

REQUEST FOR QUALIFICATIONS

# Trenchless Installation of Utilities Across Fleming Channel

City Of Key West

RFQ #22-008

September 14, 2022



**Jacobs**

Challenging today.  
Reinventing tomorrow.

# Table of Contents

## TAB

|   |  |     |
|---|--|-----|
| 1 | Cover Letter .....                                 | i   |
| 2 | Information Page .....                             | 2-1 |
| 3 | Organization Chart .....                           | 3-1 |
| 4 | Company Information.....                           | 4-1 |
| 5 | Methodology and Approach .....                     | 5-1 |
| 6 | Personnel.....                                     | 6-1 |
| 7 | Qualifications.....                                | 7-1 |
| 8 | Representative Projects and Client References..... | 8-1 |
| 9 | Sworn Statements and Affidavits .....              | 9-1 |

## Exhibit A

1. Anti-Kickback Affidavit
2. Non-collusion Affidavit/Declaration and Compliance
3. Florida Statutes, on Public Entity Crimes
4. Equal Benefits for Domestic Partners Affidavit
5. Cone of Silence Affidavit
6. City of Key West Indemnification Form
  - Attachment A-Supplemental Response to Indemnification Form
7. Suspension and Debarment Certification
  - Attachment A1-Supplemental Response to Debarment Form 2c
8. Disclosure of Lobbying Activities
9. Prohibited Interests Form and Notice
10. Vendor Certification Regarding Scrutinized Companies Lists

## Other Required Documents

- Certificate of Liability Insurance and Supplement to Certificate of Insurance
- Secretary Certificate/Certificate of Authority
- State of Florida Certificate of Good Standing
- State of Florida Firm License

# 1. Cover Letter

September 14, 2022

City Clerk  
City of Key West  
1300 White Street  
Key West, Florida 33040

**RE: Proposal to provide Trenchless Installation of Utilities Across Fleming Channel for the City of Key West**

Dear Selection Committee Members:

The City of Key West has determined that relocating critical utilities from the Fleming Key Bridge to an underground tunnel is vital to protect this essential infrastructure from potential damage. To achieve this goal, you require a design consultant team that thoroughly understands the technical, negotiation, and coordination challenges inherent in this complex project. The Jacobs team's distinctive qualifications and capabilities provide you enormous tangible benefits in completing this work.

**Relationships and experience with stakeholders to provide smooth delivery.** [Jacobs is uniquely positioned to effectively tackle the intangibles of working with stakeholders.](#) Early and frequent communication with the US Navy, US Coast Guard, US Army Corps of Engineers, Keys Energy, Florida Key National Marine Sanctuary, The Florida Keys Aqueduct Authority and other state and federal stakeholders. We operate the City of Key West Wastewater Treatment Plant and are working closely with the Navy as part of a Military Installation Resilience Review. Our experience and relationships with key stakeholders will aid collaboration to select the preferred pipeline alignment and negotiate easement requirements, among other goals.

**Local understanding for efficient permitting.** We know the permits needed to advance the design and understand the processes, procedures, and pertinent staff at each permitting agency. This capability, which we used to draft the documentation for your benthic resource study and obtain permits for other projects associated with the Fleming Channel Bridge, means we can get this project's required permits on time.

**The No. 1 Trenchless Engineering Firm** (*Trenchless Technology*, 2022) **9 out of the past 10 years and No. 1 Design Firm** (*Engineering News-Record*, 2022). Our curated team of technical delivery specialists [brings experience from similar, challenging trenchless projects](#) to provide the engineering, land surveying, NEPA and environmental compliance, geotechnical evaluation, permitting, bid phase, and construction inspection services you need. Subcontractors Avirom & Associates, Inc. and Cummins Cederberg, Inc. provide valued support.

**Project-specific knowledge and partnership history to meet your goals.** From working on your preliminary design and trenchless installation feasibility study, our team is keenly familiar with the project's opportunities and challenges—including preserving the overhead utilities for redundancy, should you so choose. Adding to this our more than 35 years partnering with you to improve critical infrastructure and facilities across Key West, we bring [absolutely zero learning curve, with a deep enthusiasm to start immediately on achieving your goals.](#)

If you have any questions or require additional information, please contact **Mike Stickley**, PE, or **John Elizabeth Aleman**. We look forward to continuing our partnership with you!

Sincerely,

Jacobs Engineering Group Inc.



Mike Stickley, PE, Project Manager  
(205) 201-3765 | [mike.stickley@jacobs.com](mailto:mike.stickley@jacobs.com)



John Elizabeth Aleman, Client Account Manager  
(786) 298-0180 | [john.aleman@jacobs.com](mailto:john.aleman@jacobs.com)

## 2. Information Page

## 2. Information Page

### Trenchless Installation of Utilities Across Fleming Channel

RFQ #22-008



#### Consulting Firm Information

## Jacobs

### Jacobs Engineering Group Inc.

Mike Stickley, PE – *Project Manager*

(Interim Location)

One Perimeter Park South, Suite 100N

Room 136

Birmingham, AL 35243

[mike.stickley@jacobs.com](mailto:mike.stickley@jacobs.com)

PH: (205) 201-3765

### Jacobs Engineering Group Inc.

John Elizabeth Aleman – *Client Account Manager (authority to represent the firm)*

3150 SW 38<sup>th</sup> Avenue

Suite 700

Miami, FL 33146

[john.aleman@jacobs.com](mailto:john.aleman@jacobs.com)

PH: (786) 298-0180

[www.jacobs.com](http://www.jacobs.com)

## 3. Organization Chart



### 3. Organization Chart

#### Jacobs' Team Structure

We have carefully selected our key team and supporting staff based on their qualifications and experience delivering projects of similar size, scope, and geography; their attention to detail; and their understanding of providing field work in the Florida Keys. Each key team member has in-depth understanding of this project, and many have worked on the prior phase of this project. Their knowledge enables us to immediately start work on the project without any delay and the extended learning curve other teams would face.

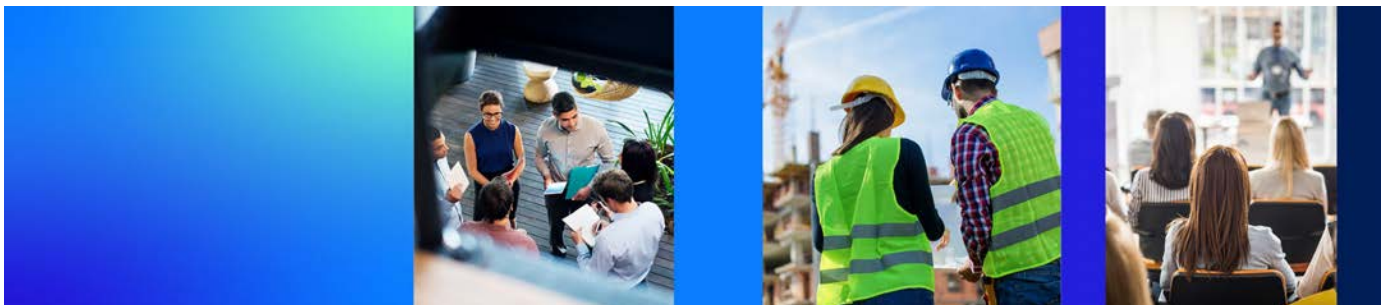
Our team will provide a seamless integration and collaboration among stakeholders, including City staff, the Navy, Army Corps and others, reduce complicated processes, communication and delays responding to critical matters. Our organizational chart demonstrates a straightforward management structure and an easily identifiable chain of command. We provide a single point of contact with full accountability, and immediate responsiveness, to ensure a streamlined project approach to meet your needs.

We assembled a highly qualified team to deliver to your project. Our proposed team includes **Project Manager Mike Stickley, PE**, who excels in effective leadership, has in-depth understanding of your investment in this project, and aligns our team to deliver on your priorities and goals. **Principal-in-Charge John Elizabeth Aleman** provides project delivery oversight, verifying our team meets your expectations. **Utility Relocation Coordination Manager Javier Colignon** provides the same, detailed knowledge of your utilities he brought to the previous phase. Similarly, **Trenchless Engineer Robert Martin** continues to provide overall design, expanding on his work from the feasibility stage. **Permitting Lead Leigh Ann Cannon, ENV SP**, who already significantly advanced the permitting, continues this work to obtain the needed permits without issues. **Quality Control and Quality Assurance (QA/QC) Lead Andrew Bursey, PE**, is our resource to review each design deliverable throughout this contract.

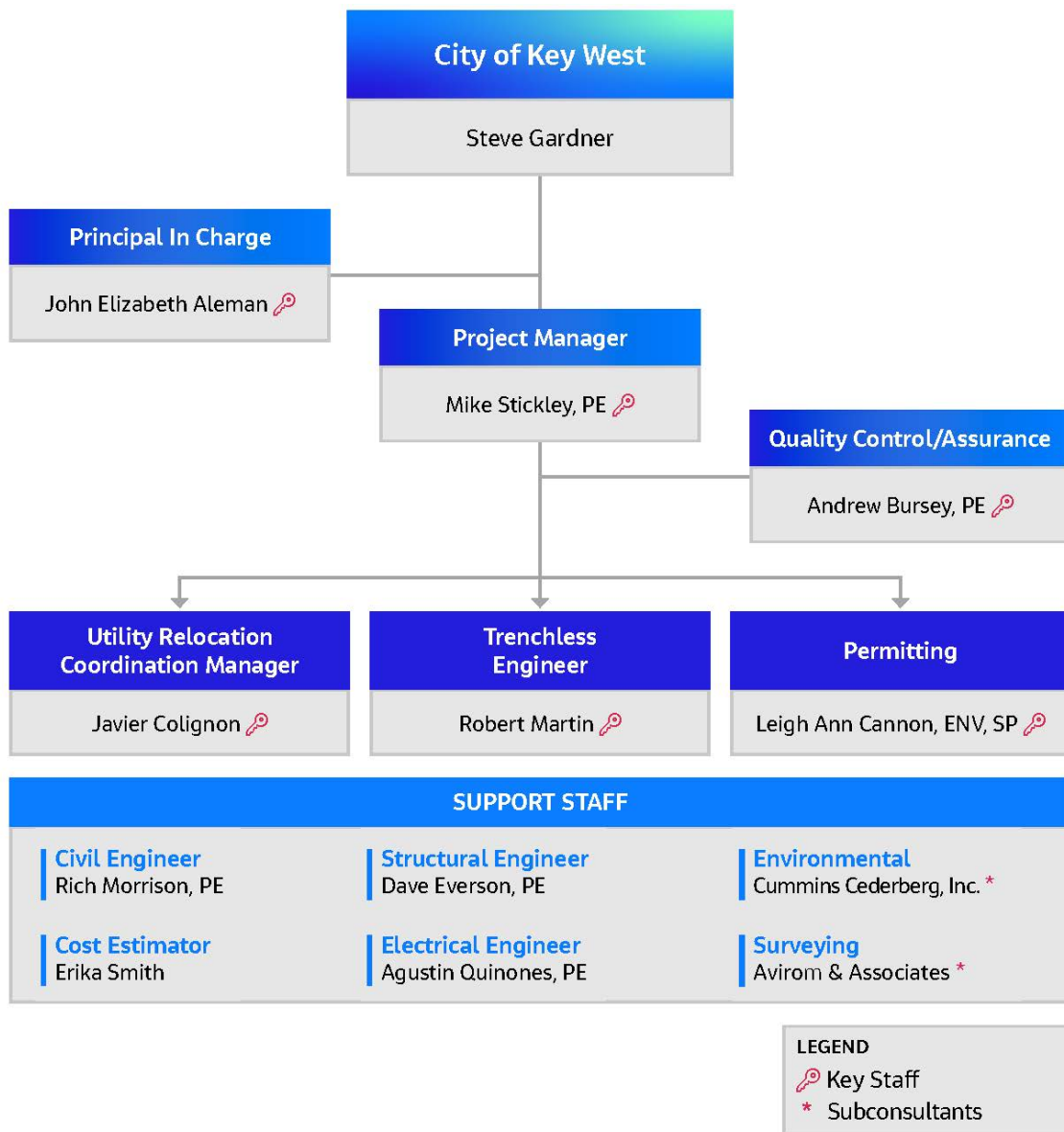
This team provides you confidence in a collaborative, timely, and a cost-conscious approach to your trenchless utilities relocation project. We have found the key to successful contract delivery is providing a proactive management team to handle planned activities, with flexibility and capacity to address any unexpected events that may arise.

We are excited to offer you this team for this contract. **Our organizational chart illustrates how our team configuration and collaborative set-up meet your requirements to perform the scope of work outlined in the RFQ.**

Our organizational chart demonstrates an uncomplicated management structure and an easily identifiable chain of command. We provide a single point of contact with full accountability and immediate responsiveness, for a streamlined project approach that meets your needs.







## 4. Company Information

## 4. Company Information

| 70+  | 60+  | 40+                          | 35+                                     |
|--|--|------------------------------|---|
| Years of Providing Innovative Solutions      | Years of Service in Florida  | Years of Trenchless Services | Years Working with the City of Key West |
| Business Entity:                             | Jacobs Engineering Group Inc.  |                              |   |
| Business Structure:                          | Corporation, registered as a legal entity in the State of Florida.<br>Federal Tax ID: 95-4081636<br>publicly traded (NYSE: J)  |                              |   |
| Background:                                  | Founded by Dr. Joseph J. Jacobs in 1947, Jacobs was originally incorporated in the State of California and reincorporated in Delaware in 1987. Jacobs' corporate office location is now 1999 Bryan Street, Suite 1200, Dallas, TX 75201. CH2M became part of Jacobs in 2017. |                              |   |
| Project Manager:                             | Mike Stickley, PE<br>Phone: (205) 201-3765, Email: <a href="mailto:mike.stickley@jacobs.com">mike.stickley@jacobs.com</a>  |                              |   |
| Name and Title of Authorized Representative: | John Elizabeth Aleman, Client Account Manager<br>Phone: (786) 298-0180, Email: <a href="mailto:John.Aleman@jacobs.com">John.Aleman@jacobs.com</a>  |                              |   |
| Website:                                     | <a href="http://www.jacobs.com">www.jacobs.com</a>   |                              |   |
| Size of the Firm:                            | 55,000+ employees globally, 17,000 employees in the US,<br>1,300+ employees in Florida   |                              |   |

### Jacobs is One of the World's Largest Providers of Professional and Technical Services

Jacobs is one of the world's largest and most diverse providers of full-spectrum engineering, design, program management, construction management, environmental, operations, and construction services for government, business, industrial, commercial, and infrastructure sectors worldwide.

We bring the City of Key West over 4 decades of global experience providing tunneling and conveyance design. With nearly **900 tunneling and ground engineers worldwide**, our team is one of the largest global providers of tunnel and trenchless engineering, geotechnical engineering, and geosciences and engineering geology. We bring you the latest and most innovative approaches to tunneling and trenchless design and construction.

As a leader in trenchless engineering, Jacobs has been ranked **No. 1 in the US market by *Trenchless Technology Magazine* for nine of the past ten years**. We bring full, in-house services, including planning, design, construction management, operations, resident engineering, program management, and all forms of alternative delivery services. We have successfully solved the challenges you face on this project for clients across the US and globally, including ground stability, optimizing layouts to minimize impacts, ensuring environmental compliance and implementation of resiliency to protect this critical infrastructure.

Having completed the feasibility assessment for this project, our team brings extensive, project-specific knowledge to the table. Because we know the scope of work, permitting requirements, and challenges of working in this highly sensitive area, we can deftly help you develop timely, cost-efficient, and compliant methods and approaches to deliver this trenchless utilities relocation, setting your project up for long-term success.

### Jacobs Trenchless Engineering

To determine the top trenchless project delivery companies, ***Trenchless Technology*** compares firms based on their trenchless billings in the North American market, the numbers of trenchless professionals and completed trenchless projects (or subsurface construction projects requiring minimal or no continuous trenches), and a breakdown of what trenchless components made up the projects reported.

