO 2. Asset Inventory and Condition Assessment Create the first ever asset register of the City's roadway street swales, concrete curbing, concrete sidewalks, and alleyways with the use of a truck mounted mobile mapping solution Trimble MX9. A total of 544 miles of City roads, 143 miles of County roads, and 28 miles of alleyways will be mapped, and their data collected using Mobile LIDAR, so the roadway assets can be managed more efficiently in the near future.

Additional Comments (provide additional sheet if necessary):
JACOBS has been very successful on getting subtasks completed on time for both projects and being cautious of the projects' budget and risks. They have anticipated challenges in a timely manner and provided solutions as well as opportunities on improving O&M processes. They have submitted invoices as per City's instructions with complete data and accuracy. It has been very productive to work with JACOBS in these two projects as we have learned from each other on different areas of asset management best practices, including master planning and operational resilience.

ELAINE DIAZ, PE
1/24/23

J.A. Buckley Surface Water Treatment Plant Upgrades
Melbourne, FL

VENDOR REFERENCE FORM

City of Hollywood Solicitation #:	RFQ-041-23-JJ		
Reference for:	Jacobs Engineering Group Inc.		
Organization/Firm Name providing reference:	City of Melbourne, FL	Jennifer Spagnoli Digitally signed by Jennifer Spagnoli Date: 2023.02.09 15:46:56 -05'00'	
Organization/Firm Contact Name:	Jennifer Spagnoli, PE	Title:	Acting Public Works Director
Email:	Jennifer.Spagnoli@mlbfl.org	Phone:	321-608-5000
Name of Referenced Project:	TO#1 - Media Filter Improvements	Contract No:	D3511500, PO 21001397 - 00
Date Services were provided:	April 2022 - Feb 2023	Project Amount:	$1,494,000
Referenced Vendor's role in Project:	X Prime Vendor	☐	Subcontractor/ Subconsultant
Would you use the Vendor again?	X Yes	☐	No. Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
Professional services for the design, permitting and bidding of the 12 mgd capacity expansion of the media filters at the City's surface water treatment plant. The work included treatability testing to confirm the design criteria of the new media filters. The design is 100% completed as off February 8, 2023.

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	☐	☐	X	☐
b. Accuracy	☐	☐	X	☐
c. Deliverables	☐	☐	X	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	X	☐
b. Professionalism	☐	☐	X	☐
c. Staff turnover	☐	☐	X	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	X	☐
b. Deliverables	☐	☐	X	☐

Additional Comments (provide additional sheet if necessary):

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Verified by:	Name:				Title:	
	Department:				Date:	

Gainesville Regional Utilities, Continuing Engineering Services under CCNA

Gainesville, FL

VENDOR REFERENCE FORM

City of Hollywood Solicitation #: RFQ 041-23-JJ
Reference for: Jacobs Engineering Group Inc.

Organization/Firm Name providing reference: Gainesville Regional Utilities
Organization/Firm Contact Name: Rachel Lockhart, PE
Title: Supervising Engineer
Email: lockhartra@gru.com
Phone: 352-393-1618
Name of Referenced Project: Continuing Services
Contract No: 2018-049-AR
Date Services were provided: 12/2018-9/2023
Project Amount: Various
Referenced Vendor's role in Project: ☒ Prime Vendor ☐ Subcontractor/ Subconsultant
Would you use the Vendor again? ☒ Yes ☐ No. Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
Jacobs Engineering has provided continuing engineering services under CCNA for approximately 5 years on projects such as pipeline replacements; treatment plant equipment replacements, and other misc engineering support

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	☐	☐	☒	☐
b. Accuracy	☐	☐	☒	☐
c. Deliverables	☐	☐	☒	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	☒	☐
b. Professionalism	☐	☐	☒	☐
c. Staff turnover	☐	☐	☒	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	☒	☐
b. Deliverables	☐	☐	☒	☐

Additional Comments (provide additional sheet if necessary):
Jacobs has been a trusted partner from our continuing services contract. Their expertise and professionalism are important to accomplishing our work

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Verified by:	Name:				Title:	
	Department:				Date:	

VENDOR REFERENCE FORM

ADDITIONAL SHEET

Description of services provided by Vendor (provide additional sheet if necessary):
Most recent projects include clarifier rehabs, electrical building expansions and upgrades, headworks pipeline replacement.

Additional Comments (provide additional sheet if necessary):

JEA, Blacks Ford WRF Phase 4 Expansion
Jacksonville, FL

VENDOR REFERENCE FORM

City of Hollywood Solicitation #:	RFQ 041-23-JJ		
Reference for:	Jacobs Engineering Group Inc.		
Organization/Firm Name providing reference:	JEA		
Organization/Firm Contact Name:	John Sgambettera	Title:	Director Wastewater and Reuse Treatment
Email:	sgamjj@jea.com	Phone:	(904) 665-7916
Name of Referenced Project:	Blacks Ford Phase 4 Expansion	Contract No:	80027777
Date Services were provided:	March 1, 2016	Project Amount:	
Referenced Vendor's role in Project:	☒ Prime Vendor	☐	Subcontractor/ Subconsultant
Would you use the Vendor again?	☒ Yes	☐	No. Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
Jacobs Engineering staff was very experienced and responsive. They helped keep the project on time and within budget. Provided quick turnaround on submittals and held contractors accountable.

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	☐	☐	☒	☐
b. Accuracy	☐	☐	☒	☐
c. Deliverables	☐	☐	☒	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	☒	☐
b. Professionalism	☐	☐	☒	☐
c. Staff turnover	☐	☐	☒	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	☒	☐
b. Deliverables	☐	☐	☒	☐

Additional Comments (provide additional sheet if necessary):

****THIS SECTION FOR CITY USE ONLY****						
Verified via:	Email:	☐	Verbal:	☐	Mail:	☐
Verified by:	Name:				Title:	
	Department:				Date:	

Miami Dade Ocean Outfall Legislation (OOL)

Miami-Dade County, FL

VENDOR REFERENCE FORM

City of Hollywood Solicitation #: RFQ 041-23-JJ
Reference for: Jacobs Engineering Group Inc.

Organization/Firm Name providing reference: Miami-Dade Water and Sewer
Organization/Firm Contact Name: James Ferguson
Title: Assistant Director
Email: james.ferguson@miamidade.gov
Phone: 305-613-2249
Name of Referenced Project: Ocean Outfall Legislation
Contract No: 14CH2M006
Date Services were provided: Program Management Services
Project Amount: $139,394,748

Referenced Vendor's role in Project: ☒ Prime Vendor ☐ Subcontractor/ Subconsultant
Would you use the Vendor again? ☐ Yes ☐ No. Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
Owner representative services, including program management, project management, and construction management services for a multi billion dollar program to eliminate the normal use of ocean outfalls for treated wastewater disposal.

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	☐	☐	☐	☐
b. Accuracy	☐	☐	☐	☐
c. Deliverables	☐	☐	☐	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	☐	☐
b. Professionalism	☐	☐	☐	☐
c. Staff turnover	☐	☐	☐	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	☐	☐
b. Deliverables	☐	☐	☐	☐

See attached

Additional Comments (provide additional sheet if necessary):
See attached official Miami-Dade County evaluation for one of many tasks performed under this professional services agreement.

****THIS SECTION FOR CITY USE ONLY****						
Verified via:	Email:	☐	Verbal:	☐	Mail:	☐
Verified by:	Name:				Title:	
	Department:				Date:	

Evaluation Refreshers: Do's and Don'ts | Process and Procedures | Q & A's | Help

MIAMI-DADE COUNTY, FLORIDA

Capital Improvements Information System

Water and Sewer

Consultant Evaluation

Evaluation Type: Standard Evaluation

Contract: E13-WASD-11 Work Order No: 51 - $11,221,401.00

Contract Name: Owner's Representative for Professional Engineering Services relating to the State of Florida's Ocean Outfall Legislation and Miami-Dade County's Wastewater System

Site Project Name: PMO Services for OOL from October 2020 to September 2021

Site Location: Various

Award Amount: $139,394,748.00 Contact: James Ferguson 786-268-5775

Contract Type: PSA

Contractor / Consultant: CH2M Hill, Inc. FEIN: 590918189

PROJECT TECHNICAL CERTIFICATION REQUIREMENTS:

TYPE	CODE	DESCRIPTION
Prime	6.01	WATER AND SANITARY SEWER SYSTEMS - WATER DISTRIBUTION AND SANITARY SEWAGE COLLECTION AND TRANSMISSION SYSTEMS
Prime	6.02	WATER AND SANITARY SEWER SYSTEMS - WATER AND SANITARY SEWAGE PUMPING FACILITIES
Prime	6.03	WATER AND SANITARY SEWER SYSTEMS - WATER AND SANITARY SEWAGE TREATMENT PLANTS
Prime	17.00	ENGINEERING CONSTRUCTION MANAGEMENT
Other	9.01	SOILS, FOUNDATIONS AND MATERIALS TESTING - DRILLING, SUBSURFACE INVESTIGATIONS AND SEISMOGRAPHIC SERVICES
Other	9.02	SOILS, FOUNDATIONS AND MATERIALS TESTING - GEOTECHNICAL AND MATERIALS ENGINEERING SERVICES
Other	9.04	SOILS, FOUNDATIONS AND MATERIALS TESTING - NON-DESTRUCTIVE TESTING AND INSPECTIONS
Other	10.05	ENVIRONMENTAL ENGINEERING - CONTAMINATION ASSESSMENT AND MONITORING
Other	11.00	GENERAL STRUCTURAL ENGINEERING
Other	12.00	GENERAL MECHANICAL ENGINEERING
Other	13.00	GENERAL ELECTRICAL ENGINEERING
Other	14.00	ARCHITECTURE
Other	15.01	SURVEYING AND MAPPING - LAND SURVEYING
Other	16.00	GENERAL CIVIL ENGINEERING
Other	18.00	ARCHITECTURAL CONSTRUCTION MANAGEMENT
Other	19.06	VALUE ANALYSIS AND LIFE-CYCLE COSTING - WATER AND SANITARY SYSTEMS

Evaluator ID: JFERG Date: 12/17/2021 Period: Completion of study or design

Rating *

	4	3	2	1	N/A	Criteria
1-	○	◉	○	○	○	Schedule - Quality of schedule & adherence to schedule resulting in timeliness and minimizing delay to the owner and community.
2-	○	◉	○	○	○	Cost effectiveness & efficiency - Budget compliance & value of work.
3-	○	○	○	○	◉	Vision - Design - Concepts or adherence to criteria.
4-	◉	○	○	○	○	Cooperation - Teamwork & relationship with owner, subs and suppliers.
5-	◉	○	○	○	○	Coordination - Ability to organize, schedule and complete tasks in adherence to the schedule.
6-	◉	○	○	○	○	Accuracy & Technical Skills - Cost estimating, scheduling, shop and other drawings, plans, manuals, project documentation and conflict resolution.
7-	◉	○	○	○	○	Completeness - Compliance with contract documents, permits, Codes & standards.
8-	◉	○	○	○	○	Responsiveness - Timely, clear & concise responses to owner comments and correspondence.
9-	◉	○	○	○	○	Commitment - Intangibles & contribution to project success.
10-	◉	○	○	○	○	Personnel - Quality and dedication of project staff.
11-	◉	○	○	○	○	Management - Leadership ability.
12-	◉	○	○	○	○	Quality - Work performed correctly the first time.

Overall Performance Average: 3.8

Documentation that supports this evaluation and Contractor's/Consultant's comments can be obtained by contacting:

James Ferguson at phone# 786-552-8756

Evaluation Reviewed by: Supervisor ☐ Division Chief ☐ Assistant Director ☑ Director ☐

Reviewer Name: James Ferguson Reviewer Signature: _____

The method of delivery of this evaluation to contractor/consultant: Certified Mail ☐ EMail ☐ Fax ☑ Hand ☐

(Unresponsive Performance by contractor/consultant requires 2 delivery methods, one MUST be Certified Mail.)

Evaluation delivered to: Jacobs/ Evelio Agustin

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* Rating Key

4 Superior performance - Exemplary quality, no intervention required - project completed on time or early at or below budget with no change orders or amendments other than owner requested changes.

3 Satisfactory performance - Minor errors noted, addressed with timely corrective action. No serious errors noted or corrective action needed.

2 Guarded performance Errors and Omissions documented in writing with timely corrective action.

1 Unresponsive performance documented in writing without timely corrective action.

N/A. No Information

12/17/2021 - Completion of study or design

Refresh | Save/Update | EMail James Ferguson | EMail James Ferguson | Print | Delete

Exit

TAB H

Sub Consultants Information

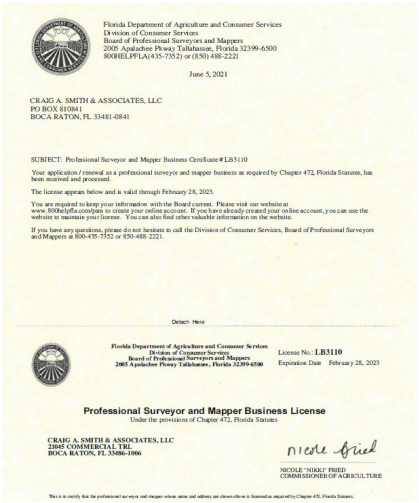
Tab H | Sub Consultants Information

Although our firm can provide experts from essentially all of the key technical disciplines listed in your RFQ, Jacobs has elected to augment its in-house staff capabilities and experience with selected specialists from three strategically-selected subconsultant team members: for survey - Craig A. Smith & Associates (CAS); geotech - RADISE International, L.C. (RADISE) (M/WBE); and Launch! Consulting, Inc. (Launch!) for emergency preparedness.

We purposefully selected our team to best meet City needs. Based on their capabilities, location, and previous success working with Jacobs, these team members offer special capabilities and expertise that will be valuable as surveys and field work are completed and as we move into implementation. Together, our team offers a culture of safety, communication, collaboration, innovation, and a spirit of commitment to the City of Hollywood.

Craig A. Smith & Associates
CIVIL ENGINEERS | SURVEYORS | UTILITY LOCATORS

Since 1980, **Craig A. Smith and Associates (CAS)** is a Florida firm licensed for the practice of professional surveying and mapping services. CAS retains numerous Consultant Competitive Negotiation Act (CCNA) contracts that include surveying for a number of municipal clients throughout South Florida, including the City of Ft. Lauderdale and other municipal clients in Broward County. Services under these contracts include route/engineering surveys, boundary surveys, sketch and legal descriptions for various easements (i.e. utilities, roadway, ingress/egress, canals, FPL, telecommunications, etc.) preparation of property surveys construction stake out, surveying services for as-built drawing preparation for the construction of various utility (water, wastewater, reclaimed water, etc.), roadway and drainage improvement projects including subsurface utility engineering along with other miscellaneous surveying services such as title searches and elevation certificates. CAS's survey crews have performed surveying services for thousands of miles of water utility distribution, wastewater collection system and drainage improvement projects.



Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500
800HELPFLA(435-7352) or (850) 488-2221

June 5, 2021

CRAIG A. SMITH & ASSOCIATES, LLC
PO BOX 810841
BOCA RATON, FL 33481-0841

SUBJECT: Professional Surveyor and Mapper Business Certificate # LB3110

Your application / renewal as a professional surveyor and mapper business as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2023.

You are required to keep your information with the Board current. Please visit our website at www.800helpfla.com/ples to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850-488-2221.

Detach Here

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: LB3110
Expiration Date: February 28, 2023

Professional Surveyor and Mapper Business License
Under the provisions of Chapter 472, Florida Statutes

CRAIG A. SMITH & ASSOCIATES, LLC
2100 COMMERCIAL TRL
BOCA RATON, FL 33486-1006

nicole fried

NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown below is licensed as required by Chapter 472, Florida Statutes.

CAS' survey license.

RADISE INTERNATIONAL

Founded in 1997, **RADISE International, L.C. (RADISE) - W/MBE,** specializes in providing geotechnical engineering, materials testing and inspection services. RADISE has a staff of over 70, including local professional engineers, field and laboratory technicians, geotechnical drillers, inspectors and support staff servicing Broward, Palm Beach, and Miami Dade Counties. For 24 years, RADISE has provided geotechnical engineering, field and lab construction materials testing, inspection and quality control services for projects throughout Florida. With significant experience and a solid background working with the public and private sectors, the firm's work includes continuing service contracts with numerous cities, counties, and school districts throughout south Florida. They work extensively with the SFWMD, FDOT, and USACE, on operations that run 24/7. RADISE has always been a financially sound firm, with a history of no litigation, and a safety-first record of no OSHA lost time

State of Florida
Woman & Minority Business Certification

RADISE International, L.C.