# Ranked #1

## in Trenchless Technology's Top 50 Trenchless Engineering Firms list

Follow us @JacobsConnects | [www.jacobs.com](http://www.jacobs.com)

**Jacobs** Challenging today.  
Reinventing tomorrow.



In 2021, we reported more than **\$253 million in overall trenchless revenue**, marking only the second time any company exceeded \$200 million in *Trenchless Technology's* ranking. This includes more than **1,500 projects during the past 5 years**. We have experience tunneling in soft ground, rock, and mixed ground, over a range of tunnel diameters and curve radii. We completed the work deploying an array of trenchless technologies, including providing micro-tunneling and preparing geotechnical baseline reports (GBRs), at the forefront of industry standards.

In addition to our trenchless services and utility coordination, we provide all required state and federal regulatory requirements to get the job done. We are fully committed to providing all levels of support needed for the relocation of utilities currently installed on the bridge. To achieve your desired outcome, proposed Project Manager **Mike Stickley, PE**, brings you a collaborative, talented team that specializes in working in the Florida Keys.

## Geotechnical Engineering

Managing ground risk is a critical component of many trenchless tunneling projects; we provide highly skilled and experienced in-house capabilities in this area. We've engaged this capable geotechnical engineering team to continue building on the valuable input they provided during the preliminary design as the project advances into final design. They are fully qualified and experienced with design-build delivery and asset management.

## Jacobs Brings Recognized Expertise to the City of Key West

In addition to our expertise and industry leadership on trenchless and conveyance projects, Jacobs has enjoyed regular recognition from industry publications and organizations. *Engineering News-Record* has honored

**Jacobs as #1** in its list of **Top 500 Design Firms** for the fourth consecutive year—meaning that our work and specialization outpace our competition. You receive the benefit of this expertise and a proven knowledge base to drive an innovative vision for your project. In addition, Jacobs has been recognized by the American Society of Civil Engineers (ASCE) as one of the best-managed consulting engineering firms in the country, ranked on *Fortune's 2021 World's Most Admired Companies List* and *Forbes' Best Employers for Diversity 2020*. As our company has grown, so has our reputation for stability, trust, and management, with full in-house capabilities to meet each project's need.

Engineering  
News-Record  
ranked Jacobs No. 1  
in its list of Top 500  
Design Firms in the  
world in 2021.

We've held a **top five**  
position in the Top 500  
list since ENR's rankings  
began in 2003, and  
for a **fourth consecutive**  
year, we're excited to be  
at the **top spot**.

**Jacobs** ENR  
Ranked **#1**

- Top 500 in Design Firms
- Combined Design & CM-PM
- Site Assessment & Compliance
- Sanitary & Storm Sewers
- Sewer & Waste
- Wastewater Treatment Plants

- Water Transmission Lines & Aqueducts
- Bridges

**#2**

Our philosophy of *boundarylessness* is not limited by internal organizational boundaries, by resource type, or by technical capabilities. In every case, we do whatever it takes to achieve the best solution for our client. Our extensive network of offices enables us to customize services to meet client needs by drawing on our resources and nationally and globally recognized specialists, using our sophisticated, state-of-the-art network technology. **We have perfected the art of successful remote team collaboration via Microsoft Teams and Skype, giving the City of Key West immediate access to our key team.** Our extended team includes approximately **460 in South Florida alone, with 1,300 in Florida overall**. We offer capabilities in all disciplines required by the City, with a bench strength backing every specialization in any technical discipline throughout the duration of your project.

## Our Partners

|                                 |  |
|---------------------------------|--|
| <b>Firm:</b>                    | Avirom & Associates, Inc.  |
| <b>Background and Services:</b> | Our subconsultant, Avirom & Associates, Inc. offers extensive land surveying experience in Monroe County and throughout the Florida Keys, dating back to 1981 when the firm was established. This long-term presence provides Avirom & Associates, Inc. with the knowledge and expertise necessary to fulfill geographic information system (GIS) mapping and land surveying services under this contract. Additionally, Avirom & Associates brings a successful history in Key West, including work determining US Navy construction easements, providing base surveys for storm water and wastewater design projects, and performing mapping on contamination assessment projects. Services include aerial and conventional topographic mapping, National Geodetic Vertical Datum (NGVD) benchmarking, global positioning system (GPS) controls, utility locations, and inverts. |
| <b>Firm Contact:</b>            | Keith M. Chee-A-Tow, P.S.M.<br>Phone: (561) – 392.2594   Email: <a href="mailto:keith@aviromsurvey.com">keith@aviromsurvey.com</a>   |

|                                 |   |
|---------------------------------|---|
| <b>Firm:</b>                    | Cummins Cederberg, Inc.   |
| <b>Background and Services:</b> | One of Florida's foremost coastal resilience and shoreline protection firms, Cummins Cederberg works with clients and communities across South Florida, including several projects with Jacobs. Cederberg Cummins, Inc. conducts numerous benthic surveys and monitoring programs and will support us throughout the permitting, agency coordination, and compliance phases of this projects. Many of their projects have been in the Florida Keys and followed National Oceanic and Atmospheric Administration and Florida Department of Environmental Protection survey protocols and methodologies. Cummins Cederberg brings a collection of qualifications and experience with staff dedicated to providing a superior level of quality, responsiveness, and flexibility. Cummins Cederberg will work directly with Jacobs and state, county, and federal agencies to obtain authorizations (i.e., permits and licenses) and provide coordination before and after the surveys and reporting. |
| <b>Firm Contact:</b>            | Anne Laird, Senior Project Manager<br>Phone: (305) 741-6155   Email: <a href="mailto:alaird@cumminsCederberg.com">alaird@cumminsCederberg.com</a>   |

## 5. Methodology and Approach



## 5. Methodology and Approach



### 5.1 Project Understanding and Background

Our project understanding is based on our team's performance of your feasibility study and evaluation of this trenchless utilities installation across the Fleming Channel. This intimate knowledge of the project enables our trenchless engineer, Robert Martin, to pick up the design quickly and lead our team in advancing the work to meet the tight schedule. **This thorough understanding includes the project's challenges**, such as the geology and how it affects tunneling and the key issues associated with the utility relocation. We also understand it is critical to gain stakeholder input and buy-in during initial stages of design, requiring collaboration with the US Coast Guard, US Army Corps of Engineers, Keys Energy, Florida Key National Marine Sanctuary, and Florida Keys Aqueduct Authority

Our background with this effort enables our team to deliver the project efficiently, with no time needed to learn the history. This means we can start work immediately to achieve your critical design and construction schedule to relocate the aerial utilities from the Fleming Key bridge. We already prepared the permitting documents and advanced the trenchless design to where we understand the numerous technical challenges your project faces. We also understand the paramount need to involve the numerous stakeholders and how critical it is to communicate with them when negotiating easement requirements. Our team brings experience from numerous similar, challenging trenchless projects with multiple stakeholders and can support you in negotiating with the Navy for the required easements.

The main project scope involves designing and constructing two (2) secant pile shafts on either side of the channel, for use as launching and receiving pits enabling a microtunnel boring machine (MTBM) to install a 72-inch steel casing. **The project then relocates the utilities currently running along the bridge from Trumbo Point to Fleming Key into the new steel casing.** This includes a 30-inch sanitary sewer force main, a 12-inch reclaimed water line, an 8-inch domestic water line, and four, 4-inch electrical conduits. We confirmed that the domestic water line, reclaimed water line, and sanitary sewer force main installations can be permitted under Florida Administrative Code, Rule 62-555.314. This would involve either using welded steel pipe (jointless pipe) for all lines or placing the domestic water line and reclaimed water main in 24-inch and 18-inch casings, respectively. As an alternate to microtunneling, utility relocation could instead use horizontal directional drilling (HDD) methods. However, this approach could impact the Navy's RV park, expand easement requirements, and disrupt Navy operations conducted on Trumbo Point.

Starting from day 1, our utility relocation coordination manager, Javier Colignon, works closely with you and project **stakeholders to clearly define the connection points in the design documents.** This builds trust and a teaming relationship that supports streamlined decision making—especially regarding easement acquisition. Because hydraulic changes in the vertical profile of the water and wastewater pipes could impact the connected facilities upstream, it is important for us to work with you to determine the extent of those impacts and how to mitigate them. The scope also requires collaborating with the US Navy and US Coast Guard to determine the proper routing for utilities on their property, aligning the utilities between Fleming Key Road and the junction chamber before dropping them into the shaft to cross beneath the channel.

**Relocating the utilities from the bridge to the casing under the Fleming Channel protects them from potential future damage or accidental strikes.** An alternative for you to consider is to maintain the utilities on the bridge to provide redundancy. In this case, we would include valving disconnects and other appurtenances in the project to enable easy transfer between the two (2) sets of utilities.

**Exhibit 5-1 illustrates several of the key project issues and challenges we have identified.** Our understanding of these major challenges enables us to fully address and mitigate them as the design advances and with input from all stakeholders.



Exhibit 5-1. Map of Key Project Challenges

Each of these major **issues and challenges**, further detailed below, requires specific consideration and mitigation.

## Construction Constraints

### 1 Key West Mainland and Fleming Key Bridge Weight Limit

The bridge between Trumbo Point Annex and Fleming Key has a 37-ton weight limit for a double tractor trailer truck, **as shown in Exhibit 5-2**. Because microtunneling equipment and drill rig needed to construct the two (2) secant pile shafts could greatly exceed these weight limits, we wouldn't be able to use that bridge to move the equipment to Fleming Key. We propose to assess the weight requirements and identify potential alternatives to transport the equipment on and off the Key, including disassembling and reassembling the equipment. We can also evaluate moving the materials and equipment by barge.

**Fleming Key has two (2) locations we could potentially use to transfer the equipment in a timely fashion. We will further review and explore these options during design to identify the location with the least impact to stakeholders.**



*Exhibit 5-2. Weight Limit Sign on Bridge to Fleming Channel*

### 2 Critical US Navy and US Coast Guard Infrastructure

The US Navy and US Coast Guard have mission-critical infrastructure near the locations identified for access shaft construction and for equipment staging and laydown—including a JP 8 Navy fuel line. To prevent damage or impacts from microtunneling and utility relocation operations, it is vital that the contract require the contractor to map this infrastructure before mobilizing equipment to those areas and to install identifying warnings and barriers, as needed.

### 3 Fleming Key Channel

The fast-moving currents caused by channelized tidal flows between Fleming Key and the mainland present challenges for any work required in the water, including use of a barge to move materials from the Key to Trumbo Point and back. This channel also has heavy boat traffic to and from the marinas. Because it is important to keep the channel clear for this traffic, the contractor needs to properly secure any barges they use and mark them with lighting and other markers to prevent accidents.

## Construction Logistics and Coordination

### 4 Material and Equipment Delivery and Spoils Removal

The MTBM, drill rig, and materials—such as the 72-inch casing—need to be delivered to the site. Also, installing shafts and performing tunneling operations generates significant spoils requiring removal from the site. A combination of approaches are likely required for this transport. Approaches we've identified for review during design include using barges and available docking facilities or using trucks for transport. Options for the excavated material include reuse in other areas of the Florida Keys, which requires consulting with local agencies and with the Florida Department of Environmental Protection (DEP) to verify we adhere to regulations for material management and disposal. The preferred approaches will be included as documents for construction in the contract.



### 5 Mainland Impacts

Access shaft construction, microtunneling, and utilities relocation temporarily impacts Naval Air Station Key West's Trumbo Point campground and recreational vehicle (RV) park along Fleming Key Road. As the campground is a prized asset for active and retired military, our approach is to coordinate with RV park managers and the US Navy and US Coast Guard early in design to establish construction approaches, work areas, laydown sites, and a schedule that maintain access to this valuable resource and other key facilities with minimal disruption.



## 6 Controlled Site

As parts of the project take place on a secure US Navy and US Coast Guard base, an initial step in our design process involves confirming and reaching out to the list of key, stakeholders from these organizations, including staff, to help guide our approach. We then include them in workshops and provide them opportunities to review developing design documents to solicit their input, which is critical to project success.

*We regularly work on and with military bases requiring limited or restricted access.*

By coordinating with security personnel, we can verify the contract documents reflect the requirements for contractor site access and work, helping avoid work delays. This includes providing detailed communication protocols to keep key stakeholders informed and involved throughout construction.

As a retired military officer, our trenchless lead, Robert Martin knows what it means to work on and with military personnel. Mike Stickley also has a military background, having performed numerous USACE projects on military installations throughout the US, with clearance and access restrictions

## 7 Fleming Key Impacts

Similar to the mainland impacts, access shaft construction, microtunneling operations, and utility relocations will impact Fleming Key. We mitigate these impacts by coordinating with the US Navy, US Coast Guard, and other stakeholders to detail any requirements and limitations within the contract documents and maintain access to key facilities—including the temporary access road.

## 8 MTBM Retrieval

Options for retrieving the MTBM including using barges at the available docking facilities or providing overland transport with trucks. Again, Fleming Key Bridge weight limitations may require the contractor to break down the MTBM and other equipment for transport. After obtaining feedback from the US Navy, US Coast Guard, the City, and other stakeholders, we will incorporate the preferred options in the contract documents.



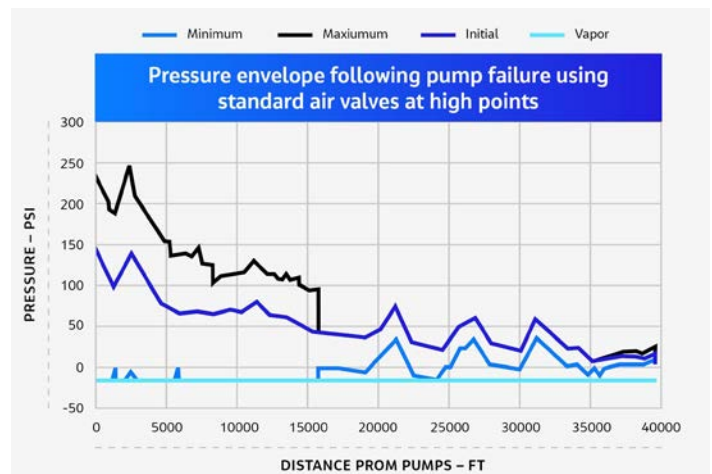
## 9 Utility Transfer and Coordination

Early coordination with the City and utility owners is critical to transfer the utilities from the bridge to the new casing under the channel without interrupting service. This includes defining connection locations, methods, and installation corridors to relocate the utilities from the connection point to the 72-inch casing. Again, this involves working with the US Navy and US Coast Guard to determine routing for utilities on their property.

## Design and Permitting

### 10 Hydraulic and Surge Analysis for Existing System

The 8-inch water main and 30-inch force main crossings via the bridge have a relatively flat profile. Installing the new, microtunneled carrier pipe more than 50 feet below grade creates a significant drop for the pipes on the mainland side and a similarly significant rise on the island side. This requires us to evaluate the change in grade for impacts to upstream pump stations and to analyze the potential for surge. **Our hydraulic and surge modeling experts quickly evaluate these impacts (see Exhibit 5-3 for an example) and develop mitigation approaches.** As a conveyance leader within Jacobs, Project Manager Mike Stickley brings valuable experience with hydraulics, surge analysis, and mitigation.



*Exhibit 5-3. Hydraulic Surge Analysis, City of Mobile, AL; enabled City to mitigate surge through air release*

## 11 Environmental Concerns and Permitting



The ecosystem around the Fleming Channel is frequented by manatees and sea turtles and contains corals, seagrass, and other sensitive species. Our permanent presence in the area as a major wastewater facility operator deeply informs our understanding of the environment's relevance and value for the people of Key West. It is vital that we include specifications and guidance enabling the contractor to perform work without disrupting or damaging this treasured ecosystem.

Maintaining project schedules and budgets requires the understanding and cooperation of local, state, and federal permitting agencies. While our experience with relevant agencies for this project enables us to streamline the permitting process, we do not rely solely on these established relationships to get the task done. We conduct pre-application meetings with each agency to explain the project, confirm the proposed permitting approach and necessary environmental surveys and studies, and prepare them to receive and review our completed application.

This process is based on our previous experience permitting subaqueous microtunneling on other projects for the City, such as the Zero Duval Bulkhead Repair, Fleming Bridge Piling Repair, and Patricia and Ashby Stormwater Improvements.