Is certified under the provisions of
287 and 295.187, Florida Statutes, for a period from:
05/18/2021 to 05/18/2023

Jonathan H. Satter, Secretary
Florida Department of Management Services

MANAGEMENT SERVICES

Office of Supplier Diversity
4050 Esplanade Way, Suite 380
Tallahassee, FL 32399
850-487-1082
www.dms.myflorida.com/osd

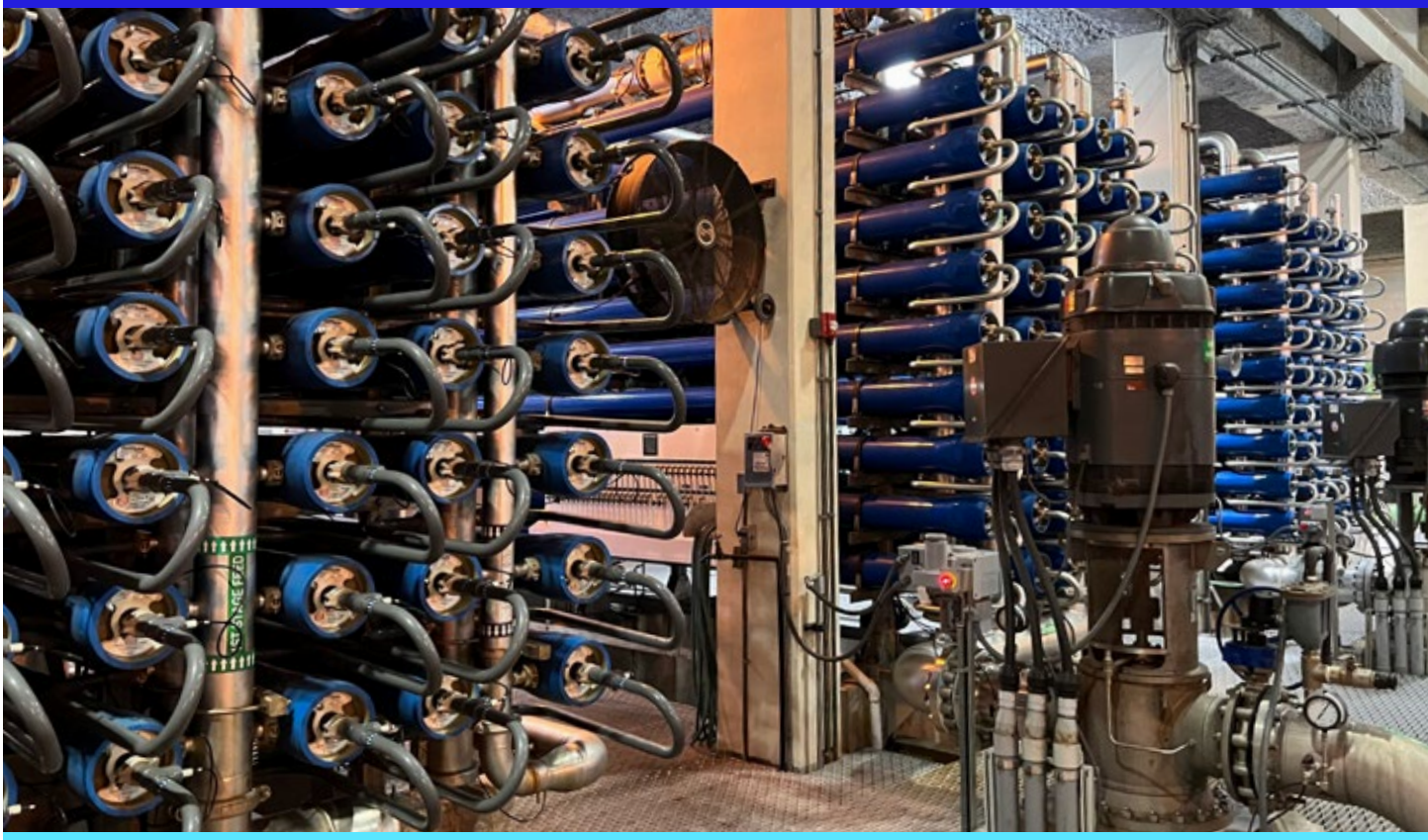
RADISE's W/MBE Certificate.

LAUNCH! CONSULTING

Founded in 2010, **Launch! Consulting, Inc. (Launch!)** is a small, women-owned business employing diverse planning, infrastructure, and cyber security experts highly skilled in risk and resilience work. Through training, team building, facilitated co-creation, and executive coaching, or any aspect of technical planning, they have the experienced staff to help our clients set and reach new goals.

They have worked with similar clients in Florida including Broward County, Miami Dade County, Pinellas County, Cooper City, Hallandale Beach, Village of Wellington, Plantation, Miramar and North Miami.

Launch! Consulting, Inc. is a certified small, micro, women-owned business in the Commonwealth of Virginia.



TAB I

Financial Resources

Tab I | Financial Resources

Financial Summary Statement and Prior or Current Bankruptcy Proceedings

Due to page limitations, we have included select pages from Jacobs 10K below. A complete copy of Jacobs' 10K can be found at https://invest.jacobs.com/overview/default.aspx.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended September 30, 2022
OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from ____ to ____

Commission File No. 1-7463

Jacobs Solutions Inc.

Delaware				95-4081636
(State or other jurisdiction of incorporation or organization)				(IRS Employer identification number)
1999 Bryan Street	**Suite 1200**	**Dallas**	**Texas**	**75201**
(Address of principal executive offices)				(Zip Code)

(214) 583 – 8500
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class		Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Stock	$1 par value	J	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check-mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act: ☒ Yes ☐ No

Indicate by check-mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. ☐ Yes ☒ No

Indicate by check-mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check-mark whether the Registrant: has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). ☒ Yes ☐ No

Indicate by check-mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

JACOBS SOLUTIONS INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands, except share information)

	September 30, 2022	October 1, 2021
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 1,140,479	$ 1,014,249
Receivables and contract assets	3,405,381	3,101,418
Prepaid expenses and other	176,134	176,228
Total current assets	4,721,994	4,291,895
Property, Equipment and Improvements, net	346,676	353,117
Other Noncurrent Assets:		
Goodwill	7,184,658	7,197,000
Intangibles, net	1,394,052	1,565,758
Deferred income tax assets	31,480	103,193
Operating lease right-of-use assets	476,913	650,097
Miscellaneous	504,646	471,549
Total other noncurrent assets	9,591,749	9,987,597
	$ 14,660,419	$ 14,632,609
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Current maturities of long-term debt	$ 50,415	$ 53,456
Accounts payable	966,792	908,441
Accrued liabilities	1,441,762	1,533,559
Operating lease liability	150,171	172,414
Contract liabilities	641,705	542,054
Total current liabilities	3,250,845	3,209,924
Long-term debt	3,357,256	2,839,933
Liabilities relating to defined benefit pension and retirement plans	271,332	418,080
Deferred income tax liabilities	269,077	214,380
Long-term operating lease liability	607,447	758,358
Other deferred liabilities	167,548	559,375
Commitments and Contingencies		
Redeemable Noncontrolling Interests	632,522	657,722
Stockholders' Equity:		
Capital stock:		
Preferred stock, $1 par value, authorized - 1,000,000 shares; issued and outstanding - none	—	—
Common stock, $1 par value, authorized - 240,000,000 shares; issued and outstanding - 127,393,378 shares and 128,892,540 shares as of September 30, 2022 and October 1, 2021, respectively	127,393	128,893
Additional paid-in capital	2,682,009	2,590,012
Retained earnings	4,225,784	4,015,578
Accumulated other comprehensive loss	(975,130)	(794,442)
Total Jacobs stockholders' equity	6,060,056	5,940,041
Noncontrolling interests	44,336	34,796
Total Group stockholders' equity	6,104,392	5,974,837
	$ 14,660,419	$ 14,632,609

See the accompanying Notes to Consolidated Financial Statements.

JACOBS SOLUTIONS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EARNINGS
For the Fiscal Years Ended September 30, 2022, October 1, 2021 and October 2, 2020
(In thousands, except per share information)

	September 30, 2022	October 1, 2021	October 2, 2020
Revenues	$ 14,922,825	$ 14,092,632	$ 13,566,975
Direct cost of contracts	(11,595,785)	(11,048,860)	(10,980,307)
Gross profit	3,327,040	3,043,772	2,586,668
Selling, general and administrative expenses	(2,409,190)	(2,355,683)	(2,050,695)
Operating Profit	917,850	688,089	535,973
Other Income (Expense):			
Interest income	4,489	3,503	4,729
Interest expense	(100,246)	(72,714)	(62,206)
Miscellaneous income (expense), net	54,254	76,724	(37,293)
Total other (expense) income, net	(41,503)	7,513	(94,770)
Earnings from Continuing Operations Before Taxes	876,347	695,602	441,203
Income Tax Expense for Continuing Operations	(160,903)	(274,781)	(55,320)
Net Earnings of the Group from Continuing Operations	715,444	420,821	385,883
Net (Loss) Earnings of the Group from Discontinued Operations	(32)	10,008	137,984
Net Earnings of the Group	715,412	430,829	523,867
Net Earnings Attributable to Noncontrolling Interests from Continuing Operations	(36,788)	(39,213)	(32,022)
Net (Earnings) Loss Attributable to Redeemable Noncontrolling Interests	(34,585)	85,414	—
Net Earnings Attributable to Jacobs from Continuing Operations	644,071	467,022	353,861
Net Earnings Attributable to Jacobs	$ 644,039	$ 477,030	$ 491,845
Net Earnings Per Share:			
Basic Net Earnings from Continuing Operations Per Share	$ 5.01	$ 3.15	$ 2.69
Basic Net Earnings from Discontinued Operations Per Share	$ —	$ 0.08	$ 1.05
Basic Earnings Per Share	$ 5.01	$ 3.22	$ 3.74
Diluted Net Earnings from Continuing Operations Per Share	$ 4.98	$ 3.12	$ 2.67
Diluted Net Earnings from Discontinued Operations Per Share	$ —	$ 0.08	$ 1.04
Diluted Earnings Per Share	$ 4.98	$ 3.20	$ 3.71

See the accompanying Notes to Consolidated Financial Statements.