For a recent project to collect a geotechnical boring in Fleming Channel, we obtained a South Florida Water Management District (SFWMD) Permit Exemption Verification within 1 month of application submittal and secured a USACE Nationwide Permit within 3.5 months. We coordinated with the US Coast Guard on safety requirements and negotiated terms with the Florida Keys National Marine Sanctuary (FKNMS) regarding proposed methodologies, enabling us to eliminate the benthic resources survey requirement to obtain the boring.

Working in this pristine and highly protected environment with endangered and threatened species requires coordinating with the Florida DEP to verify the design adheres to recommended utility standards. There is the potential for this project to be exempt from state permitting, depending upon the final design and associated impacts. Our review of USACE permits shows potential for coverage under the 2021 Nationwide Permit (NWP) 58 Utility Line Activities for Water and Other Substances and NWP 57 Electric Utility Line and Telecommunications Activities, previously combined under NWP 12 Utility Line Activities. A pre-construction notification is likely required due to the permit conditions and Jacksonville Regional Conditions. We anticipate project design and construction to proceed according to the National Marine Fisheries Service's Jacksonville District's Programmatic Biological Opinion (JAXBO) (November 2017) category of in-water activity.

Each agency's requirements influence project design, construction methods, and impacts, which we intentionally develop to aid in the review process, where possible. We hold a pre-application and coordination meeting with the applicable agencies to receive cross-agency input early in the schedule, at approximately 30% design. Incorporating this feedback enables us to submit a thorough and complete permit application, minimizing permitting delays due to agency requests for additional information and avoiding costly re-work.

### 5.2 Technical Approach

Exhibit 5-4 shows our proposed schedule. As the timeline for this project has slipped, we adjusted our schedule to make up some of the lost time—which is possible due to our in-depth knowledge of the project and stakeholders.

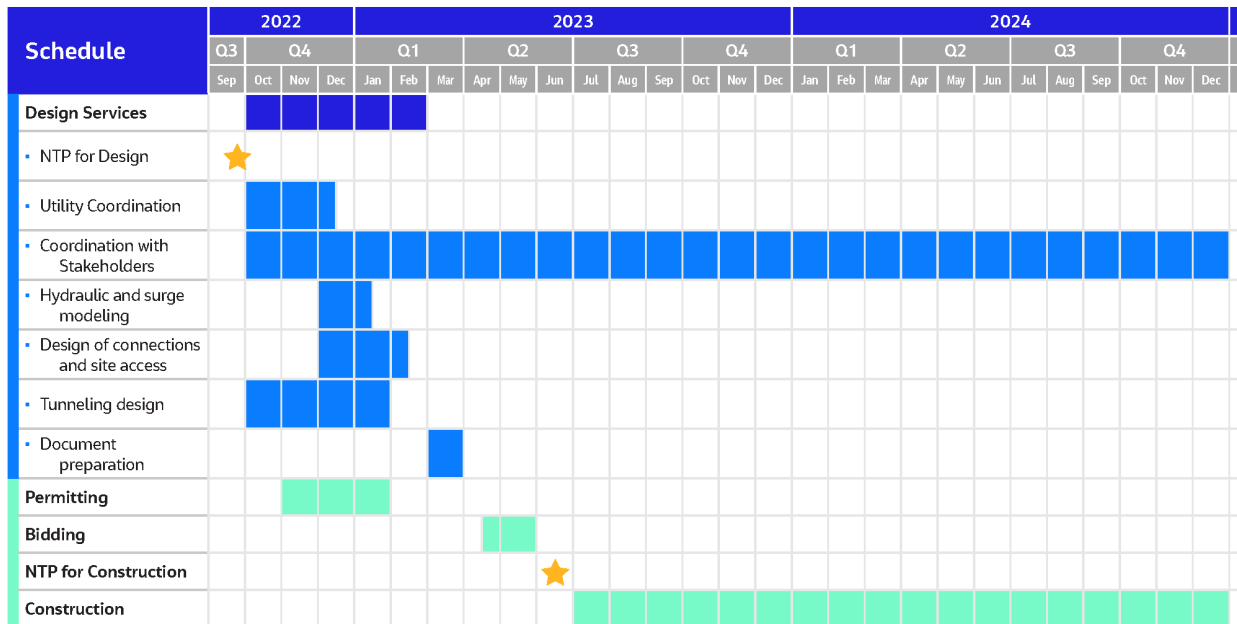


Exhibit 5-4. Proposed Schedule

5.2.1 Project Management to Meet the Deadline

We manage projects using an enhanced, traditional delivery approach emphasizing early risk management to achieve your project delivery, technical delivery, and stakeholder and community metrics. Exhibit 5-5 illustrates the five, key steps in our demonstrated, proprietary project delivery system, which we developed to provide world-class project delivery, on time and on budget. The process begins by developing our project management plan (PMP) based on your specific project needs, clearly defining roles and responsibilities and aligning the team on the scope, schedule, budget, and quality requirements. Our key management procedures are based on our experience with the practices, processes, and capabilities needed to achieve objectives for successful project delivery.



Exhibit 5-5. Project Delivery Approach

5.2.2 Schedule Goals

This project’s accelerated schedule requires a project manager who knows how to accomplish the effort’s specific goals, while also managing the many project nuances and the surprises that inevitably arise. This involves tracking changing market conditions affecting contractors, equipment, and pricing; constantly evolving legislation affecting permitting agencies; and various needs of your diverse stakeholder groups to keep your project a step ahead and maintain schedule. Project Manager Mike Stickley and Trenchless Engineer Robert Martin bring a combined 50 years of experience delivering similar pipeline projects to achieve our clients’ goals—including numerous projects with complex and challenging installations.

Mike understands early, frequent communication is vital to keep the project on track; he works closely with the City and stakeholders to keep you up to date and maintain schedule while meeting the budget. Our project



management tools enable him to closely follow the schedule and immediately seek remedies for schedule slippage and capture opportunities to advance work.

These demonstrated tools include a risk register to identify, track, and respond to risks and software like ProjectWise, SharePoint, and Bluebeam to provide continuous quality control. Through them, we give you and your stakeholders access to the project design documents for accelerated, collaborative reviews.

### 5.2.3 Risk and Opportunity Management

We develop a risk and opportunity management strategy to describe the concepts and processes guiding our design activities. **The strategy provides a thorough, uniform approach to identify, analyze, monitor, and manage project risks while providing appropriate responses to each risk throughout the project.** We incorporate this process into each phase of our work, continually updating the processes based on key work activities. This proactive management tool enables us to control of risks and opportunities, keeping the design on track to meet the project goals and objectives. These processes, built on industry-established best practices for risk management and control, include:

#### ✓ Risk Identification

We use a risk and opportunity register as primary presentation tool to keep you apprised of project risk and opportunities and to manage risks and opportunities across the project. We establish the initial register in a collaborative, workshop-style forum with the City and all stakeholders—but the process doesn't end there. As the project is executed and evolves, we resolve or retire some identified risk elements and add others that arise, sometimes through additional risk meetings and workshops. Our extended project team and subject matter experts (SMEs) supplement this identification process based on their knowledge and experience with the tasks to be executed and the project challenges. On the register, we sub-divide the risks by category and work phase. **Exhibit 5-6 shows the draft risk management plan and risk register** we've developed so far, based on our project knowledge; at project onset, we'll promptly work with your staff and stakeholders to further develop this preliminary effort.

#### ✓ Risk Assessment

Risk assessment is our process of determining the likelihood that an identified risk will occur and an evaluating the risk's impact on the project goal and objectives.

#### ✓ Risk Treatment

Risk treatment defines when and how we manage and control each element on the risk register. Depending on the level of each risk, we develop plans to avoid or mitigate it; transfer it to the appropriate project party for mitigation and management; or, if these actions are not possible, carry it.

#### ✓ Risk Monitoring and Control

Using the risk register to actively monitor and forecast project validates our risk management plan, which in turn helps the management and control teams actively control the threats and use opportunities that arise during project execution to accelerate the schedule, reduce cost, and achieve your project goals.

## Project Risk Management Plan

### Task Order: Trenchless Utility Relocation

| #              | Risk Category | Risk Statement  |   | Status              | Risk Treatment   | Contingency   | Triggers  | Assignee  |
|----------------|---------------|---|---|---------------------|--|---|---|---|
|                |               | Condition   | Consequence   |                     |  |   |   |   |
| Unique risk ID |               | Capture the likely cause of the risk. Be detailed enough so that you can start forming mitigation plans.  | Capture the result of the risk, should it happen. If the consequences cannot be mitigated, you will have to deal with them in a contingency plan. | Active or Inactive? | Document plans to lower the probability or to lower the impact ahead of time. It may require a more detailed plan written up separately.   | Identify what would have to be done if the risk were to become reality. This may require a more detailed plan documented separately.  | Identify what would prompt you to execute the contingency plan.   | Identify who is responsible for tracking this risk and its changes in probability and impact. The assignee is not necessarily the person responsible for solving the problem, as risks often require escalation outside the team. |
| 1              | Schedule      | Failure to complete the design by September 2022  | Consequences Include: (1) Compressed construction schedule, (2) Increased construction cost (3) Loss of funding                                   | Active              | (1) Development of a work plan that documents the detailed approach for delivery of the project. (2) Utilization of an experienced, integrated design team, (3) Active monitoring                                      | Work plan will include a recovery plan. Initial step will be to meet with the full design team to confirm the work plan, milestones, and recovery approach and obtain buy in  | Any time a milestone established in the work plan is not met.   | Mike Stickley   |
| 2              | Coordination  | Project work was not properly coordinated with all stakeholders (City, Coast Guard, Navy, Utility Owners, etc) and/or the input from the stakeholders was not captured in the design documents. | Consequences include (1) Project delays, (2) increased construction cost/change orders, (3) loss of stakeholder support and project buy in        | Active              | (1) Early workshop will be conducted to identify and develop a list of all stakeholders, including contacts and key decision makers at each (2) stakeholders will be involved throughout the design and review process | Immediately contact the stakeholder for development of resolution; inform the Project Manager and affected team principals, to enable proactive response and adaptations if needed  | Failure to receive comments or confirmation from a stakeholder that they agree with the design concepts         | Javier Colignon   |
| 3              | Communication | Failure to keep the stakeholders (City, Coast Guard, Navy, Utility Owners, etc) informed as to the project status or failure to notify stakeholders of critical information needs or events.    | Consequences include (1) Project delays, (2) increased construction cost/change orders, (3) loss of stakeholder support and project buy in        | Active              | Establish routine calls (weekly, at a minimum) with all stakeholders to ensure that they are actively involved and understand the status of the project.   | Immediately contact the stakeholder to determine if there is an issue and to reestablish communication related to the project.  | A stakeholder does not actively participate in the calls or is not providing comments/feedback                  | Javier Colignon   |
| 4              | Materials     | Suppliers were not contacted during design to inform them of the project and identify lead times on critical materials (casing, pipe, etc.)   | (1) Project construction delays (2) Increased project cost/change orders  | Active              | Contact suppliers every three weeks during design to determine market conditions and material availability   | Be prepared to quickly change materials of construction in the event something is identified that will not be available within the required schedule.   | Supplier identifies that there has been a change in availability or significant change in cost.                 | Mike Stickley and Robert Martin   |
| 5              | Construction  | Unanticipated subsurface conditions are found by the contractor during construction.  | (1) Project construction delays (2) Increased project cost/change orders  | Active              | Ensure that the contract documents are complete and baseline report and other contract documents present a representative summary of anticipated subsurface conditions   | Include provisions in the work planning and construction documents for such conditions to avoid the contractor building risk cost into his bid. Be prepared to rapidly resolve issues identified during construction to avoid construction delays and cost increases due to delays. | During contractor utility locates or construction at construction site an unmapped buried utility is identified | Javier Colignon and Robert Martin   |

Exhibit 5-6. Risk Management Plan

#### 5.2.4 Quality Assurance/Quality Control

Together, Mike and our quality control and quality assurance (QA/QC) manager, Andrew Bursey, verify our team follows our established, continuous quality processes. With quality as a key focus to deliver project success, we establish structured quality management plan to define expectations and guide our team to deliver work consistently meeting or exceeding those expectations. **Our QA/QC process, illustrated in Exhibit 5-7, provides an accurate, measurable system of checks and balances**, and operates on the principle that each individual task output, no matter how small, is reviewed and validated by designated members of the review team before being incorporated into the work. Andrew keeps a list of critical project elements, including identified risks and project milestones, and helps Mike establish and track measures for all items that need to be addressed.

**We view quality as a complete process, not just the result of reviews, tests, and inspections.** This means verifying that all materials and workmanship meet or exceed the defined, expected levels. By managing the design to meet project standards the first time, we avoid the need for corrections and rework and resulting adverse impacts to project cost, schedule, and team morale.

#### 5.2.5 Industry-Leading Cost Estimating

Our time-tested estimating system provides planning-level budget guidance to the quantity-price takeoff detail, enabling managers to make decisions on future activities based on accurate estimates and cost information. We have accurately estimated work scopes at all stages of design or construction and provide the local strength and capability to engage our cost estimating teams at any time, from early to final design estimates. **Our cost estimating record in the Florida Keys, South Florida, and throughout the US, on similar projects of all sizes, demonstrates that the estimating tools we use result in accurate pre-bid estimates.**

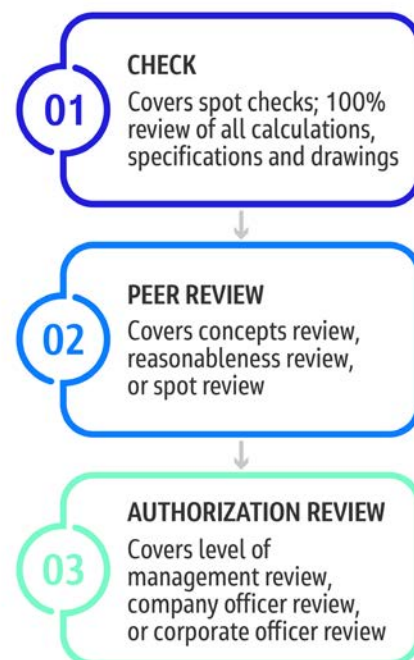
Our **lead cost estimator, Erika Smith**, is supported by our in-house construction group specialists, who contribute contractor and market perspectives when necessary. The availability of hard dollar cost estimators enable us to accurately reflect current market pricing in our estimates. **Our professionals use sophisticated estimating tools and perform more than \$1.5 billion in alternative and at-risk project delivery annually.**

##### Tools available to our estimators include:

- A continuously updated cost database developed exclusively for our water and wastewater infrastructure projects
- A risk management tool to determine risk and contingency at various points in the estimate
- An escalation calculation module to forecast construction cost escalation; we are the only firm using an escalation forecast tool with 17 project-specific indexes
- Access to commercial forecasting groups providing current price and trending to confirm the latest trends in material escalations, which significantly impact project delivery and price fluctuations and can affect the availability and delivery of specific commodities
- Close relationships with major equipment suppliers and tunneling contractors, who we can consult with to verify we capture all, up-to-date costs for your project-specific needs

Along with the robust process described above, our estimators connect with our network of contractor contacts performing work in the South Florida area to survey them on the bidding environment—measuring abundance of work, availability of labor, subcontractor activity, commodity pricing, and any other factors affecting pricing. We then apply our robust experience, tools, and organization to prepare accurate cost opinions reflecting the realities of today's volatile construction market.

#### Our Three-Step Process to Quality Control



The fundamental tenets of our project-specific QA/QC process are: perform the work correctly the first time, and check deliverables with a "second set of eyes"

#### NO EXCEPTIONS

*Exhibit 5-7. Three-level Quality Check Process*

## 5.3 Project Approach

### 5.3.1 Design Processes

Jacobs' hallmark is applying integrated design to all our projects, building our design teams to meet our clients' specific needs. An essential step to creating sustainable design, we build our teams to provide integrated design across the project lifecycle, from concept to completion. **Client stakeholders, regulatory/permitting staff, and engineers are all part of one integrated design team.** This collaborative involvement across key team members enables our designers to identify, consider, evaluate, and implement ideas and concepts that bring value to you and your stakeholders. In design, client satisfaction is directly related to project understanding and communication—and is our first priority on every project.

We tailor our detailed design process to meet your specific project needs, applying our project understanding to deliver on your goals and comply with your requirements. Because of the tight schedule requirements of this project, our approach is to submit one set of detailed design documents for review prior to completing the construction documents. **Using the basis of design established in the feasibility study as the conceptual design, we can move directly into detailed, 90% design.** This reduces our design process to two phases, helping regain some of the time lost on your schedule. Throughout design, we perform constructability reviews—crucial to success in relocating utilities with connections in tight spaces.

*The basis of the design was established in the feasibility study.*

*We can use the study as the conceptual design and move directly into detailed, 90% design.*

### 5.3.2 Design Development Phase

Design development builds on the basis of design to develop detailed drawings and specifications. Our engineers use design software to produce detailed 3D design models of the tunnel and pipeline route to identify and resolve conflicts and issues. **Collaborative workshops between our team and yours play a key role in the design development phase, enabling us to continually gain and incorporate input and evaluate drawings and layouts to resolve potential roadblocks.** Session participants review all designs developed to date in relation to the project goals and identify risks and mitigation strategies. Following review, comment, and consensus from this phase, we develop the final bid documents.

### 5.3.3 Bid Package Preparation Phase

The bid package preparation phase consists of producing the final drawings and specifications for the project. Based on all previous work, each design discipline proceeds with production. If warranted, drawing production includes completing the 3D models and extracting the plan and profile views to assemble for the contract documents. **Each engineering discipline produces its final specifications for the project, including all schedules and scope of work details.** We then perform a final constructability review of the engineering and procurement documents for accuracy and overall completeness. **Before releasing any construction documents for bidding, we conduct a thorough review verifying the documents are complete and correct.**

### 5.3.4 Constructability Reviews

Our QA/QC team works closely with your staff, contractors, and other relevant team members throughout design development to **deliver executable designs and specifications tailored to meet your schedule and budget requirements.** As part of these efforts, we review construction contract documents to verify **adequate quality for bidding and construction, eliminate ambiguities** that could lead to claims and disputes, **integrate construction knowledge and experience into the design process, and minimize disruptions to utility operations.** We also provide these reviews during construction to measure the extent to which contractors comply with the drawings, specifications, construction schedule, QA/QC requirements, and budget restraints in the project documents.

## 6. Personnel



## 6. Personnel

### Expert Local Management and Support Team

Overseeing our team of specialists is Project Manager Mike Stickley, PE, a key leader with experience delivering **trenchless utilities**. He is well respected and highly qualified to manage this diverse team and your project. Reflecting our commitment to you, this team is not just a representation of our capabilities—it is exactly the team that will work on your project.



#### Integrated, High-Performing Team

"A high-functioning, integrated team with a strong sense of purpose and unity is essential to delivering your trenchless utilities project."

Our team's unique skills complement each other, enabling them together to collectively meet and potentially exceed your expectations. These local, key staff are fully dedicated to managing and coordinating project meetings, workshops, and field investigations.

Having partnered with you for more than 35 years, our team is committed to and invested in the City's, long-term future. This service as your reliable partner means we know your expectations and challenges, enabling us to provide highly responsive, quality work, tailoring our activities and integrating lessons learned to meet your unique project needs and objectives. Our thought leaders committed to this project provide a fresh perspective on your trenchless utilities project.

You, in turn, benefit from our specialized team's demonstrated expertise, elevating the quality and functionality of your project. In addition to our planning and design expertise, we bring a unique perspective in the required safety protocols, security measures, regulatory permits, and sensitivity of the local environment.

### Why Jacobs? We Are the Team Who Can Deliver This Project



Your **Trenchless Installation of Existing Utilities Across the Fleming Channel** requires a team with demonstrated project management excellence and technical accuracy to meet your performance needs with strategies that minimize environmental impacts and overcome project challenges.

Our team members have been engaged in similar work for many years. Our history and understanding of detailed engineering design, combined with our record of delivery and innovation, provides you services balancing creative solutions with cost-effectiveness and practicality.

This capability makes our team the one to provide you comprehensive engineering design services for **trenchless installation of utilities** beneath Fleming Channel, from the Trumbo Point Annex to the Fleming Key.

We know the **critical issues to be addressed in Fleming Channel** and have already brainstormed ideas to approach them. Our key staff who **recently performed the *Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel*** is assigned to work on this next phase, benefiting you through continuity and the confidence that we are considering and accounting for our critical knowledge of key project constraints. **Because we have no learning curve**, we can jump in immediately and be productive from day one.

Through the feasibility assessment, we explored options to relocate the wastewater lines supplying the wastewater treatment plant, which are currently affixed to the bridge structure. The bridge spans approximately 460 feet across the channel from Trumbo Point to Fleming Key. There are currently seven utilities suspended from the bridge structure: one, 8-inch potable water line; two, 30-inch sanitary force mains; and four, 4-inch electrical conduits. In their current location, the lines are exposed and vulnerable to damage or failure, which would potentially impact the City's ability to treat wastewater and severely impair recovery efforts.

- ◆ **No Learning Curve.** We know this project like no other
- ◆ **A Team You Know.** Several of our key team members have served and supported the City
- ◆ **A Trusted Team Partner.** Our 35-year history performing successfully for the City is a testament of our capabilities
- ◆ **In-depth understanding** of state and federal agencies and permitting requirements
- ◆ **Sensitivity** to activities that would alter the balance of the ecosystem
- ◆ **Extensive knowledge** working on projects with similar challenges
- ◆ **Extensive experience** in trenchless and underground project delivery



## Mike Stickley, PE | Project Manager



As our project manager, Mike provides direction and highly effective leadership from nearly 3 decades of experience in project management. He is well respected and demonstrates the valuable capabilities required to lead and manage this diverse team. His extensive experience includes serving as lead designer, design manager, construction manager, and senior technical consultant for civil works projects, including water and wastewater treatment plants, conveyance, and storage. He has worked on **hundreds**

**of miles of conveyance projects throughout Florida, using challenging trenchless technology installation methods.**

As a leader in Jacobs' conveyance design and rehabilitation groups, Mike has served as the lead designer or senior technical consultant for more than **50 pump station, force main, manhole, and gravity sewer rehabilitation projects.** His trenchless experience and skill in using Jacobs' design process provides you a design meeting your goals and expectations, delivered on time, and achieving high-quality standards. Mike's skills include leading design teams to develop innovative solutions for the most challenging projects—work that benefits you directly on this project.

Mike specializes in managing challenging infrastructure projects, leading design teams to develop innovative solutions. His demonstrated record of successfully delivering projects throughout Florida includes projects within the Florida Keys. **He was closely involved in the Cudjoe Regional Wastewater Transmission System for the Florida Keys Aqueduct Authority,** serving as a senior technical consultant. His projects are consistently on budget and on schedule and meet or exceed client expectations.

### Mike has successfully managed complex, multi-disciplinary projects through an approach built on:

- A unique balance of technical expertise, big-picture perspective, successful anticipation and mitigation of issues, and effective team management to deliver projects safely and efficiently
- Experience in process management—from initiation and planning to design and construction
- Collaborative management style that fosters synergy
- Clear definition of team roles and responsibilities
- Clear communication of instructions and decisions to team members
- Proactive and frequent team coordination with project team and client staff, applying an open-door approach to foster ideas and solutions
- Project controls and tools to focus the team on achieving the scope on time and within budget
- Proactive monitoring of change and risk

### As project manager, Mike will be responsible for:

- Bringing leading practices from his experience delivering high-quality work
- Supporting the City by maintaining understanding of project requirements and challenges
- Directing technical and administrative requirements and assigning experienced personnel to the team
- Maintaining communication channels with team members through weekly meetings
- Including the City on all **key decisions** affecting the project
- Maintaining a **collaborative relationship** with the City to maintain alignment on project goals
- Swiftly resolving conflicts that may arise
- Maintaining the project schedule and budget by establishing a timeline meeting the City's needs



**Mike Stickley, PE**  
*Project Manager*

Mike is a **project manager** and **serves as a Jacobs senior conveyance technologist**, working on challenging projects throughout the US.

His leadership roles for design teams most recently include the design and permitting of a rapid infiltration basin project for Holley Navarre, involving multiple trenchless crossings of water bodies and wetland.

In Florida, he has completed numerous complex and challenging projects, such as design of pumping systems associated with deep injection well disposal of water that operate at pressures of up to 500 psi.

**100+ Projects Completed on Schedule**

**100+ Infrastructure Projects Completed**

**27+ Yrs. of Engineering Expertise**

**25+ Trenchless Technology Projects Completed**

**20+ Yrs. of Project Management Expertise**

**20+ Florida Conveyance Projects Completed**

## Overview of Key Team Members

We carefully evaluated the scope of work and assembled a top-ranked team to deliver every service needed to meet or exceed your requirements for quality, efficiency, and timeliness. **We structured our key team** to provide you with **highly qualified specialists** who are **recognized leaders in their field** and have demonstrated experience in their respective areas.



**John Elizabeth  
Aleman**  
Principal-In-  
Charge

John is an accomplished Fortune 500, information technology executive with emphasis in program management, software development, logistics, and transportation. An experienced program manager and decision maker, she is capable of driving numerous complex projects to successful completion. She specializes in developing and implementing strategic plans and strategies, solving complex business issues, and gaining buy-in across stakeholders. She is an influencer on issues of technology, resiliency, capital projects, land use and civic engagement. John possesses high-level initiative and assertiveness and excellent interpersonal, verbal, and written communication skills.

- 32 Years of Experience
- BSBA, Finance, University of Florida, Gainesville



**Robert Martin**  
Trenchless  
Engineer

Robert brings more than 23 years of comprehensive underground engineering experience on complex, diverse, and multidisciplinary projects. He also brings extensive tunneling and underground construction experience.

Robert provides soft ground and rock tunneling analysis, rock slope protection design, tunnel inspection and rehabilitation design, contract document preparation, geotechnical data reports, and baseline reports for underground and trenchless construction.

- 23 Years of Experience
- BS, Civil Engineering, University of Minnesota
- Professional Engineer:
  - MN (No. 44195)
  - WI (No. 41607)
  - OH (No. 77811)
  - TX (No. 118092)
  - NM (No. 26748)



**Andrew Bursey,  
PE**  
Quality  
Control/Quality  
Assurance  
Manager

Andrew has extensive experience with geotechnical site characterization, design of excavation support and permanent tunnel linings, ground improvement, risk management, construction planning and estimating, and preparation of construction contract documents.

Andrew also leads the design of tunnels and underground facilities and provides engineering services for underground construction projects. He has routinely had design and construction management roles on rock tunnel boring machine (TBM) tunneling projects for over 20 years.

- 27 Years of Experience
- MS, Geotechnical Engineering, Virginia Tech
- BSc.E, Geotechnical Engineering Option, Queen's University
- Professional Engineer:
  - FL (No. 76855)
  - GA (No. 034596)
  - NC (No. 038205)
  - MO (No. 2016022871)
  - NV (No. 025501)
  - TX (No. 135084)



**Javier Colignon**  
Utility Relocation  
Coordination  
Manager

Javier has provided leadership for the **Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel and Combined Sewer Overflow Project, Puerto Rico Aqueduct and Sewer Authority (PRASA) projects**. He is the local quality leader for Jacobs' water business in our South Region and has deep familiarity with the City of Key West's trenchless utilities project.

Javier has successfully managed water resources and sewer management projects that achieved client, community, and regulatory agency acceptance, and is adept at coordinating with multiple utilities.

- 30 Years of Experience
- MS/BA (Combined), Hydrology & Water Resources Science, Litoral National College, Argentina
- BS, Water Resources Engineering, Regionally Accredited Institution of High Education (U.S. Educational Equivalency)
- Professional Engineer:
  - TX (No. 139736)
  - PR (No. 28345)



**Leigh Ann Cannon, ENV SP**  
Permitting Lead

Leigh Ann brings more than 18 years of experience permitting for construction impacts to uplands, wetlands, benthic resources, and stormwater. She also has 6 years of experience implementing ISI's Envision sustainable rating system on infrastructure projects and obtaining certification awards.

Her other capabilities involve benthic resource inspections and mapping, wetland assessment, mitigation permitting and monitoring, and National Pollutant Discharge Elimination System (NPDES) industrial stormwater permitting and compliance.

- 18 Years of Experience
- MS, Biology, University of South Florida
- BS, Biology, University of South Florida
- Institute for Sustainable Infrastructure (ISI), Envision Sustainability Professional (ENV SP)

## Our Team is Available to Start Work

You can rely on Jacobs' experienced team to collaborate with City staff, key stakeholders, and government agencies to deliver a high-quality, cost-effective, and successful project. As the City remains a top priority for us for the foreseeable future, our key personnel and team are continually available and committed to support you.

We confirm that our proposed **project manager** and staff represented on our organizational chart have the capacity to serve in the roles they have been assigned. As a client-focused consultant, we offer a significant depth of additional staff resources throughout our Florida offices and across the country. This provides all elements of your project the necessary resources to fulfill your technical requirements efficiently and with maximum productivity throughout the work. We provide outstanding customer service and technical expertise with a commitment to the long-term success of your project.

The rest of this section comprises the resumes of our proposed team.

*"Our key team members are 100% committed to working with the City of Key West and are readily available to respond to your requests and deliver your project components, executing our contract efficiently, within budget, and on schedule."*

**Mike Stickley, PE**  
Project Manager



## Mike Stickley, PE

### PROJECT MANAGER

#### Education:

ME, Civil Engineering, University of Virginia

BS, Civil Engineering, University of Virginia

#### Registrations/Certifications:

**Professional Engineer:**

Florida, No. 85960

**Professional Engineer:**

Alabama, No. 24947

**Professional Engineer:**

Georgia, No. 030617

**Professional Engineer:**

Louisiana, No. 0040620

**Professional Engineer:**

North Carolina, No. 044268

**Professional Engineer:**

Tennessee, No. 124929

**Professional Engineer:**

Virginia, No. 026082

#### Years of Experience:

27

#### Distinguishing Qualifications:

- Extensive experience in design of ductile iron, fiberglass, and HDPE pressure and gravity systems
- Leads Jacobs' conveyance and rehabilitation groups and is specialized in pump station, force main, manhole and gravity sewer rehabilitation projects
- Experienced lead designer and design manager for hundreds of miles of conveyance projects including trenchless technology installation methods

Mike has 27 years of experience serving as lead designer, design manager, construction manager, and senior technical consultant for civil works projects, including water and wastewater treatment plants, conveyance, and storage projects. Throughout **Florida** and **Alabama**, he has **worked on conveyance projects totaling hundreds of miles in length, including challenging trenchless technology installation methods**. Mike serves as a leader in Jacobs' conveyance design and rehabilitation groups and has completed numerous pump station, force main, manhole, and gravity sewer rehabilitation projects. He has first-hand experience working on the Regional Reuse System serving as a design manager and **senior technical lead on Phase I**. His trenchless experience, along with his experience with Jacobs' design process, provide confidence in a design **meeting your goals and expectations, delivered on time, and achieving high quality standards**. His expertise includes coordinating with various stakeholders and end users for permits, easements, acquisitions and approvals, including the US Navy and USACE. He excels at leading design teams to develop innovative solutions for the most challenging projects and will do the same for the City.

#### Relevant Project Experience

##### Cudjoe Regional Wastewater Transmission System, Florida Keys Aqueduct Authority (FKAA), Florida Keys, FL

**Senior Reviewer** | Project provided for the sizing and design of pump station and transmission mains to sewer seven of the islands that make up the Florida Keys. Project involved construction of nine major lift stations along with 14 miles of transmission mains. Existing bridges were used for support of the force main between pump stations and islands.

##### South Mainland Pipeline Project, City of Cocoa, Cocoa, FL

**Technical Lead & Senior Reviewer** | Project consisted of approximately 35,000 LF of 42-inch ductile iron pipe. Project included four sub surface micro tunnels, one aerial crossing, and five sub aqueous crossings. Project traversed through several jurisdictions including Brevard County and FDOT.