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Steven J. Demetriou, certify that:

1. I have reviewed this Annual Report on Form 10-K of Jacobs Solutions Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/Steven J. Demetriou
Steven J. Demetriou
Chief Executive Officer

November 21, 2022

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Kevin C. Berryman, certify that:

1. I have reviewed this Annual Report on Form 10-K of Jacobs Solutions Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/Kevin C. Berryman
Kevin C. Berryman
Chief Financial Officer

November 21, 2022

Bonding Capacity

Not applicable per Question & Answer, #4, January 14, 2023.

TAB J

Legal Proceedings and Performance

Tab J | Legal Proceedings and Performance

Jacobs

Challenging today.
Reinventing tomorrow.

Jacobs Engineering Group Inc.

550 W. Cypress Creek Road, Suite 400
Fort Lauderdale, FL 33309
T +1.954.351.3850
www.jacobs.com

Jacobs Engineering Group Inc., its parent Jacobs Solutions Inc. and its related companies and affiliates form a global organization of over 300 subsidiaries and affiliate companies, in excess of 50,000 employees worldwide and revenues approaching $13 billion that has the technical, financial, and professional qualifications and resources to deliver professional services supporting various projects for RFQ-041-23-JJ. As a publicly traded company, Jacobs Solution's annual reports, SEC filings, and Proxy reports can be found at http://invest.JEG.com/investors/JEG-Filings/default.aspx. From time to time and in the ordinary course of its business, Jacobs is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is Jacobs' practice to defend itself in such actions, many of which are generally subject to insurance, and none of which are expected to have a materially adverse effect on Jacobs' consolidated financial statements. No such litigation is expected to have any impact on Jacobs Engineering Group Inc. potential ability to perform the contract.

From time and time, Jacobs Engineering Group Inc. has been subject to the assessment of certain liquidated damages. Those assessments have been de minimus from a monetary perspective, and have been resolved to the satisfaction of Jacobs Engineering Group Inc's client.

As is common in the industry, Jacobs participates in projects where we may, under certain circumstances, be required to pay financial penalties or liquidated damages, provide additional services and make additional investments to ensure adequate performance and delivery of the contracted services.

1. **Arbitrations:** Jacobs Engineering Group Inc., its parent Jacobs Solutions Inc. and its related companies and affiliates form a global organization of over 300 subsidiaries and affiliate companies, in excess of 50,000 employees worldwide and revenues approaching $13 billion that has the technical, financial, and professional qualifications and resources to deliver professional services supporting various projects for RFQ-041-23. As a publicly traded company, Jacobs Solution's annual reports, SEC filings, and Proxy reports can be found at http://invest.JEG.com/investors/JEG-Filings/default.aspx. From time to time and in the ordinary course of its business, Jacobs is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is Jacobs' practice to defend itself in such actions, many of which are generally subject to insurance, and none of which are expected to have a materially adverse effect on Jacobs' consolidated financial statements. No such litigation is expected to have any impact on Jacobs Engineering Group Inc. potential ability to perform the contract.
2. **Lawsuits:** Jacobs Engineering Group Inc., its parent Jacobs Solutions Inc. and its related companies and affiliates form a global organization of over 300 subsidiaries and affiliate companies, in excess of 50,000 employees worldwide and revenues approaching $13 billion that has the technical, financial, and professional qualifications and resources to deliver professional services supporting various projects for RFQ-041-23. As a publicly traded company, Jacobs Solution's annual reports, SEC filings, and Proxy reports can be found at http://invest.JEG.com/investors/JEG-Filings/default.aspx. From time to time and in the ordinary course of its business, Jacobs is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is Jacobs' practice to defend itself in such actions, many of which are generally subject to insurance, and none of which are expected to have a materially adverse effect on Jacobs' consolidated financial statements. No such litigation is expected to have any impact on Jacobs Engineering Group Inc. potential ability to perform the contract.

3. **Other Proceedings:** Jacobs Engineering Group Inc., its parent Jacobs Solutions Inc. and its related companies and affiliates form a global organization of over 300 subsidiaries and affiliate companies, in excess of 50,000 employees worldwide and revenues approaching $13 billion that has the technical, financial, and professional qualifications and resources to deliver professional services supporting various projects for RFQ-041-23. As a publicly traded company, Jacobs Solution's annual reports, SEC filings, and Proxy reports can be found at http://invest.JEG.com/investors/JEG-Filings/default.aspx. From time to time and in the ordinary course of its business, Jacobs is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is Jacobs' practice to defend itself in such actions, many of which are generally subject to insurance, and none of which are expected to have a materially adverse effect on Jacobs' consolidated financial statements. No such litigation is expected to have any impact on Jacobs Engineering Group Inc. potential ability to perform the contract.
4. **Bankruptcies:** Neither JEG nor its Parent has filed a bankruptcy petition in its name.
5. **Termination:** Jacobs Engineering Group Inc., its parent Jacobs Solutions Inc. and its related companies and affiliates form a global organization of over 300 subsidiaries and affiliate companies, in excess of 50,000 employees worldwide and revenues approaching $13 billion that has the technical, financial, and professional qualifications and resources to deliver professional services supporting various projects for RFQ-041-23. As a publicly traded company, Jacobs Solution's annual reports, SEC filings, and Proxy reports can be found at http://invest.JEG.com/investors/JEG-Filings/default.aspx. From time to time and in the ordinary course of its business, Jacobs is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is Jacobs' practice to defend itself in such actions, many of which are generally subject to insurance, and none of which are expected to have a materially adverse effect on Jacobs' consolidated financial statements. No such litigation is expected to have any impact on Jacobs Engineering Group Inc. potential ability to perform the contract.

   In August 2020, the Procurement Office of the Arizona Department of Transportation ('ADOT') notified Jacobs Engineering Group Inc. ('Jacobs') of its intent to terminate an On-Call Acquisition and Relocation Services contract (CTR049970 and CTR049971) for default due to a disputed real estate brokerage licensing requirement. Jacobs has been in the process with ADOT of correcting this administrative default and to secure rescission of the notice. No task orders had been requested or issued under the subject On-Call.

   Jacobs has delivered world-class engineering services with ADOT for over 30 years. Jacobs continues to win new contracts and deliver many projects with ADOT. This termination is not expected to have a material adverse effect on Jacobs Engineering Group Inc., or upon the business, financial condition, results of operations, or cash flows for the company.
6. **Bonding:** N/A for this solicitation

TAB K

Required Forms

Tab K | Required Forms

Form – Statement of Qualifications Certification

Form 1 – Vendor Reference Form

Form 2 – Hold Harmless and Indemnity Clause

Form 3 – Non-Collusion Affidavit

Form 4 – Sworn Statement Pursuant to Section 287.133(3)(a)

Form 5 – Certifications Regarding Debarments, Suspensions and Other Responsibility Matters

Form 6 – Drug-Free Workplace Program

Form 7 – Solicitation, Giving and Acceptance of Gifts Policy

Form 8 – W-9 (Request for Taxpayer Identification)

Form 9 – Certificate of Insurance (have)

Form 10 – Proof of Sunbiz Registration

Form 11 – Proposal Form

Form – Statement of Qualifications Certification

Note: Uploaded to Opengov portal with proposal form.

STATEMENT OF QUALIFICATION CERTIFICATION

Please Note: All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit http://www.dos.state.fl.us/).

Company: (Legal Registration) Jacobs Engineering Group Inc.

Name/Principal/Project Manager: Ellen B. Patterson, Geographic Operations Manager

Address: 550 W. Cypress Creek Road, Suite 400

City: Fort Lauderdale State: Florida Zip: 33309

Telephone No. 954.351.9256 **FEIN/Tax ID No.** 95-4081636 Email: Ellen.Patterson@Jacobs.com

Does your firm qualify for MBE or WBE status: MBE N/A WBE N/A

ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

Addendum No.	Date Issued	Addendum No.	Date Issued
1	Jan. 24, 2023		
2	Jan. 24, 2023		

VARIANCES: State any variations to specifications, terms and conditions in the space provided below or reference in the space provided below all variances contained on other pages of bid, attachments or bid pages. No variations or exceptions by the Proposer will be deemed to be part of the bid submitted unless such variation or exception is listed and contained within the bid documents and referenced in the space provided below. If no statement is contained in the below space, it is hereby implied that your bid/proposal complies with the full scope of this solicitation. If this section does not apply to your bid/proposal, simply mark N/A. **If submitting your response electronically through OPENGOV you must click the exception link if any variation or exception is taken to the specifications, terms and conditions.** Note: No choice available to choose exception

8.2 Hold Harmless and Indemnity Clause" - Jacobs has reviewed the indemnity language presented in the RFQ and if selected, would like to discuss and negotiate indemnity obligations that are mutually agreed to by both parties.

If selected for Award" - Jacobs has reviewed the terms and conditions in the RFQ and finds them generally acceptable; however, Jacobs is submitting this proposal with the understanding and expectation that the City of Hollywood and Jacobs will have the opportunity to work together to create a mutually acceptable agreement, supplementing and modifying the terms and conditions included with the RFQ, as appropriate for the services to be rendered. And, if selected, Jacobs respectfully requests the ability to clarify certain insurance coverage requirements and indemnity obligations.

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal. I have read all attachments including the specifications and fully understand what is required. By submitting this signed bid/proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, hereby agrees that in no event shall the City's liability for respondent's indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of five hundred dollars ($500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

Ellen B. Patterson
Name (printed)

Ellen B. Patterson
Signature

February 28, 2023
Date:

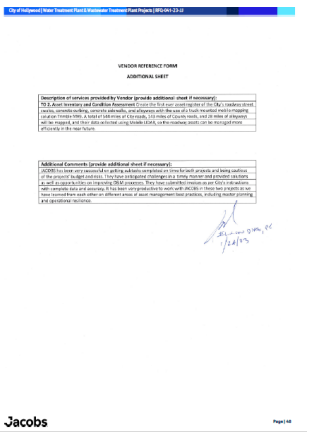
Geographic Operations Manager
Title

Form 1 – Vendor Reference Form

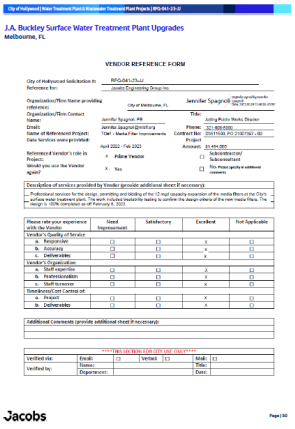
Note: Uploaded to Opengov portal as required.

Original can be found in Tab G | References of this proposal. Thumbnails of upload are included below.

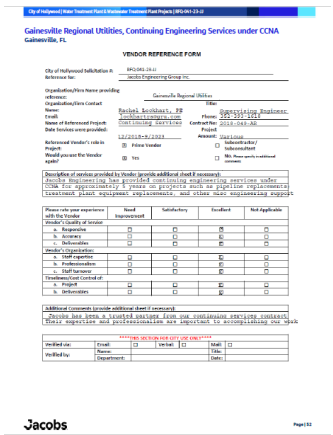

Tab G | References
City of Fort Lauderdale Asset Management
Fort Lauderdale, FL
VENDOR REFERENCE FORM

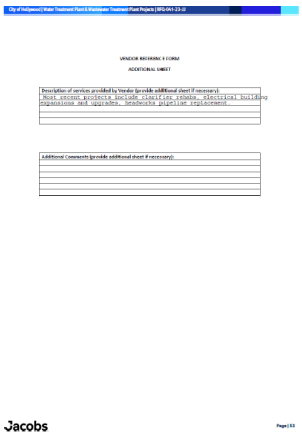

VENDOR REFERENCE FORM
ADDITIONAL SHEET


City of Fort Lauderdale Asset Management
Fort Lauderdale, FL

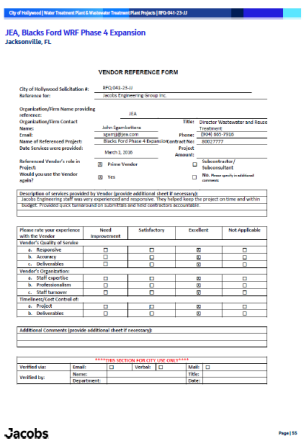

J.A. Buckley Surface Water Treatment Plant Upgrades
Melbourne, FL
VENDOR REFERENCE FORM


J.A. Buckley Surface Water Treatment Plant Upgrades
Melbourne, FL

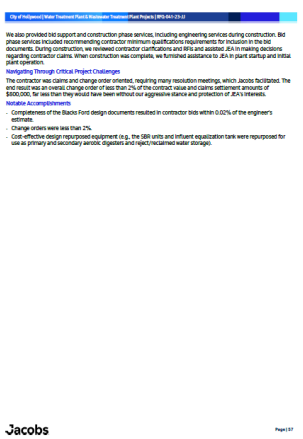

Gainesville Regional Utilities, Continuing Engineering Services under CCNA
Gainesville, FL
VENDOR REFERENCE FORM

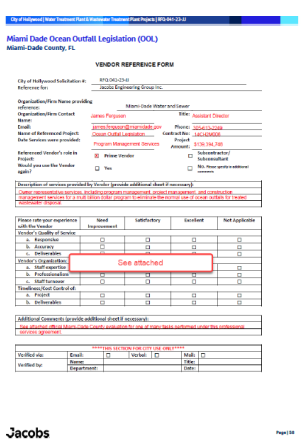

VENDOR REFERENCE FORM
ADDITIONAL SHEET

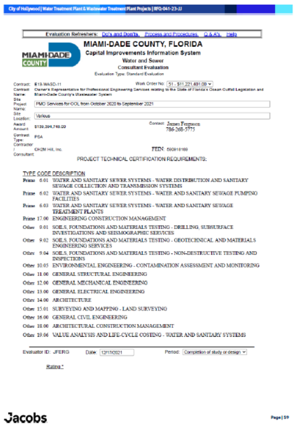

Gainesville Regional Utilities (GRU), Continuing Engineering Services under CCNA
Gainesville, FL


JEA, Blacks Ford WRF Phase 4 Expansion
Jacksonville, FL
VENDOR REFERENCE FORM


JEA, Blacks Ford WRF Phase 4 Expansion
Jacksonville, FL




Miami Dade Ocean Outfall Legislation (OOL)
Miami-Dade County, FL
VENDOR REFERENCE FORM



City of Hollywood | Water Treatment Plant & Wastewater Treatment Plant Projects | RFQ-041-23-JJ

Evaluation Refreshers: Do's and Don'ts, Process and Procedures, Q & A's, Help

MIAMI-DADE COUNTY, FLORIDA
Capital Improvements Information System
Water and Sewer
Consultant Evaluation
Evaluation Type: Standard Evaluation

Contract: E18-WASD-11 | Work Order No: 51 - $11,221,401.00
Contract Name: Owner's Representative for Professional Engineering Services relating to the State of Florida's Ocean Outfall Legislation and Miami-Dade County's Wastewater System
Site Project Name: PMO Services for OOL from October 2020 to September 2021
Site Location: Various
Award Amount: $139,394,746.00 | Contact: James Ferguson 786-268-5775
Contract Type: PSA
Contractor / Consultant: CH2M Hill, Inc. | FEIN: 590918189

PROJECT TECHNICAL CERTIFICATION REQUIREMENTS:

TYPE	CODE	DESCRIPTION
Prime	6.01	WATER AND SANITARY SEWER SYSTEMS - WATER DISTRIBUTION AND SANITARY SEWAGE COLLECTION AND TRANSMISSION SYSTEMS
Prime	6.02	WATER AND SANITARY SEWER SYSTEMS - WATER AND SANITARY SEWAGE PUMPING FACILITIES
Prime	6.03	WATER AND SANITARY SEWER SYSTEMS - WATER AND SANITARY SEWAGE TREATMENT PLANTS
Prime	17.00	ENGINEERING CONSTRUCTION MANAGEMENT
Other	9.01	SOILS, FOUNDATIONS AND MATERIALS TESTING - DRILLING, SUBSURFACE INVESTIGATIONS AND SEISMOGRAPHIC SERVICES
Other	9.02	SOILS, FOUNDATIONS AND MATERIALS TESTING - GEOTECHNICAL AND MATERIALS ENGINEERING SERVICES
Other	9.04	SOILS, FOUNDATIONS AND MATERIALS TESTING - NON-DESTRUCTIVE TESTING AND INSPECTIONS
Other	10.05	ENVIRONMENTAL ENGINEERING - CONTAMINATION ASSESSMENT AND MONITORING
Other	11.00	GENERAL STRUCTURAL ENGINEERING
Other	12.00	GENERAL MECHANICAL ENGINEERING
Other	13.00	GENERAL ELECTRICAL ENGINEERING
Other	14.00	ARCHITECTURE
Other	15.01	SURVEYING AND MAPPING - LAND SURVEYING
Other	16.00	GENERAL CIVIL ENGINEERING
Other	18.00	ARCHITECTURAL CONSTRUCTION MANAGEMENT
Other	19.06	VALUE ANALYSIS AND LIFE-CYCLE COSTING - WATER AND SANITARY SYSTEMS