##### Regional Reuse Phase I, Holley-Navarre, FL

**Design Manager/Senior Technical Lead** | Phase I provided for the design, bidding, and construction of a project that included approximately 5 miles of 18-inch transmission main, a 4,200 LF directional drill across the eastern end of East Bay, two trenchless crossings of SR-87, a pump station at the Holley-Navarre Wastewater Treatment Plant site, maintenance shed, and the development of 1.5 mgd RIBs on Eglin AFB. Project also included environmental and Department of Transportation permitting.

##### Plant Lansing Smith Pump Station & Transmission Main System, Gulf Power, Panama City, FL

**Design Manager/Lead Mechanical Designer** | Project consisted of a temporary pump station and transmission main system to inject ash pond water and reuse water into three wells. Two of the wells are approximately 2,000 feet deep and have an operating pressure of approximately 130 psi. The third well is approximately 7,000 feet deep and has an operating pressure of approximately 250 psi. The design flow rate is 500 gpm. The system includes filters, acid feed system, and surge protection. The purpose of the system is to dewater the ash ponds to allow their closure and to collect operational data on the wells for design of a future, permanent system.



Completed the basis of design for the permanent injection well system that will have a capacity of 2,800 gallons per minute and will potentially operate at a pressure in excess of 400 psi.

### **Brooks Bridge Water Main Replacement, Okaloosa County, FL**

**Senior Technical Lead** | Served as the senior technical lead for the installation of a 20-inch HDPE water line under Santa Rosa Sound to provide a long-term, reliable source of potable water and fire protection to Okaloosa Island. Work included a detailed route analysis to determine the best alignment for the crossing.

### **Pensacola Bay Water Main Alternatives & Emergency Response Plan, Emerald Cost Utility Authority, Pensacola, FL**

**Technical Lead** | Led the evaluation the water main that supplies water from Pensacola to Gulf Breeze by a 24-inch HDPE pipe main installed along the floor (or invert) of Pensacola Bay, parallel to the Pensacola Bay Bridge (State Highway 98). The main was installed by sinking the HDPE pipe with concrete anchors (or collars) weighing 3,000 pounds, at 10-foot spacings; based upon inspections, there was concern of the main failing its remaining service life. Conceptual plans and cost estimates were developed for replacement of the main. In addition, an emergency response plan was developed of alternatives to meet the water demand in the event the 24-inch main should fail.

### **Halls Mills Eslava Force Main Evaluation, Mobile Area Water & Sewer System, Mobile, AL**

**Mechanical Engineer** | Provided assessment of secondary raw water supply pump stations, reservoirs, canals, and pipeline as well as condition assessment and alternatives analysis for resiliency of the 13-mile prestressed concrete cylinder pipe (PCCP) force main conveying ~66% of wastewater flow in the City of Mobile. Work as part of this included a both an on-site and desktop review of the full 48-inch PCCP main and collection of operational data to allow calibration of a dynamic model to review the operating conditions within the main. A surge model of the system was also developed to determine the range of conditions the pipe has been subjected to since it was placed into operation. Preliminary alternatives for rehabilitation and replacement of the PCCP main were also prepared.

### **South Interceptor Forcemain Microtunneling Segment, Omaha CSO Program Management, Omaha, NE**

**Design Manager/Lead Designer** | This is a complex project that involves installation of eight miles of HDPE primarily installed by a combination of technologies to include horizontal directional drilling (HDD), open cut, auger boring, and microtunneling under highways, through a major shopping center, residential, and commercial areas. The project also included the selection and specifications of pumps to convey the sludge through the main along with design of a ferric chloride system to dose the chemical into the gravity sewer where the sludge will be discharged to prevent the formation of hydrogen sulfide.

### **Leeds Parkway Drive Pump Station Sanitary Sewer Overflow Elimination Project, Jefferson County, AL**

**Lead Designer** | This challenging project provides for the relocation of an existing raw water pump station from within an EPA Superfund site. The existing station is not sized to convey the current peak flow. Increasing the size of the station at the current site is not possible due to the heavy metal contaminate soils. The new station will have a 1 mgd firm capacity and a 100,000-gallon peak storage tank to reduce the potential for downstream sanitary sewer overflows. Additional work as part of this project includes realigning and/or replacing and upsizing existing sewers to provide the required capacity and where possible move sewers out of contaminated soils. The project includes four trenchless road and railroad crossings. Additional work included permitting, wetland delineation, detailed site survey, and geotechnical investigation to identify areas that are appropriate for installation of the new sewer in areas not contaminated by heavy metals.

### **Chapel Lane Sewer Relocation Project, Jefferson County, AL**

**Lead Designer** | The work involved relocation of a 48-inch ductile iron gravity main and several smaller diameter ductile iron gravity sewers, a ductile iron force main along with a flow control structure in direct conflict with a planned road extension by the Alabama Department of Transportation. The project was complex due to the 48-inch sewer being 50-feet below grade and mostly in hard rock. Approximately 600 feet of the small diameter mains along with a force main were relocated by microtunneling due to the requirement to cross under a creek and a six-lane interstate. The smaller gravity sewers were also in rock and extend to depths of 25 feet below grade. The lines were adjacent to an active interstate and in an environmentally sensitive area.



## John Elizabeth Aleman

PRINCIPAL-IN-CHARGE

### Education:

BSBA, Finance, University of Florida, Gainesville

### Registrations/Certifications:

N/A

### Years of Experience:

32

### Distinguishing Qualifications:

- Significant project management experience in large projects requiring multidisciplinary teams and several subconsultants
- Within budget and schedule delivery on all her projects
- Former City of Miami Beach Commissioner
- Proven results driving local economic development
- Proven expertise in developing strategic plans and implementation strategies, solving complex business issues and gaining buy-in across stakeholders
- Experienced decision maker and influencer on issues of Technology, Resiliency, Capital Projects, Land Use and Civic Engagement

John is an accomplished Fortune 500 information technology executive with emphasis in program management, software development, logistics, and transportation. She is an experienced program manager and decision maker, capable of driving numerous complex projects to successful completion. She has expertise in developing and implementing strategic plans and strategies, solving complex business issues and gaining buy-in across stakeholders. She is an influencer on issues of technology, resiliency, capital projects, land use and civic engagement. John possesses high-level initiative and assertiveness and excellent interpersonal, verbal and written communication skills. A forward-thinking leader, she **seeks to improve efficiency** in everything her team does, **verifying our project delivery meets your expectations and your long-term interests.**

### Relevant Project Experience

#### Jacobs Engineering Group Inc., Miami, FL

**Principal-in-Charge / Client Account Manager** | Responsible for financial performance and oversight of the project delivery and project team. Closely working with the project managers to ensure our project delivery meets the client expectations. Mrs. Aleman leverages her proven expertise building trusted relationships and partnering with governments, communities, businesses and organizations to help Jacobs' clients develop strategic project plans and implementation strategies to achieve their sustainability and resiliency goals.

#### City of Miami Beach, Miami Beach, FL

**Commissioner/ Chair, Land Use and Development Committee/ Vice Chair, Sustainability and Resiliency Committee/ Neighborhoods and Community Affairs Committee:** | John upzoned commercial North Beach Town Center via award-winning development overlay encouraging community revitalization and development investment, resulting in four development applications within 12 months. She sponsored Neighborhood Conservation District legislation to ensure quality of new real estate development while designating two new local historic North Beach MiMo neighborhoods.

John sponsored numerous initiatives as part of Miami Beach's strategic response to sea level rise, Resilient 305, including legislation and capital projects for critical stormwater, water and sewer infrastructure that resulted in flooding mitigations in the City. She sponsored projects to: reduce Miami Beach's Community Risk Score from 7 to 5, create innovative residential stormwater connections, fund marketing and education programs, formalize best practices and methodology into the Rise Guide, and create Historic District Resiliency Guidelines. She funded \$250K annually to educate Miami Beach residents on Resilient 305, to increase community engagement and support for the \$800M critical infrastructure update.

John created the "MB Resident Connect" public engagement system, garnering Florida League of Cities 2018 Citizenship Award and increasing public participation in government





## Robert W. Martin

TRENCHLESS ENGINEER

### Education:

BS, Civil Engineering, University of Minnesota

### Registrations/Certifications:

**Professional Engineer:**

Minnesota, No. 44195

**Professional Engineer:**

Wisconsin, No. 41607

**Professional Engineer:**

Nebraska, No. 13919

**Professional Engineer:**

Ohio, No. 77811

**Professional Engineer:**

Texas, No. 118092

**Professional Engineer:**

New Mexico, No. 26748

### Years of Experience:

23

### Distinguishing Qualifications:

- Expert knowledge of the City of Key West's engineering, permitting, schedule and overall process for the underground relocation of existing utilities that are currently affixed to the bridge structure.
- Specialized in the analysis of soft ground and rock trenchless installation, rock slope protection design, tunnel inspection and rehabilitation design, preparation of contract documents, geotechnical data reports, and baseline reports for underground construction
- Member of ASCE's Committee developing Auger Boring Manual of Practice (MOP)

Robert served as project manager for the City of Key West's **Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel**. He has expert knowledge of the engineering, permitting, schedule, and overall process for the underground relocation of the existing utilities that are currently affixed to the bridge structure. He brings more than **23 years of comprehensive underground engineering experience**, including projects for rail transit, water supply, wastewater, and mining.

**His experience includes construction feasibility assessments and design for soft ground and rock tunneling** using various methods, including drill-and-blast, road header excavations, full-face tunnel boring machines in rock and soil, **micro tunneling, HDD, and other trenchless methods**. He specializes in **tunnel condition assessment, design of tunnel repairs**, rock fall analysis, design of rockfall protection systems, design support and evaluation during construction, contract documents development, and geotechnical data reports and geotechnical baseline reporting.

### Relevant Project Experience

#### **Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel, Key West, FL**

**Project Engineer |** The City of Key West is considering the relocation of wastewater lines supplying the WWTP that are installed on a utility bridge spanning approximately 460 feet, across the channel from Trumbo Point to Fleming Key. A bridge failure would halt the City's ability to treat wastewater and would severely impact any corresponding recovery efforts. The City of Key West requested and evaluation of feasible Trenchless Installation methods beneath Fleming Channel is required to relocate the existing utilities underground that are currently affixed to the bridge structure. There are currently seven utilities suspended from the bridge structure, including an 8-inch potable water line, two 30-inch sanitary force mains, and four 4-inch electrical conduits. This project included the evaluation of tunneling methods to include HDD, microtunneling, pipe material consideration, constructability evaluation, 10% design and cost estimate preparation

#### **South Interceptor Forcemain Microtunneling Segment, Omaha CSO Program Management, Omaha, NE**

**Program Management Tunnel Lead |** The City of Omaha needed to develop an LTCP to identify methods to reduce the occurrence of untreated CSO to the Missouri River and Papillion Creek tributaries. A Consent Order with NDEQ was entered into in 2007 that required the completion of the project by 2024. The City selected a Jacobs-led team as its program management consultant, responsible for providing overall LTCP preparation and implementation of the overall CSO construction program. This project includes the development of construction management protocols and master specifications, performing technical reviews of projects include the review of sewer separation projects, and other controls such as retention treatment basins and tunnels to include the development, implementation and oversight of the recovery of a rock TBM using an 86-inch microtunnel boring machine and secant pile rescue shaft.

### **Mill Road MIS Relief Sewer Project, Milwaukee, WI**

**Project Engineer |** The Milwaukee Metropolitan Sewerage District (MMSD) is planning to construct a Mill Road MIS Relief Sewer to supplement the capacity of the 72-inch Relief Sewer to reduce SSO occurrence and basement backup risk. A new 60-inch RCP relief sewer is required with an approximate length of approximately length of 9,000 feet to be installed using microtunneling. This project included the evaluation of trenchless installation methods, develop scope of work for the geotechnical site investigation, geotechnical analysis, geotechnical baseline report, and development of technical specification and drawings related to the trenchless installation.

### **Cahaba River WWTP to Valley Creek WWTP Sludge Transfer, Force Main, Jefferson County, AL**

**Project Engineer |** As part of this project nearly 13,700 LF of 8-inch-high density polyethylene (HDPE) pipe and associated fittings is required using various installation methods to include HDD, microtunneling, and guided auger boring in soil and rock crossing major roadways such as State Highway 150, State Highway 31, and an offramp from Interstate 459. This project included coordination and development of a tunneling specifications, baseline of subsurface conditions summary, evaluation of tunnel liner and installation, and development of the contract drawings.

### **Catoma Wet Weather Improvements Program Phases II and III, Montgomery, AL**

**Project Engineer |** The project involved the construction of a 13-mile sanitary sewer interceptor to replace an existing, deteriorated and capacity limited interceptor. The \$29-million Phase II project involved installation of approximately 6 miles of 30-inch to 78-inch, majority 60-inch and 66-inch, centrifugally cast fiberglass mortar pipe (CCFMP). Phase II included the installation of four microtunnel undercrossing (two 96-inch diameter steel casing, one 66-inch diameter CCFMP direct jack, and one 30-inch-diameter CCFMP direct jack), construction of a three-barrel invert siphon, and crossing numerous environmentally sensitive wetlands and creeks. The \$30 million Phase III project includes the installation of approximately seven miles of mostly 78-inch-diameter CCFMP and includes four microtunnel undercrossing (two 96-inch diameter steel casing and two 78-inch diameter CCFMP direct jack) and crossing numerous environmentally sensitive wetlands and creeks. This project included the evaluation of trenchless alternatives for the proposed crossings, trenchless design of crossings, development of contract drawings and specifications, and on-site services during construction.

### **Barclay/4<sup>th</sup>/Chase MIS Replacement, Milwaukee, WI**

**Project Engineer |** MMSD required an expansion to sanitary tunnel system. The tunnels are located primarily below city streets in residential and industrial areas and crosses below a river and a major interstate highway. Issues include settlement risk, protection of adjacent property, methane gas, drawdown-settlement risk, low cover below the river and boulder and rock ridge obstructions. This project included construction observation and inspection of the approximately 11,000 feet of 48 and 72-inch ID sewer that was constructed by microtunneling at depths ranging from 20 to 70 feet in boulder glacial till, mixed-face and dolomite bedrock ridges.

### **Chapel Lane Extension Sewer Relocation, Jefferson County, AL**

**Project Engineer |** The Alabama Department of Transportation (ALDOT), in cooperation with the City of Hoover, has undertaken a project to extend Chapel Lane under Highway 459 to the Riverchase Galleria area to help improve traffic flow. It was noted that several sewer lines are in direct conflict with the proposed roadway and will require relocation. Approximately, 800 feet of microtunneling was required for the installation of the 60-inch steel casing in limestone and shale while crossing a buried valley. This project included evaluation of tunneling methods, evaluation of the tunnel liner and casing, geotechnical analysis, construction observation and contract document preparation for tunneling construction.



## Andrew Bursey, PE

QUALITY CONTROL/QUALITY ASSURANCE

Andrew leads Jacobs' Atlanta-based, tunnel engineering group and is **Jacobs' solutions lead for tunnels for our South Region**. He provides senior engineering review and constructability review for projects.

Andrew has **extensive experience with geotechnical site characterization; design of excavation support and permanent tunnel linings; ground improvement; risk management; construction planning and estimating; and preparation of construction contract documents**. He routinely consults on construction planning, provides constructability reviews, and supports construction management teams during tunnel construction.

### Relevant Project Experience

#### **Gravity Sewer Inceptors for Master Pump Station No. 3, Miami-Dade Water and Sewer Department, Miami, FL**

**Engineer of Record for Microtunnels** | 5,000 LF of 48-inch polymer concrete gravity sewer by microtunneling (MTBM) below the water table in soft Miami limestone. Tunneled under urban roads and overhead light rail lines in the heavily developed Brickell financial district. Design engineer for microtunnel and five shafts, 20 to 35 feet deep. Construction-phase engineering services.