Evaluator ID: JFERG | Date: 12/17/2021 | Period: Completion of study or design

Rating *

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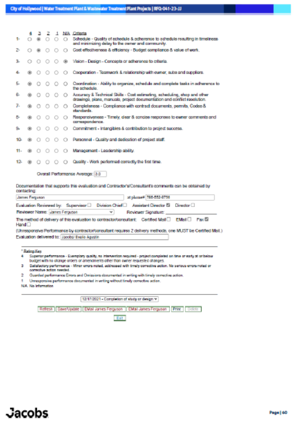


City of Hollywood | Water Treatment Plant & Wastewater Treatment Plant Projects | RFQ-041-23-JJ

	4	3	2	1	N/A	Criteria
1-	○	◉	○	○	○	Schedule - Quality of schedule & adherence to schedule resulting in timeliness and minimizing delay to the owner and community.
2-	○	◉	○	○	○	Cost effectiveness & efficiency - Budget compliance & value of work.
3-	○	○	○	○	◉	Vision - Design - Concepts or adherence to criteria.
4-	◉	○	○	○	○	Cooperation - Teamwork & relationship with owner, subs and suppliers.
5-	◉	○	○	○	○	Coordination - Ability to organize, schedule and complete tasks in adherence to the schedule.
6-	◉	○	○	○	○	Accuracy & Technical Skills - Cost estimating, scheduling, shop and other drawings, plans, manuals, project documentation and conflict resolution.
7-	◉	○	○	○	○	Completeness - Compliance with contract documents, permits, Codes & standards.
8-	◉	○	○	○	○	Responsiveness - Timely, clear & concise responses to owner comments and correspondence.
9-	◉	○	○	○	○	Commitment - Intangibles & contribution to project success.
10-	◉	○	○	○	○	Personnel - Quality and dedication of project staff.
11-	◉	○	○	○	○	Management - Leadership ability.
12-	◉	○	○	○	○	Quality - Work performed correctly the first time.

Overall Performance Average: 3.8

Documentation that supports this evaluation and Contractor's/Consultant's comments can be obtained by contacting: James Ferguson at phone# 786-552-8756

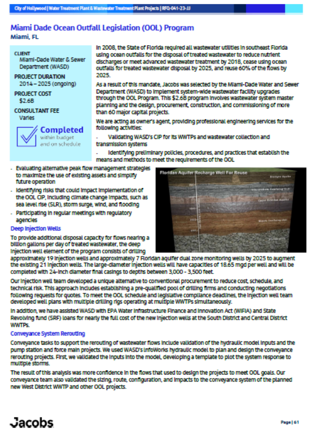
Evaluation Reviewed by: Supervisor ☐ Division Chief ☐ Assistant Director ☑ Director ☐
Reviewer Name: James Ferguson | Reviewer Signature: ____________
The method of delivery of this evaluation to contractor/consultant: Certified Mail ☐ EMail ☐ Fax ☑ Hand ☐
(Unresponsive Performance by contractor/consultant requires 2 delivery methods, one MUST be Certified Mail.)
Evaluation delivered to: Jacobs/ Evelio Agustin

* Rating Key
4 Superior performance - Exemplary quality, no intervention required - project completed on time or early at or below budget with no change orders or amendments other than owner requested changes.
3 Satisfactory performance - Minor errors noted, addressed with timely corrective action. No serious errors noted or corrective action needed.
2 Guarded performance Errors and Omissions documented in writing with timely corrective action.
1 Unresponsive performance documented in writing without timely corrective action.
N/A. No information.

12/17/2021 - Completion of study or design

Refresh | Save/Update | EMail James Ferguson | EMail James Ferguson | Print | Delete
Exit

Jacobs | Page | 60



City of Hollywood | Water Treatment Plant & Wastewater Treatment Plant Projects | RFQ-041-23-JJ

Miami Dade Ocean Outfall Legislation (OOL) Program
Miami, FL

CLIENT
Miami-Dade Water & Sewer Department (WASD)

PROJECT DURATION
2014 – 2025 (ongoing)

PROJECT COST
$2.6B

CONSULTANT FEE
Varies

Completed within budget and on schedule

In 2008, the State of Florida required all wastewater utilities in southeast Florida using ocean outfalls for the disposal of treated wastewater to reduce nutrient discharges or meet advanced wastewater treatment by 2018, cease using ocean outfalls for treated wastewater disposal by 2025, and reuse 60% of the flows by 2025.

As a result of this mandate, Jacobs was selected by the Miami-Dade Water and Sewer Department (WASD) to implement system-wide wastewater facility upgrades through the OOL Program. This $2.6B program involves wastewater system master planning and the design, procurement, construction, and commissioning of more than 60 major capital projects.

We are acting as owner's agent, providing professional engineering services for the following activities:

- Validating WASD's CIP for its WWTPs and wastewater collection and transmission systems
- Identifying preliminary policies, procedures, and practices that establish the means and methods to meet the requirements of the OOL
- Evaluating alternative peak flow management strategies to maximize the use of existing assets and simplify future operation
- Identifying risks that could impact implementation of the OOL CIP, including climate change impacts, such as sea level rise (SLR), storm surge, wind, and flooding
- Participating in regular meetings with regulatory agencies

Floridan Aquifer Recharge Well For Reuse

Deep Injection Wells

To provide additional disposal capacity for flows nearing a billion gallons per day of treated wastewater, the deep injection well element of the program consists of drilling approximately 19 injection wells and approximately 7 Floridan aquifer dual zone monitoring wells by 2025 to augment the existing 21 injection wells. The large-diameter injection wells will have capacities of 18.65 mgd per well and will be completed with 24-inch diameter final casings to depths between 3,000 - 3,500 feet.

Our injection well team developed a unique alternative to conventional procurement to reduce cost, schedule, and technical risk. This approach includes establishing a pre-qualified pool of drilling firms and conducting negotiations following requests for quotes. To meet the OOL schedule and legislative compliance deadlines, the injection well team developed well plans with multiple drilling rigs operating at multiple WWTPs simultaneously.

In addition, we have assisted WASD with EPA Water Infrastructure Finance and Innovation Act (WIFIA) and State Revolving fund (SRF) loans for nearly the full cost of the new injection wells at the South District and Central District WWTPs.

Conveyance System Rerouting

Conveyance tasks to support the rerouting of wastewater flows include validation of the hydraulic model inputs and the pump station and force main projects. We used WASD's InfoWorks hydraulic model to plan and design the conveyance rerouting projects. First, we validated the inputs into the model, developing a template to plot the system response to multiple storms.

The result of this analysis was more confidence in the flows that used to design the projects to meet OOL goals. Our conveyance team also validated the sizing, route, configuration, and impacts to the conveyance system of the planned new West District WWTP and other OOL projects.

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Form 2 – Hold Harmless and Indemnity Clause

Note: Acknowledged online as required. No place included for exceptions.

✔ **2. Hold Harmless and Indemnity Clause** *

I, an authorized representative, the contractor, shall indemnify, defend and hold harmless the City of Hollywood, its elected and appointed officials, employees and agents for any and all suits, actions, legal or administrative proceedings, claims, damage, liabilities, interest, attorney' s fees, costs of any kind whether arising prior to the start of activities or following the completion or acceptance and in any manner directly or indirectly caused, occasioned or contributed to in whole or in part by reason of any act, error or omission, fault or negligence whether active or passive by the contractor, or anyone acting under its direction, control, or on its behalf in connection with or incident to its performance of the contract.

Please note the following exception:

8.2 Hold Harmless and Indemnity Clause*

Jacobs has reviewed the indemnity language presented in the RFQ and if selected, would like to discuss and negotiate indemnity obligations that are mutually agreed to by both parties.

Form 3 – Non-Collusion Affidavit

Note: Acknowledged online as required.

✔ **3. Non-Collusion Statement***

I, being first duly sworn, depose that:

A. He/she is an authorized representative of the Company, the Proposer that has submitted the attached Proposal.
B. He/she has been fully informed regarding the preparation and contents of the attached Proposal and of all pertinent circumstances regarding such Proposal;
C. Such Proposal is genuine and is not a collusion or sham Proposal;
D. Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Proposer, firm or person to submit a collusive or sham Proposal in connection with the contractor for which the attached Proposal has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Proposer, firm or person to fix the price or prices, profit or cost element of the Proposal price or the Proposal price of any other Proposer, or to secure an advantage against the City of Hollywood or any person interested in the proposed Contract; and
E. The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Proposer or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Form 4 – Sworn Statement Pursuant to Section 287.133(3)(a)

Note: Uploaded to Opengov portal as required.