#### **Port of Miami Tunnel, Florida Department of Transportation, Miami, FL**

**Senior Tunnel Engineer** | Twin 4,200-LF x 37-feet finished diameter road tunnels by TBM under the main Port Miami shipping channel, through Miami coastal sedimentary deposits, below Biscayne Bay. Geotechnical evaluations for design of open excavation supports. Technical specifications for cutter soil mixing and tension piles and designed open cut segment geotechnical instrumentation. Developed specifications for cross-passage ground support.

#### **Belmont North Relief Interceptor Section I, City of Indianapolis, Indianapolis, IN**

**Microtunnel Design Engineer** | 4,100 LF x 72-inch RCP installed by microtunneling under urban roads. Tunnel in glacial soils below the water table alongside the White River. Designed jacking pipe requirements and instrumentation program. Evaluated MTBM requirements and prepared microtunneling, jacking pipe, and shaft specifications. Geotechnical site characterization for design and bid documents.

#### **Lemay Redundant Force Main, St. Louis Metropolitan Sewer District, St. Louis, MO**

**Tunnel Engineer** | 3,200 LF tunnel crossing in limestone under the River Des Peres in St. Louis. Tunnel lined with 96-in PCCP liner constructed by rock TBM. Initial rock support design and geotechnical characterization of limestone.

#### **JEA Nassau Water Reclamation Facility Outfall/Reclaimed Water & Sewerage Force Main, Jacksonville, FL**

**HDD Design Engineer** | Two parallel 3,000 LF x 20-in HDPE pipelines, installed by HDD through sand, marl, and limestone under coastal wetlands and Lofton Creek, an active waterway. Planned and specified barge-based geotechnical exploration. Geotechnical site characterization and design of HDD bore paths based on geological model.

### Education:

MS, Geotechnical Engineering,  
Virginia Tech

BSc.E., Geological Engineering,  
Geotechnical Option, Queen's  
University

### Registrations/Certifications:

**Professional Engineer:**

Florida, No. 76855

**Professional Engineer:**

Georgia, No. 0345596

**Professional Engineer:**

North Carolina, No. 038205

**Professional Engineer:**

Maryland, No. 44979

**Professional Engineer:**

Missouri, No. 2016022871

**Professional Engineer:**

Nevada, No. 025501

**Professional Engineer:**

Texas, No. 135084

**Professional Geologist:**

Georgia, No. 1917

**Professional Geologist:**

North Carolina, No. 2305

### Years of Experience: 27

### Distinguishing Qualifications:

- Leads Jacobs' Atlanta-based tunnel engineering group
- Geotechnical site characterization
- Design of excavation support and permanent tunnel linings
- Risk management
- Construction planning and estimating
- Member of North American Society for Trenchless Technology

### **JEA Glen Kernan to T-Line Transmission Reclaimed Water Main, Jacksonville, FL**

**Senior Trenchless Engineer** | 12,000 LF of 8-inch through 30-inch reclaimed water main with 18-inch HDD crossing of I-295 (FDOT ROW) and 18-inch diameter HDD crossing under a creek and wetlands. Geotechnical analysis. Bore design and preparation of bid documents. HDD design and constructability reviewer.

### **JEA T-Line to Busch Drive Transmission Force Main, Jacksonville, FL**

**HDD Engineer** | 9,900 LF of 30-inch and 36-inch wastewater force main with HDD design and construction along I-95 and open-cut design and construction. The project included four HDDs for 36-inch HDPE pipe totaling approximately 6,800 LF for subaqueous crossings of creeks and wetlands. HDD design reviewer.

### **JEA South Shores Second Sub-Aqueous Force Main, Jacksonville, FL**

**HDD Engineer** | Design and construction of 5,200 LF of 36-inch force main. The project included a 4,000 LF HDD under the St. Johns River to install a 42-inch steel casing with 36-inch HDPE force main carrier pipe inside. Geotechnical analysis and geotechnical characterization for the design team. Preliminary HDD design including development of the preliminary bore path and preliminary HDD pipe design. HDD design reviewer.

### **GRU Lift Station No. 11 Force Main Replacement Phase I, Gainesville, FL**

**HDD Design Engineer** | 3,000 LF of 12-inch force main, including HDD crossing of a creek and associated wetlands. Force main alignment parallel to an existing force main and adjacent to an overhead power line. Geotechnical analysis and characterization. HDD design and preparation of related construction documents.

### **JEA Southside Blvd Intertie to Deerwood III Water Treatment Plant Water Transmission Main, Southside Integrated Piping System, Jacksonville, FL**

**Senior Trenchless Engineer** | Crossings including two bored crossings for 48-inch casing and senior reviewer for the 36-inch HDD crossing design and trenchless constructability. Geotechnical site characterization for trenchless designs.

### **Fairbank-Silverthorn CSO Tunnel, Drop Shafts, Collector Sewers and Outfall, Toronto, Ontario, CA**

**Senior Tunnel Design Reviewer** | Detailed design of a stormwater system consisting of 8200 LF of 14 feet ID soft ground tunnel with multiple shafts. Developed specifications for shafts and grouting and provided Senior QC review for contract drawings and specifications. Led tunnel risk workshop for the City of Toronto.

### **Plane Train Tunnel West Extension, Tunnel Engineering Construction Services, Hartsfield-Jackson Atlanta International Airport, Atlanta, GA**

**Senior Tunnel Engineer** | Approximately 900 LF of 22 feet high by 20 feet wide (single tube) to 22 feet high by 48 feet wide (twin tube bifurcation) tunnels, constructed in mixed face and rock conditions. The tunnels extend the western ends of the existing automated people mover mainline tunnels (north and south tracks), passing underneath the MARTA and SkyTrain stations and elevated tracks to create a turnback loop. Excavated using SEM techniques with drill/blast and mechanical excavation with lattice girders, crown spiling, rock bolts and shotcrete for initial ground support. Oversight of construction phase services including RPR and field engineering for the Airport. Consulting on blasting and instrumentation.

### **Maline Creek CSO Storage Facility, St. Louis MSD, St. Louis, MO**

**Senior Tunnel Engineer** | 3,000 LF of 28-foot finished diameter concrete-lined CSO storage cavern in limestone and shale, deaeration chambers, and microtunnel. Design engineer for initial rock support and excavation for pump station shaft, storage cavern, connecting tunnel, chambers. Designer for microtunnel in soft soil below the water table, alongside the Mississippi River. Provided construction-phase support to the Construction Manager.

### **Uchee Creek Water and Sewer Service Project, Columbus Water Works, Fort Benning, GA**

**Lead HDD Design Engineer** | Two 1,200 LF HDD river crossings between Georgia and Alabama under the Chattahoochee River, including a 20-inch HDPE water main and a HDPE sewer force main. Developed and specified geotechnical exploration program. Designed the HDD crossing. Evaluation and planning for construction. Prepared HDD and pipe specifications. Construction-phase consulting to the CM team.





## Javier Colignon

### UTILITY RELOCATION COORDINATION MANAGER

#### Education:

Post-graduate Studies, Sanitary Engineering, Universidad de Buenos Aires, Argentina; In Progress

MS/BA (combined), Hydrology and Water Resources Science, Litoral National College, Argentina

BS, Water Resources Engineering, regionally accredited Institution of Higher Education (U.S. Educational Equivalency)

#### Registrations/Certifications:

**Professional Engineer:**

Texas, No. 139736

**Professional Engineer:**

Puerto Rico, No. 28345

#### Years of Experience:

30

#### Distinguishing Qualifications:

- Extensive experience in South Florida and with the City of Key West
- 10 Hours OSHA
- Professional License in Argentina and Colombia

Javier has extensive experience working in the Florida Keys, including **five recent Florida Keys projects**. He served in leadership roles for the **Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel** and the **Combined Sewer Overflow Project, Puerto Rico Aqueduct and Sewer Authority**. He also participated on the **Ocean Outfall Legislation (OOL), Miami-Dade Water and Sewer Department (WASD), hardening and flood control for mail pump stations in WASD projects, and the Puerto Rico Aqueduct and Sewer Authority Capital Improvement Plan**. He is highly specialized in leading challenging infrastructure projects and complex water and wastewater projects. Javier has experience in all project management phases—from initiation and planning to design and construction—and is adept in coordinating with stakeholders to achieve acceptance, including clients, communities, and regulatory agencies. He specializes in project scoping, feasibility analysis, and US EPA regulations and consent decrees related to sanitary and combined sewer overflows.

#### Relevant Project Experience

##### **Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel, City of Key West, FL**

**Project Manager** | Responsible for delivering the basis of design. The team evaluated different trenchless installation methods to relocate the existing utilities currently suspended from the Fleming Bridge associated using trenchless installation methods. Reviewed the surface and subsurface conditions that impact the trenchless installation and identified considerations during construction that could impact feasibility of the trenchless installation method.

##### **Design, Permitting, Bid Phase and Construction Phase Services for the Rehabilitation of Pump Stations "C" and "E", City of Key West, FL**

**Project Manager** | Provided project management services, including team and stakeholder coordination, communication with the City, and cost and schedule management.

##### **General Engineering Services, Design of the Patricia and Ashby Neighborhood Piping Project, City of Key West, FL**

**Project Manager** | Provided project management services, including team and stakeholder coordination, communication with the City, and cost and schedule management.

##### **Ocean Outfall Legislation (OOL), Miami-Dade Water and Sewer Department (WASD), Miami, FL**

**Project Manager** | Planning, design, construction, and operation activities for this \$6 billion program. The OOL Program is one component of the WASD's comprehensive Capital Improvement Plan (CIP). This program aims to meet the service needs, accommodate future growth, and comply with federal, state, and local regulations. Javier identified specific program needs and prepared task orders to address each need. He also supported the improvements to the hydraulic model.



### **Combined Sewer Overflow Project, PRASA, San Juan, PR**

**Project Manager** | Javier managed this multi-year project, which characterized the Puerto Nuevo Sewer Collection System using GIS, sewer flow monitoring, and hydraulic and hydrologic model. The team also established hydraulic elevation in sewers. The sewer system treats approximately 75 mgd with pipes that measure up to 90 inches in diameter. Javier led the team that developed the project's scope of work, procurement process, contractor selection, and acted as the client's liaison with the contractors who performed field activities. Javier was also responsible for managing the development of annual reports, which were submitted to the U.S. EPA.

### **Capital Improvement Plan, PRASA, San Juan, PR**

**Consultant** | Javier worked directly with the PRASA Planning Director and advised on the feasibility of including proposed projects in the PRASA CIP. He assessed the projects' impacts on regulatory, technical, operational, financial, and funding aspects. Among others, Javier prepared a feasibility analysis to incorporate the water and wastewater facilities of the former U.S. Naval Station Roosevelt Road to PRASA infrastructure. The analysis included 1,370 acres of land, one water treatment plant, three wastewater treatment plants, and one airport.

### **Office of the Planning Director, PRASA, San Juan, PR**

**Special Assistant to the Planning Director** | Javier provided daily support to the PRASA Planning Director. He reviewed preliminary engineering reports, feasibility plans, and technical memorandums prepared by external consulting firms and other agencies. Javier managed the following projects on PRASA's behalf:

- **FY 2010 Water and Wastewater Master Plan.** As an update to the CIP, Javier led recommendations for 127 water treatment plants and 59 wastewater treatment plants. He was responsible for water demand estimates; wastewater service expansions; analysis of water supply; estimation of unaccounted-for water; addressing compliance issues with regulatory agencies and addressing climate change impacts.
- **Chapter IX, Sewer System Evaluation and Repairing Plan Consent Decree for EPA.** Javier served as Project Manager for flow monitoring (plan, implementation, and analysis), field investigation, and preparation of a Repair Plan Report for the island-wide program to control the I/I sources for 59 sanitary sewer systems.
- **2008 Clean Watershed Need Survey.** Javier was project manager for the survey, which identified the need to invest \$5.1 billion in Puerto Rico's watershed. The assessment was submitted to the EPA.
- **2007 Drinking Water Need Survey.** Javier was project manager for the survey, which identified the need to invest \$2.5 billion in Puerto Rico's drinking water. The results were submitted to the EPA.
- **2004 Clean Watershed Need Survey.** Javier was project manager for the survey, which identified the need to invest \$3.7 billion in Puerto Rico's watersheds.

### **SUEZ-Lyonnaise des Eaux-Water, Wastewater, and Water Resources Master Plan, ONDEO de Puerto Rico, San Juan, PR**

**Project Manager** | As part of ONDEO Water, Wastewater, and Water Resources Master Plan that provided the basis for the PRASA CIP, Javier was project manager for 78 municipalities for the wastewater master plan. ONDEO was the operator for PRASA'S entire water and wastewater system at the time.

### **Red River Army Depot (RRAD), U.S. Army Tank-Automotive and Armaments Command, Texarkana, TX**

**Water Discipline Engineer** | Javier supported RRAD's effort to minimize energy and water consumption, costs, and reliance on non-renewable energy resources while meeting all operation mission requirements and providing quality work conditions.

### **Broadway Corridor Project, San Antonio Water System (SAWS), San Antonio, TX**

**Project Manager** | This project is included in the Consent Decree lodged by SAWS and U.S. EPA. Project tasks involve the cured-in-place pipe (CIPP) rehabilitation of trunk sewers from 15 up to 60-inch diameter, 52 and 60-inch diameter tunnel; the construction of a new 36 to 42-inch diameter interceptor along the old area of the city with a restrictive number of utilities; and hydraulic relief structures, restoration of pavement and landscaping. The \$20M project includes the design (drawings, specs, cost estimation, public outreach), procurement support, and services during construction.



## Leigh Ann Cannon, ENV SP

PERMITTING LEAD

### Education:

MS, Biology, University of South Florida

BS, Biology, University of South Florida

### Registrations/Certifications:

ISI Envision™ Sustainability Professional (ENV SP)

### Years of Experience:

18

### Distinguishing Qualifications:

- Permitting experience in Key West
- Environmental resource permitting
- Specialized in permitting construction impacts to uplands, wetlands, benthic resources, and stormwater
- Field surveys/monitoring
- Established regulatory relationships

Leigh Ann brings more than 18 years of experience permitting construction for impacts to uplands, wetlands, benthic resources, and stormwater. She has 6 years of experience implementing ISI's Envision sustainable rating system to infrastructure projects and obtaining certification awards. Her project work involves environmental resource permitting with local, state, and federal agencies in the southeastern US, Puerto Rico, St. Thomas, and Bahamas for marine construction and dredging projects and upland development. Other specialties include benthic resource inspections and mapping, wetland assessment, mitigation permitting and monitoring, and NPDES industrial stormwater permitting and compliance.

### Relevant Project Experience

#### Fleming Bridge Piling Repair, City of Key West, FL

**Permitting Lead** | Received the permit and exemption verification for the installation of a fiber glass jacket around one damaged pile on Fleming Key Bridge. Obtained a DeMinimis Exemption from the South Florida Water Management District approximately two weeks after submitting the application and received the USACE Nationwide Permit just over two months after submitting the pre-construction notification. To support application processing, the submittal included the U.S. Fish and Wildlife Services' protected resources' construction conditions and Jacobs Benthic Resources Survey results regarding presence of corals and seagrass.

#### Fleming Channel Geotechnical Boring, City of Key West, FL

**Permitting Lead** | Permitted the collection of one geotechnical boring in the Fleming Channel in preparation for the utility pipeline replacement. Coordinated with Florida Keys National Marine Sanctuary and, based upon best management practices, eliminated the need for benthic resources survey prior to boring collection and received a Letter of Authorization to supplement the USACE permit. Obtained an Exemption Verification from SFWMD within three weeks of application submittal. Received the USACE NWP within three months of submitting the pre-construction notification utilizing the Jacksonville District Biological Opinion (JAXBO) superseding. This strategy reduced the consultation commenting period from potentially 6 to 8 months down to approximately one month. Application processing also included consultation with the U.S. Coast Guard regarding potential safety and noticing requirements.

#### Patricia and Ashby Street Underground Injection Well and Stormwater Retrofit, City of Key West, FL

**Permitting Lead** | Obtained Dewatering and Stormwater Retrofit General Permits from South Florida Water Management District to perform stormwater retrofit and improvements of over half an acre at Patricia and Ashby Streets. A federal permit was not required as the project was located in the uplands and did not impact wetlands or surface waters of the U.S. During the pre-application meeting, the agency believed an Individual Permit would be required; however, my research indicated otherwise. Jacobs submitted documentation supporting coverage under the General Permits which saved on application processing time and reduced the permitting fees.

The Dewatering Permit and the Stormwater Retrofit Permit were issued approximately two weeks and four weeks respectively after application submittal. The project was successfully constructed and is operational.

**Multiple Dredge and/or Construction Project Permitting, Miami-Dade Seaport, Miami-Dade County, FL**  
**Permitting Lead and Project Scientist and Manager** | Performed environmental surveys and obtained permits for over 18 Miami-Dade Seaport projects including **Oleta River State Park**, **Port Miami's Tunnel**, **Pilot Station Shoreline Stabilization** (riprap repaired due to hurricane damage, performed benthic resources survey and drafted coral relocation plan), **Harbor Widening**, **103 Authorization**, **Cruise Terminals J and 5**, dredge/fill and construction **Bulkhead and Wharf Projects** involving Berth 56, Wharf 7, Rip Rap Area 2 Bulkhead Extension and Rip Rap Area 3 Bulkhead Extension, and **Maintenance Dredging**. The **Pilot Station Rip Rap Repair Benthic Resources Survey and Permitting** project involved a shoreline stabilization project in which the existing rip rap was replaced to repair hurricane damage. A benthic survey was performed to detect all benthic communities where corals were located and identified requiring a coral relocation plan for the permitting process. The permitting process for all projects included application submittals to local, state, and federal agencies, organizing the benthic resources relocation and creating/handling the mitigation plan.

**Multiple Dredge and/or Construction Project Permitting, Port Tampa Bay (Tampa Port Authority), Hillsborough County, FL**

**Permitting Lead and Project Scientist and Manager** | Performed environmental surveys, creation of supporting documentation such as alternative sites analysis and essential fish habitat evaluation and obtained permits for over 20 Port Tampa Bay projects. Example projects include **East Bay Berth Development** (construction of 2,000 LF of bulkhead and dredging, upland creation, and off-site wetland creation); **McKay Bay Mitigation Site Monitoring** (5-year monitoring of 19-acre wetland creation mitigation site); **Berth 218 Improvements** (dredged 350,000 cubic yards from 14.59-acre berth and construction of a wharf for 70,000 DWT ships.); **Spoil Island 3D Weir Replacement Permitting and Design** (constructed two weirs on Spoil Island 3D); **Maintenance Dredge Permit** (25-year maintenance dredge permit of over 100 acres in the port); **REK Pier Facility Improvements** (reconstruction of pier facility and bulkhead and State Clearing House Processing.); **Berth 213-214 Improvements** (dredged Port Sutton Entrance Channel (420,590 cubic yards) and constructed marine structures); **Sparkman Channel Widening** (widened 2,998-foot section, 6.35 acres for navigational safety); **Department of Energy (DOE) Energy Efficiency and Conservation Block Grant Application** (preparation of an Environmental Assessment, Green House Gas Equivalence calculations, and preparation of Energy Efficiency & Conservation Strategy (EECS) for cruise terminals 2, 3, and 6 and berths 201-213); **Research for Beneficial Use of Dredged Spoil Material in Tampa Bay; Transportation Investment Generating Economic Recovery (TIGER) Grant Application** (narratives to support the TIGER Primary and Secondary Selection Criteria and analysis of long-term sustainability and safety outcomes resulting from alternatives for bulkhead and pier redevelopment for existing liquid bulk storage off-loading facilities).

**National Park Service, Biscayne National Park Rebuild from Hurricane Irma Damage, Miami-Dade County, FL**

**Permitting Lead and Project Scientist** | Permitting lead for the National Park Service's hurricane-related repairs at five project locations in Biscayne National Park. Activities involve collecting geotechnical borings, replacing the Adam's Key dock, repair/replacing the boardwalk, footbridge and docking facilities at Convoy Point Visitor's Center and Park Headquarters, and riprap revetment repair at the Black Point Jetty and Park Entrance Road. Permits/Exemptions were received from the Florida Department of Environmental Protection and USACE.

**National Park Service, Fort Jefferson Coral and Seagrass Survey, Monroe County, FL**

**Project Scientist** | Fort Jefferson in the Dry Tortugas sustained damage to the outer scarp moat wall from past hurricanes and storms. The National Park Service proposes to repair the areas however a benthic resources survey was required to assess the wall for presence, quantity, and quality of resources such as coral and seagrass species. The project involved performing a benthic survey inside and along the 1,700-foot-long moat wall and the area surrounding the fort. Over 4,000 individuals of coral species were identified and measured and a ground truthing survey for seagrass was performed within a 250-foot radius around the Fort.



## Rich Morrison, PE

CIVIL ENGINEER

### Education:

BS, Civil Engineering

### Registrations/Certifications:

Professional Engineer:

Florida, No. 67713

### Years of Experience:

19

### Distinguishing Qualifications:

- Numerous Projects in the Keys including sanitary sewer force mains, lift station rehabilitations, and storm sewer collection and pump stations.
- Numerous Projects with Trenchless Installations

Rich brings almost **2 decades of experience** designing a wide range of sites, including commercial, residential, solid waste, and water and wastewater treatment plants. He is **fluent in every component of site and civil design, including water and wastewater utility design**, site layout, grading, and stormwater conveyance and management. He also has extensive experience **designing water distribution systems and wastewater collection and transmission systems**. In addition, Rich has managed multiple projects and possesses a profound understanding of each project phase. He is proficient in MicroStation, AutoCad, ICPR, AFT Fathom, StormCAD, and FlowMaster.

### Relevant Project Experience

#### **Patricia and Ashby Streets Stormwater Improvements, City of Key West, FL**

**Lead Civil Engineer** | Design of stormwater collection system improvements. Design includes new inlets and gravity piping and verification of utility locations from record drawings.

#### **Patricia and Ashby Streets Stormwater Emergency Outfall, City of Key West, FL**

**Lead Civil Engineer** | Design of a stormwater force main. Design includes pipe routing and verification of utility locations from record drawings.

#### **Pump Stations Rehabilitation Phase 2, City of Key West, FL**

**Lead Civil Engineer** | Design of several sanitary sewer pump station improvements. Design includes replacement of gravity piping, generator layout, force main replacement, and verification of utility locations from record drawings.

#### **North Simonton Stormwater Emergency Outfall, City of Key West, FL**

**Lead Civil Engineer** | Design of a stormwater force main. Design includes pipe routing and verification of utility locations from record drawings.

#### **George Street Stormwater Basin Improvements, City of Key West, FL**

**Lead Civil Engineer** | Design of stormwater collection system improvements, stormwater pumping station, and a stormwater force main. Design includes new inlets and gravity piping, pump station layout, force main routing, and verification of utility locations from record drawings.

#### **Cudjoe Regional Wastewater Transmission System, Monroe County, FL**

**Lead Civil Engineer** | Provided detailed design for a wastewater conveyance system on three islands in the Florida Keys. Design of force mains includes buried PVC, ductile iron bridge crossings, and sliplining an abandoned water line with HDPE pipe.

#### **Innisbrook Force Main Improvements Project, Pinellas County, FL**

**Lead Design Engineer** | Design of an emergency replacement of an existing 42-inch sanitary sewer force main. The project included temporary piping bypass, open cut installation of a portion of the new replacement 36-inch PVC force main, and cleaning of the existing failed 42-inch force main for sliplining with the new replacement 36-inch fusible PVC force main.

### **SWWRF Upgrades (CMAR) Design Services, City of St. Petersburg, FL**

**Lead Civil Engineer |** This project included construction documents, new injection wells and wellhead improvements, piping, temporary pump station, and connections. Design and construction included three new injection and monitoring wells, and four CAR packages: (1) upgraded 16-inch reclaimed water main wellhead infrastructure to 24-inch; (2) temporary 22 mgd pump station using diesel driven skid mounted critically silenced centrifugal pump, and temporary HDPE piping to IW-4; (3) offsite IW-6 temporary connection to 30-inch reclaimed water pipeline; (4) update of 42-inch piping to IW-5 and reclaimed water loop.

### **Central Pasco Beneficial Water Reuse Project, The 4G Ranch Wetlands, Pasco County, FL**

**Lead Civil Engineer |** Design of a reclaimed water treatment and infiltration wetland system (15 cells, 140 acres total). Design includes site layout, grading, yard piping up to 24-inch diameter (8 miles total) including several HDD crossings.





## Erika Smith

COST ESTIMATOR

Erika brings more than **23 years of experience cost estimating for water and wastewater treatment facilities, solid waste facilities, and commercial construction projects.** She specializes in working with design and planning teams to develop conceptual, budget, and definitive construction costs.

### Relevant Project Experience

#### **Cahaba River WWTP to Valley Creek WWTP Sludge Transfer - Force Main, Jefferson County, AL**

**Cost Estimator** | Provided construction cost estimates for the force main. This project involved the design, bidding, and construction services of a force main that conveys waste activated sludge from the Cahaba River WWTP to a large diameter gravity sewer where the flow would be discharged in another treatment plant. Part of the design work included performance of a detailed route analysis.

#### **JEA Blacks Ford WRF, JEA, Jacksonville, FL**

**Lead Estimator** | Provided estimated construction costs for the expansion and re-purposing of existing plant systems and structures. The 3-mgd AADF expansion included a new headworks, process bioreactors, secondary clarifiers, effluent filters, and an expanded UV disinfection facility. Additional upgrades included a new biosolids processing facility, additional pumping and storage capacity for reclaimed water, and the repurposing of existing SBR for sludge digestion and reject storage. The completed work will provide JEA with a fully functional, operational, expanded and upgraded 6-mgd AADF Water Reclamation Facility.

#### **JEA Northwest Regional WTP, JEA, Jacksonville, FL**

**Estimator** | Provided estimated construction costs for two (2) wells, a ground storage tank, high service pump building w/ pumps, chemical feed, site work, raw water pipeline and a finish water pipeline.

#### **Southwest WTP Rehabilitation Improvements, City of Sunrise, Davie, FL**

**Estimator** | Provided estimated construction costs for the refurbishment of the existing reactor/clarifier, including replacement of existing cascading tray aerator, lime sludge sump pump, gravity filters, backwash pumps, high service pump hydrofluosilicic acid storage tank and metering pumps, transfer pumps; cleaning and restoration of concrete clearwell, new corrosion inhibitor solutionizing tank and metering pumps, new ammonium hydroxide storage tank and metering pumps; new liquid carbon dioxide storage tank and feed system; upgrading existing chemical building; new chemical building; demolition of existing sodium hypochlorite tank and canopy; including hydrofluosilicic acid tank, pumps, concrete vault, ammonia storage facility and hydro-pneumatic tank; new concrete chemical storage area with secondary containment for chemicals; yard piping; instrumentation and controls upgrades; electrical improvements including switchgear, adjustable frequency drives MCCs, duct bank, conduit, site lighting; resurfacing of asphalt areas; new asphalt pavement; and rehabilitation of two (2) ground storage tanks.

### Education:

BS, Building Construction,  
University of Florida

BS, Design, Architecture,  
University of Florida

### Registrations/Certifications:

N/A

### Years of Experience:

23

### Office Location:

Gainesville, FL

### Distinguishing Qualifications:

- Specialized in water and wastewater treatment cost estimating
- Experience with conceptual, budget, and definitive estimates

### Water and Wastewater Capital Improvement Program, PRASA, PR

**Lead Cost Estimator** | Provided cost estimates for the water and wastewater capital improvement program involving \$1.8 billion in improvements to Puerto Rico's water and wastewater systems. Program included the following facilities: water and wastewater treatment facilities, pump station modifications and conveyance.

#### **Turkey Creek WWTP Improvements, First Utility District of Knox County, Knoxville, TN**

**Lead Estimator** | Provided estimated construction costs for improvements of existing plant systems and structures. The project consisted of demolition of existing equipment and facilities, installation of new wastewater treatment equipment and facilities; fine screening and grit removal, ultraviolet disinfection, and post-aeration; thickened sludge pumping; centrifuge dewatering and dewatered sludge conveyance; site improvements, yard piping, and miscellaneous structures; and I&C and electrical improvements. The project also included new metal building with HVAC for sludge dewatering and a metal canopy to cover the new disinfection facility.

#### **Wilson Creek RWWTP Advanced Treatment & Headworks Improvement, North Texas Municipal Water District, TX**

**Estimator** | Provided estimated construction costs for improvements to the existing Wastewater Treatment Plant with future increase to 224 mgd. The Project consisted of the following work Headworks, Odor Control, Flowmeter Downstream Of Headworks, 32 mgd HRC2 System, Biocontact Tank Expansion, HRC Chemical Feed System Expansion, 30 mgd UV Disinfection For Plant 1, Secondary Effluent Splitter Box FOR Plant 2 and New Lift Station, Outfall Expansion, Interceptor Junction Structure, New Polymer Building, New Electrical Building, New High Rate Sludge Pump Station, HRC2 Influent Junction Box, SRS Meter Vault, Primary Influent Meter Vault, Plant Effluent Connection Structure, UV Influent Meter Box.

#### **Rowlett Creek RWWTP, North Texas Municipal Water District, Dallas, TX**

**Estimator** | Provided estimates for construction costs for improvements to the existing Wastewater Treatment Plant. The scope of work involved improvements to existing WWTP by adding 17.5 mgd of for a total 77.5-mgd and scope included the following improvements: Improvements to the influent flow control structures, piping and pumping (sized for the Phase 3 120-mgd P2HF), new combined headworks with 6-millimeter (mm) screening, two (2) trains of grit removal, and flow splitting new wet-weather pump station (60 mgd), new MBR basin (17.7 mgd), new in-line ultraviolet (UV) disinfection (20 mgd), improvements to the effluent junction structure and effluent piping (sized for the Phase 3, 120 mgd P2HF).



## Dave Everson, PE

### STRUCTURAL ENGINEER

#### Education:

BS, Civil Engineering, University of Wisconsin

#### Registrations/Certifications:

**Professional Engineer:**

Florida, No. 80180

**Professional Engineer:**

Wisconsin, No. 37456-6

**Professional Engineer:**

Michigan, No. 6201056328

**Professional Engineer:**

Ohio, No. 75030

**Professional Engineer:**

South Dakota, No. 9881

**Professional Engineer:**

Kansas, No. 20441

**Professional Engineer:**

Tennessee, No. 122292

**Structural Engineer:**

Illinois, No. 081.007670

**Structural Engineer:**

Georgia, No. 43558

#### Years of Experience:

22

#### Distinguishing Qualifications:

- Five years of experience in the design of Metal Building Systems, commonly used in water and wastewater plant design
- **ATC-45 Field Manual:** Safety Evaluation of Buildings after Windstorms and Floods, sponsored by ATC Endowment

Dave is a structural engineer with more than **22 years of experience and skills in all phases of engineering operations**. He has **design experience in wastewater treatment plant projects for private and public clients**. His knowledge of industry standards and his design capabilities are an asset to this project. His project experience involves reinforced concrete tanks, foundations, structural steel, reinforced concrete and masonry buildings, pile foundations, and retaining walls.

#### Relevant Project Experience

##### **Norwood Water Treatment Plant, City of North Miami Beach, FL**

**Lead Structural Engineer** | Project involved multiple phases of design. Phase I involved emergency safety repairs to the plant, which were issued in smaller packages to facilitate timely implementation. Phase II (Work Order 3) addressed updates and expansion to the existing RO/NF process. The main phase (Work Order 4) involved many new structures including new Chemical Building, High Service Pump Station, Maintenance and Lab Building, Backwash Reclaim tanks, Lime Softening Clarifiers, and potential new Filter structures.

##### **BSU RO WTP and Wellfield Phase II Expansion and Lime Softening WTP Improvements, Bonita Springs Utilities, Inc., Bonita Springs, FL**

**Lead Structural Engineer** | Project included new foundation design for Lime system and site wells. A new metal building was designed to be installed over an existing concrete filter structure. Detailed coordination required with General Contractor and Metal Building manufacturer to meet restrictions of installing on an existing structure.