SWORN STATEMENT PURSUANT TO SECTION 287.133 (3) (a) FLORIDA STATUTES ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS

1. This form statement is submitted to the City of Hollywood by Ellen B. Patterson for Jacobs Engineering Group Inc.
(Print individual's name and title) (Print name of entity submitting sworn statement)
whose business address is 550W Cypress Creek Road, Fort Lauderdale FL 33309
and if applicable its Federal Employer Identification Number (FEIN) is 95-4081636. If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement.

---

2. I understand that "public entity crime," as defined in paragraph 287.133(1)(g), Florida Statues, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misinterpretation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in an federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that "Affiliate," as defined in paragraph 287.133(1)(a), Florida Statutes, means:

    1. A predecessor or successor of a person convicted of a public entity crime, or
    2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5 I understand that "person," as defined in Paragraph 287.133(1)(e), Florida Statues, means any natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact

business with a public entity. The term "person" includes those officers, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

__X__ Neither the entity submitting sworn statement, nor any of its officers, director, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime, but the Final Order entered by the Hearing Officer in a subsequent proceeding before a Hearing Officer of the State of the State of Florida,

Division of Administrative Hearings, determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (attach a copy of the Final Order).

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THAT PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017 FLORIDA STATUTES FOR A CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

Ella B. Patterson
(Signature)

Sworn to and subscribed before me this 28 day of February, 2023.

Personally known Ellen B. Patterson

Or produced identification _____ Notary Public-State of Florida

_____ my commission expires 4/1/23
(Type of identification)

Stacey Robin Lesser
(Printed, typed or stamped commissioned name of notary public)

STACEY ROBIN LESSER
Notary Public - State of Florida
Commission # GG 303592
My Comm. Expires Apr 1, 2023
Bonded through National Notary Assn.

Form 5 – Certifications Regarding Debarments, Suspensions and Other Responsibility Matters

Note: Acknowledged online as required. No place included for exceptions.

✔ **5. Certifications Regarding Debarment, Suspension and Other Responsibility Matters***

The applicant certifies that it and its principals:

Are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of Federal benefits by a State or Federal court, or voluntarily excluded from covered transactions by any Federal department or agency;

Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction, violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause or default.

Please note the following exception:

Regarding Termination for Default

In August 2020, the Procurement Office of the Arizona Department of Transportation ('ADOT') notified Jacobs Engineering Group Inc. ('Jacobs') of its intent to terminate an On-Call Acquisition and Relocation Services contract (CTR049970 and CTR049971) for default due to a disputed real estate brokerage licensing requirement. Jacobs has been in the process with ADOT of correcting this administrative default and to secure rescission of the notice. No task orders had been requested or issued under the subject On-Call.

Jacobs has delivered world-class engineering services with ADOT for over 30 years. Jacobs continues to win new contracts and deliver many projects with ADOT. This termination is not expected to have a material adverse effect on Jacobs Engineering Group Inc., or upon the business, financial condition, results of operations, or cash flows for the company.

Form 6 – Drug-Free Workplace Program

Note: Acknowledged online as required.

✔ **6. Drug-Free Workplace Program***

A. IDENTICAL TIE PROPOSALS - Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie proposals will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employee that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program (if such is available in the employee's community) by, any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of these requirements.

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

Form 7 – Solicitation, Giving and Acceptance of Gifts Policy

Note: Acknowledged online as required.

✔ **7. Solicitation, Giving, and Acceptance of Gifts Policy***

Florida Statute 112.313 prohibits the solicitation or acceptance of Gifts. "No Public officer, employee of an agency, local government attorney, or candidate for nomination or election shall solicit or accept anything of value to the recipient, including a gift, loan, reward, promise of future employment, favor, or service, based upon any understanding that the vote, official action, or judgment of the public officer, employee, local government attorney, or candidate would be influenced thereby." The term "public officer" includes "any person elected or appointed to hold office in any agency, including any person serving on an advisory body."

The City of Hollywood/Hollywood CRA policy prohibits all public officers, elected or appointed, all employees, and their families from accepting any gifts of any value, either directly or indirectly, from any contractor, vendor, consultant, or business with whom the City/CRA does business.

The State of Florida definition of "gifts" includes the following:

- Real property or its use,
- Tangible or intangible personal property, or its use,
- A preferential rate or terms on a debt, loan, goods, or services,
- Forgiveness of indebtedness,
- Transportation, lodging, or parking,
- Food or beverage,
- Membership dues,
- Entrance fees, admission fees, or tickets to events, performances, or facilities,
- Plants, flowers or floral arrangements
- Services provided by persons pursuant to a professional license or certificate.
- Other personal services for which a fee is normally charged by the person providing the services.
- Any other similar service or thing having an attributable value not already provided for in this section.

Any contractor, vendor, consultant, or business found to have given a gift to a public officer or employee, or his/her family, will be subject to dismissal or revocation of contract.

As the person authorized to sign the statement, I certify that this firm will comply fully with this policy.

Form 8 – W-9 (Request for Taxpayer Identification)

Note: Uploaded to Opengov portal as required.

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
Jacobs Engineering Group Inc.

2 Business name/disregarded entity name, if different from above

Print or type. See Specific Instructions on page 3.

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☒ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶ LE 71

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
Exempt payee code (if any) 5
Exemption from FATCA reporting code (if any) D
(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
1999 Bryan Street, Suite 1200

Requester's name and address (optional)

6 City, state, and ZIP code
Dallas, TX 75201

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

or

Employer identification number
95-4081636

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here Signature of U.S. person ▶  Date ▶ February 2, 2021

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

ISA

Form **W-9** (Rev. 10-2018)

Form 9 – Certificate of Insurance

Note: Uploaded to Opengov portal as required.

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 01/19/2023

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

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

PRODUCER LIC #0437153 1-212-948-1306 Marsh Risk & Insurance Services CIRTS_Support@jacobs.com 633 W. Fifth Street Los Angeles, CA 90071	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): 1-212-948-1306 E-MAIL ADDRESS:
INSURED Jacobs Engineering Group Inc. C/O Global Risk Management 555 S Flower St, Suite 670 Los Angeles, CA 90071	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : ACE AMER INS CO — 22667 INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 67666545 **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			HDO G72496176	07/01/22	07/01/23	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE [X] OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 500,000
	X CONTRACTUAL LIABILITY						MED EXP (Any one person)	$ 5,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY	$ 1,000,000
	X POLICY [ ] PRO-JECT [ ] LOC						GENERAL AGGREGATE	$ 2,000,000
	OTHER:						PRODUCTS - COMP/OP AGG	$ 1,000,000
								$
A	AUTOMOBILE LIABILITY			ISA H25568230	07/01/22	07/01/23	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB [ ] OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB [ ] CLAIMS-MADE						AGGREGATE	$
	DED [ ] RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			SCF C68914619 (WI)	07/01/22	07/01/23	X PER STATUTE [ ] OTH-ER	
A	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [N] N/A			WLR C68914153A (AOS)	07/01/22	07/01/23	E.L. EACH ACCIDENT	$ 1,000,000
A	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			WCU C68914577 (OH)*	07/01/22	07/01/23	E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
A	PROFESSIONAL LIABILITY			ECN G21655065 013	07/01/22	07/01/23	PER CLAIM/PER AGG	3,000,000
A	CONTRACTORS POLLUTION			CPM G21743793 020	07/01/22	07/01/23	PER CLAIM/ PER AGG	1,000,000

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

PROJECT MGR: GJ Schers. CONTRACT MGR: Leanne Andersen. RE: WATER TREATMENT PLANT AND WASTEWATER TREATMENT PLANT PROJECTS. CONTRACT END DATE: 2028-03-30. PROPOSAL NUMBER: RFQ-041-23-JJ. SECTOR: Public. City of Hollywood is added as an additional insured for general liability & auto liability as respects the negligence of the insured in the performance of insured's services to cert holder under contract for captioned work. Coverage is primary and certificate holder's insurance is excess and non-contributory. Waiver of subrogation is hereby granted in favor of cert holder for GL, AL and WC. *THIS IS A SAMPLE CERTIFICATE ONLY*. THE ACTUAL CERTIFICATE FOR THE PROPOSED PROJECT WILL COMPLY WITH THE TERMS AND CONDITIONS NEGOTIATED IN THE FINAL CONTRACT, CONSISTENT WITH POLICY TERMS AND CONDITIONS.

CERTIFICATE HOLDER	CANCELLATION
City of Hollywood 2600 Hollywood Blvd Ste B Hollywood, FL 33020 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

ACORD 25 (2016/03) The ACORD name and logo are registered marks of ACORD

nyumdo newgalexy
67666545

SUPPLEMENT TO CERTIFICATE OF INSURANCE

DATE
01/19/2023

NAME OF INSURED: Jacobs Engineering Group Inc.

Additional Description of Operations/Remarks from Page 1:

Additional Information:

*$2,000,000 SIR FOR STATE OF: OHIO

SUPP (05/04)

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 01/19/2023

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

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

PRODUCER LIC #0437153 1-212-948-1306 Marsh Risk & Insurance Services CIRTS_Support@jacobs.com 633 W. Fifth Street Los Angeles, CA 90071	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:
	INSURER(S) AFFORDING COVERAGE — NAIC #
	INSURER A : ACE AMER INS CO — 22667
INSURED Jacobs Engineering Group Inc. C/O Global Risk Management 555 S Flower St, Suite 670 Los Angeles, CA 90071	INSURER B :
	INSURER C :
	INSURER D :
	INSURER E :
	INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 67666691 **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N / A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	CYBER LIABILITY			ECN G71083330 001	07/01/22	07/01/23	PER CLAIM/PER AGG	1,000,000

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

PROJECT MGR: GJ Schers. CONTRACT MGR: Leanne Andersen. RE: WATER TREATMENT PLANT AND WASTEWATER TREATMENT PLANT PROJECTS. CONTRACT END DATE: 2028-03-30. PROPOSAL NUMBER: RFQ-041-23-JJ. SECTOR: Public. *THIS IS A SAMPLE CERTIFICATE ONLY*. THE ACTUAL CERTIFICATE FOR THE PROPOSED PROJECT WILL COMPLY WITH THE TERMS AND CONDITIONS NEGOTIATED IN THE FINAL CONTRACT, CONSISTENT WITH POLICY TERMS AND CONDITIONS.

CERTIFICATE HOLDER	CANCELLATION
City of Hollywood 2600 Hollywood Blvd Ste B Hollywood, FL 33020 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

ACORD 25 (2016/03)
nyumdo newgalexy
67666691

SUPPLEMENT TO CERTIFICATE OF INSURANCE	DATE 01/19/2023
NAME OF INSURED: Jacobs Engineering Group Inc.	

SUPP (10/00)

Form 10 – Proof of Sunbiz Registration

Note: Acknowledged online as required.

✔ **10. Proof of Sunbiz Registration***

Enter company FEIN to be verified in Sunbiz

95-4081636 ✔

* The most recent version of Sunbiz accidentally excluded Ellen Patterson from its official listing. While this is being addressed and updated, we are including a signed and sealed Secretary Certificate providing proof of authority that she can bid and sign on behalf of Jacobs Engineering Group Inc

Authorization to for Ellen Patterson to Sign for Jacobs Engineering Group Inc.

Jacobs

SECRETARY CERTIFICATE

I, Justin Johnson, Secretary of Jacobs Engineering Group Inc. (the "Company"), hereby certify that:

Ellen B. Patterson is Geographic Operations Manager of the Company and has been granted authority, by the board of directors to execute documents on behalf of the Company for the City of Hollywood WTP and WWTP project.

Dated this 24th day of February 2023.

Justin Johnson, Secretary

JACOBS ENGINEERING GROUP INC CORPORATE SEAL DELAWARE

.

Form 11 – Proposal Form

Note: Uploaded to Opengov portal as required.

PROPOSAL

TO THE MAYOR AND COMMISSIONERS
CITY OF HOLLYWOOD, FLORIDA

SUBMITTED __2/28/2023_____

Dear Mayor and Commissioners:

The undersigned, as BIDDER, hereby declares that the only person or persons interested in the Proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this Proposal or in the Contract to be entered into; that this Proposal is made without connection with any other person, company or parties making a Bid or Proposal; and that it is in all respects fair and in good faith without collusion or fraud.

The BIDDER further declares that he has examined the site of the Work and informed himself fully in regard to all conditions pertaining to the place where the Work is to be done; that he has examined the Drawings and Specifications for the Work and contractual documents relative thereto, including the Notice to Bidders, Instructions to Bidders, Proposal Bid Form, Form of Bid Bond, Form of Contract and Form of Performance Bond, General, Supplementary and Technical Specifications, Addenda, Drawings, and Local Preference Program, Exhibit A, and has read all of the Provisions furnished prior to the opening of bids; and that he has satisfied himself relative to the work to be performed.

The undersigned BIDDER has not divulged to, discussed or compared his bid with other bidders and has not colluded with any other BIDDER of parties to this bid whatever.

If this Proposal is accepted, the undersigned BIDDER proposes and agrees to enter into and execute the Contract with the City of Hollywood, Florida, in the form of Contract specified as mutually agreed to by the parties of which this Proposal, Instructions to Bidders, General Specifications, Supplementary Conditions and Drawings shall be made a part for the performance of Work described therein; if applicable to furnish the necessary bond equal to one hundred (100) percent of the total Contract base bid, the said bond being in the form of a Cash Bond or Surety Bond prepared on the applicable approved bond form furnished by the CITY; to furnish all necessary materials, equipment, machinery, tools, apparatus, transportation, supervision, labor and all means necessary to construct and complete the work specified in the Proposal and Contract and called for in the Drawings and in the manner specified; to commence Work on the effective date established in the "Notice to Proceed" from the ENGINEER; and to substantially complete all Contract Work within _____ days with final completion within _____ days, and stated in the "Notice to Proceed" or if applicable pay liquidated damages for each calendar day in excess thereof, or such actual and consequential damages as may result therefrom, and to abide by the Local Preference Ordinance, Exhibit A.

The BIDDER acknowledges receipt of the any and all addenda.

And the undersigned agrees that in case of failure on his part to execute the said Contract and the Bond within ten (10) days after being presented with the prescribed Contract forms, the check or Bid Bond accompanying his bid, and the money payable thereon, shall be paid into the funds of the City of Hollywood, Florida, otherwise, the check or Bid Bond accompanying this Proposal

shall be returned to the undersigned.

Attached hereto is a certified check on the _____N/A

_____ Bank of _____ or approved Bid

Bond for the sum of

_____N/A_____) according to the Dollars ($ conditions under the Instructions to Bidders and provisions therein.

NOTE: If a Bidder is a corporation, the legal name of the corporation shall be set forth below, together with signature(s) of the officer or officers authorized to sign Contracts on behalf of the corporation and corporate seal; if Bidder is a partnership, the true name of the firm shall be set forth below with the signature(s) of the partner or partners authorized to sign Contracts in behalf of the partnership; and if the Bidder is an individual, his signature shall be placed below; if a partnership, the names of the general partners.

WHEN THE BIDDER IS AN INDIVIDUAL:

_____
(Signature of Individual)

_____
(Printed Name of Individual)

_____
(Address)

****

WHEN THE BIDDER IS A SOLE PROPRIETORSHIP OR OPERATES UNDER A TRADE NAME:

_____
(Name of Firm)

_____
(Address)

_____(SEAL)
(Signature of Individual)

****

WHEN THE BIDDER IS A PARTNERSHIP:

_____
(Name of Firm) A Partnership

_____
(Address)

By: _____
(SEAL)
(Partner)

Name and Address of all Partners:

_____

_____

****

WHEN THE BIDDER IS A JOINT VENTURE:

_____
(Correct Name of Corporation)

By: _____ (SEAL)
(Address)

_____
(Official Title)

As Joint Venture
(Corporate Seal)

Organized under the laws of the State of _____, and authorized by the law to make this bid and perform all Work and furnish materials and equipment required under the Contract Documents.

****

WHEN THE BIDDER IS A CORPORATION:

JACOBS ENGINEERING GROUP INC CORPORATE SEAL DELAWARE

Jacobs Engineering Group Inc.
(Correct Name of Corporation)

By: Ellen B. Patterson
(SEAL)

Geographic Operations Manager
(Official Title)
550 W. Cypress Creek Rd.
Fort Lauderdale, FL 33309
(Address of Corporation)

Organized under the laws of the State of _____, and authorized by the law to make this bid and perform all Work and furnish materials and equipment required under the Contract Documents.

CERTIFIED COPY OF RESOLUTION OF
BOARD OF DIRECTORS

_____
(Name of Corporation)

RESOLVED that _____
(Person Authorized to Sign)

_____ of _____
(Title) (Name of Corporation)

be authorized to sign and submit the Bid or Proposal of this corporation for the following project:

Project Name: City of Hollywood WTP & WWTP
Project Number: N/A
Bid No.: RFQ-041-23-JJ

The foregoing is a true and correct copy of the Resolution adopted by

_____ at a meeting of its Board of
(Name of Corporation)

Directors held on the _____ day of _____, 20____.

By: _____

Title: _____

(SEAL)

The above Resolution MUST BE COMPLETED if the Bidder is a Corporation.

- END OF SECTION -

Jacobs

Challenging today.
Reinventing tomorrow.

Water Treatment Plant and Wastewater Treatment Plant Projects

For the City of Hollywood, Florida

RFQ-041-23-JJ | February 28, 2023