##### **Lake Worth Drainage District, City of Lake Worth, FL**

**Lead Structural Engineer** | Project provides SCADA and Control Structure Electrical Improvements. Structural design included 20 new elevated walkways for channel level monitoring. Design also included foundation design for communication towers.

##### **Turkey Creek Wastewater Treatment Plant 2019 Improvements, First Utility District of Knox County, TN**

**Lead Structural Engineer** | Project included cast in place junction boxes, modifications and additions to existing headworks structure, UV disinfection facility with canopy structure, utility water pump structure, sludge dewatering building, modification to existing sludge bin facility including support for new conveyors.

##### **Ebenezer Basin Improvements, First Utility District of Knox County, TN**

**Lead Structural Engineer** | Project included a new 5.8 mgd below grade wastewater pump station, 1 MG wastewater equalization tank, electrical buildings, generator foundation, and surge tank foundation.

##### **Oak Ridge Water Treatment Plant, City of Oak Ridge, TN**

**Lead Structural Engineer** | Project included a new 16 mgd water treatment plant at the existing raw water intake site. New water treatment building consisted of a partially buried foundation and second floor office and mezzanine area constructed of cast in place concrete utilizing pan formed concrete joists. The building superstructure consisted of a steel framed building including an exterior tank farm under canopy. Other structures included dual cell concrete flocculation basins, 1 MG clearwell tank, and residual tanks.



## Agustín C. Quinoñes, PE

ELECTRICAL ENGINEER

### Education:

BS, Electrical Engineering, Southern Tech

### Registrations/Certifications:

**Professional Engineer:**

Florida, No. 89295

**Professional Engineer:**

North Carolina, No. 050282

**Professional Engineer:**

Puerto Rico, No. 17134

### Years of Experience:

29

### Distinguishing Qualifications:

- Extensive experience designing electrical systems for water and wastewater facilities
- Specialized in power distributions systems, instrumentation and controls, and construction support
- Electrical and I&C expertise on large, multi-disciplined wastewater projects, including two wastewater projects in the past 6 months

Agustín is an electrical and instrumentation and control (I&C) engineer with nearly 3 decades of experience in electrical design of water and wastewater treatment plants. His experience includes treatment plant construction and expansions, raw water intakes, and lift stations. His primary responsibilities are power distribution of low- and medium-voltage systems, motor controls, and support during construction. With extensive electrical design experience in Florida, Agustín offers knowledge in every phase of design and construction, from basis of design reports to detailed design, production of design building and traditional bid documents, bid phase services, and construction services such as submittal review, request for information responses, and startup and testing of electrical systems.

### Relevant Project Experience

#### Norwood Water Treatment Plant Phase II Expansion and Upgrade, City of North Miami Beach, FL

**Electrical Engineer** | Provided electrical design services for improvements and expansion of the water treatment plant. The project included upgrading the electrical plant distribution system, new electrical building for north region, new electrical building for south region, new filters, new maintenance building, new chemical building, new Lime silo system, new onsite production well, two new offsite production wells and new reactor clarifier. New switchgear, motor controls, medium voltage step down transformers, standby generators and paralleling system were included as part of the electrical improvements.

#### JEA Rivertown Supply Wells #7, JEA, Saint Johns County, FL

**Lead Electrical Engineer/I&C Engineer** | This project involved engineering, design, equipment specification, submittal review, construction supervision, site inspection and project startup for one new JEA supply well. Provided direct client interface and consultation, as well as key submittal reviews, direct client interface and consultation.

#### JEA Wellhead Rehabilitations, Fairfax Well 8 Wellhead, Jacksonville, FL

**Electrical Engineer/I&C Engineer** | This project involved engineering, design, equipment specification, submittal review, construction supervision, site inspection and project commissioning/startup for renovated supply well, as well as key submittal reviews, direct client interface and consultation.

#### JEA Wellhead Rehabilitations, McDuff Wellhead, Jacksonville, FL

**Electrical Engineer/I&C Engineer** | This project involved engineering, design, equipment specification, submittal review, construction supervision, site inspection and project commissioning/startup for renovated supply well, and also included key submittal reviews, direct client interface and consultation.

#### Econchate Water Pollution Control Plant Electrical Improvements, Montgomery Water Works & Sanitary Sewer Board, Montgomery, AL

**Electrical Engineer** | Provided electrical design services for the improvements and upgrading of the plant electrical distribution system. The electrical design included backup generator, paralleling switchgear, motor control centers, lighting and power distribution.

## 7. Qualifications



## 7. Qualifications

### Summary of Our Qualifications

The island community of Key West has a spectacular geography and ecosystem, rich cultural history, and economy driven by a mix of tourism, the fishing industry, the US Coast Guard, and the US Navy. It is also exceptional due to its location within the Florida Keys National Marine Sanctuary, providing special resources like coral reefs, seagrass beds and fisheries.



This project requires an exceptional team—the **Jacobs team**—to **balance the project's specific environmental, geotechnical, security, and safety challenges**. To address these challenges while delivering your trenchless utilities relocation and other, associated tasks you have identified, we

assembled a highly qualified team with extensive technical experience in South Florida and recognized capabilities in trenchless installation methods. These skilled personnel enable us to relocate the utilities suspended from the Fleming Bridge, manage surface and subsurface conditions, and provide design and permitting, while deftly coordinating stakeholder input and meeting deadlines.

Our team offers extensive knowledge of your utilities, a keen understanding of your project goals, and in-depth knowledge of the many challenges we must address and resolve. We have worked on highly complex projects completed under strict deadlines and involving coordination with the US Navy and their security protocols, neighboring residential communities, and regulatory agencies.

Our leadership collaborates directly with you to take this project from concept to completion. Your project benefits from our accessible regional and global subject matter experts and their experience working on challenging design and microtunnel engineering projects with similar scopes, permitting, and safety and environmental conditions, across various geographies.

Our proposed **project manager, Mike Stickley**, works closely with each discipline leader throughout your project to identify and innovatively resolve issues through cost-effective implementation strategies, resulting in long-term value. We supplement this in-house team of Key West and Florida resources with our talented, well-respected subconsultants, **Avirom & Associates, Inc. and Cummins Cederberg, Inc.**

**Avirom & Associates** has researched and recovered right-of-way and property control monuments and calculated plats and rights-of-way to develop the base map. They were a subconsultant on our General Engineering Services contract with you and worked closely with us on your North Simonton Stormwater Emergency Outfall Project. **They also supported us for your Cudjoe Regional Wastewater Inner Islands Collection and Transmission Systems effort.**

**Cummins Cederberg brings valuable knowledge and lessons learned to address shoreline conditions and challenges.** Their Florida Keys experience includes the City of Marathon Coastal Resiliency FDEP Grant and Coco Plum Beach Erosion Study and Beach Nourishment projects; the Sheraton Key West and Key West by the Sea FEMA coastal vulnerability studies; and the Brickell Key Sea Level Rise and Flood Mitigation Study.

We curated our team to specifically meet your needs on this project. Each key team member has a meaningful role and strengthens our team with capabilities in their area of expertise. **Our qualifications in this section** demonstrate this team's relevant experience and capabilities, including our project understanding, similar projects our team has collectively delivered, and specific Florida and Keys experience.

#### The Jacobs Team, The Only Team

- ◆ We require **no learning curve** and can begin work immediately
- ◆ We have over **3 decades** of work history with the City as a **trusted team partner**
- ◆ We have been delivering **trenchless utility services for over 40 years**
- ◆ We bring you our **decades of experience in tunnelling and conveyance design**
- ◆ We don't rest on our reputation—we seek **new innovations to exceed your expectations**
- ◆ We have the demonstrated qualifications to **accelerate your schedule, stay on budget, and complete your project on time**



## Experience of Team Members Working Together on Similar Projects

Jacobs trenchless team are experts in subaqueous trenchless design and construction and have unrivalled experience performing geotechnical characterization for coastal Florida trenchless installations and tunnels.

Our team's qualifications include our unrivaled experience working on the **Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel**. That knowledge is an essential part of the future success of the **Trenchless Installation of Utilities Across Fleming Channel** project. We bring a multidisciplinary team that understands microtunneling and knows that microtunneling aspect of the project is not the only challenge. Logistics such as permitting, safety and environmental sensitivity can create their own complexities and challenges.

Mike Stickley has a well-tailored strategy to anticipate, address and swiftly resolve any challenges that may arise and jeopardize meeting the City's project schedule.

The projects below demonstrate our **team's qualifications and capabilities to perform well together** on other similar projects and provide a successful outcome for our clients. Our core team consisting of Project Manager **Mike Stickley**, Trenchless Engineer **Robert Martin**, Utility Relocation Coordination Manager **Javier Colignon**, Permitting Lead **Leigh Ann Cannon**, and QA/QC Manager **Andrew Bursey**—and our other key personnel—have worked on design, construction, and geotechnical characterization for numerous high-profile projects in Florida, in various capacities, in their respective areas of specialization, including:

- **Multiple large subaqueous trenchless installations near or on the coast**

These include the large diameter horizontal directional drilling (HDD) St. John's River crossings for TWWMP and South Shores Projects in Jacksonville, for which our team accurately characterized critical, subsurface conditions.



- **The Port of Miami Tunnel**



For this **largest underground installation ever built in Florida**, we served as engineer-of-record (EOR) for the design-build contractor. The first tunnel constructed by an alternative delivery team in the US, it had combined total length of 8,400 ft, excavated using an earth-pressure boring machine (EPBM). The predominately soft, high-porous and unstable ground required extensive ground modification.

- **The Miami Brickell Microtunnel**

For one of the most logistically challenging microtunnels built in Florida, our team served as EOR for the design-build contractor. With microtunnel configuration and ground conditions similar to those at Fleming Key, **this experience is particularly relevant to your project**. We built on the design-build bridging documents prepared by others to develop the designs for the permanent works and for the secant pile shafts. The **Miami Brickell Microtunnel project was constructed in similar ground conditions—near the coast** and below the water table in highly porous limestone and sand.



**Constructability considerations were critical to the project's schedule and presented some of the major risks to be addressed.** We drew on our extensive practical construction experience, working with the contractor to prepare the designs and **manage and orchestrate the various technical work** elements, including:

- ☑ Site planning for construction staging and logistics
- ☑ Coordination of a diverse technical team, including traffic planning and control, FDOT coordination and agreements, utility relocations and protection, public engagement, and construction scheduling
- ☑ Construction risk management, including potential public impacts or damage to critical infrastructure; we developed and oversaw a geotechnical and structural instrumentation program for critical infrastructure, including overhead people movers

*"As an industry leader in developing and deploying trenchless and tunneling technologies, either on their own merit or as part of larger conveyance projects, Jacobs brings innovative and cost-effective approaches for buried infrastructure assessment, rehabilitation, replacement and new installations for our clients' specific water, wastewater and energy conveyance projects."*

Susan Moisio, Jacobs Global Water Market Director

## Experience of Team Members Working Successfully Together on Key West Projects

**Our team knows the City of Key West.** As your trusted partner for more than 35 years, we know your systems, processes, and critical issues. Our recent services for you include multiple, in-water projects requiring state, federal, and local environmental permitting and agency coordination.

### ▪ Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel



Our team delivered the basis of design for this project. We conducted an assessment to evaluate different trenchless installation methods to relocate the utilities on the Fleming Bridge. This included reviewing the surface and subsurface conditions with potential to impact the trenchless installation and identifying considerations during construction that could affect feasibility of the trenchless installation method. We included a unit-based cost estimate w for each feasible trenchless installation method.

### ▪ General Engineering Services Contract

Since 1985, we have worked with you to provide a variety of planning, engineering, and construction services projects under a **general engineering services contract**. This includes **four of our project managers currently delivering nine task orders**, such as repair of the **Fleming Bridge Pile**, geotechnical boring collection for the (proposed) utility pipeline replacement under **Fleming Channel**, and stormwater retrofits and improvements on **Patricia and Ashby streets**.

#### ☒ Fleming Bridge Piling Repair

Our team received the permit and exemption verification for the installation of a fiberglass jacket around one damaged pile on Fleming Key Bridge. We obtained a DeMinimis Exemption from the South Florida Water Management District approximately 2 weeks after submitting the application and received the USACE Nationwide Permit just over 2 months after submitting the pre-construction notification. To support application processing, the submittal included the U.S. Fish and Wildlife Services' protected resources' construction conditions and Jacobs Benthic Resources Survey results regarding presence of corals and seagrass.

#### ☒ Fleming Channel Geotechnical Boring

Our team provided permitting services for the collection of one geotechnical boring in the Fleming Channel to prepare for the utility pipeline replacement. We coordinated with Florida Keys National Marine Sanctuary to eliminate the need for a benthic resources survey prior to boring collection and received a letter of authorization to supplement the U.S. Army Corps of Engineers permit. We obtained an exemption verification from South Florida Water Management District within 3 weeks of application submittal and received the USACE Nationwide Permit within 3 months of submitting the pre-construction notification, using the superseding Jacksonville District Biological Opinion. The application process included consultation with the US Coast Guard regarding potential safety and noticing requirements. Our strategy helped save time by reducing the consultation commenting period.

#### ☒ Patricia and Ashby Street Underground Injection Well and Stormwater Retrofit

We obtained dewatering and stormwater retrofit general permits from South Florida Water Management District to perform stormwater retrofit and improvements of over half an acre at Patricia and Ashby streets. The project, located in the uplands, did not require a federal permit, and did not impact wetlands or surface waters of the US. We submitted documentation supporting coverage under the general permits, saving time

on application processing and reducing permitting fees. We received the dewatering permit and the stormwater retrofit permit 2 weeks and 4 weeks, respectively, after application submittal. The project construction is complete, and the stormwater improvements are fully operational.

- **Cudjoe Regional Wastewater Transmission System, Florida Keys Aqueduct Authority (FKAA)**



We provided sizing and design for this system serving seven islands in the Florida Keys. The project involved constructing nine major lift stations and 14 miles of transmission mains. We used available bridges to support the force main between pump stations and islands.

## 8. Representative Projects and Client References



## 8. Representative Projects and Client References

With more than **40 years of tunnel and trenchless project planning, management, design, and construction management experience**, Jacobs' trenchless experts have worked on complex projects locally, regionally, and around the globe to manage and extend the useful service life of infrastructure and to install new drinking water, wastewater, and energy conveyance systems without disrupting the surrounding environmentally sensitive areas or communities. **Our similar projects completed within the past 5 years are on pages 1 and 2 of this section.**

We are proud of the innovative and collaborative work we provide—the best measure of our technical and management performance is our clients' satisfaction. Therefore, **client references offer a valuable assessment of our capabilities, commitment, and reliability.** Per the RFQ, this section provides references from clients who have used the same Jacobs services we propose for you. We encourage you to contact them to verify the quality of our work and confirm our qualifications and experience managing similar projects and our ability to deliver projects on time and within budget.



### Jacobs' Project References

The following table includes references for our projects completed within the past 5 years.

| Project Owner/Title  | Contact Name/ Title   | Phone Number                               | Email Address  |
|--|---|--|--|
| <b>City of Omaha</b>   |   |  |  |
| <b>South Interceptor Forcemain Microtunneling Segment, Omaha CSO Program Management</b>  | Jim Theiler, Public Works, Assistant Director for Environmental Services                | (402) 444-5225                             | <a href="mailto:james.theiler@cityofomaha.org">james.theiler@cityofomaha.org</a> |
| This project included the development, implementation, and oversight of the recovery of a rock TBM using an 86-inch microtunnel boring machine and secant pile rescue shaft. We provided the development of construction management protocols and master specifications, technical reviews of projects include sewer separation projects, and other controls such as retention treatment basins and tunnels. Total Project Cost: \$4.2 million |   |  |  |
| <b>Jefferson County</b>  |   |  |  |
| <b>Cahaba River WWTP to Valley Creek WWTP Sludge Transfer - Force Main</b>   | Daniel White, Jefferson County Environmental Services Department, Deputy Director       | (205) 281-8931                             | <a href="mailto:whited@jccal.org">whited@jccal.org</a>                           |
| We developed the design to install 13,700 LF of 8-inch, high-density polyethylene (HDPE) pipe and associated fittings by <b>various methods</b> , including open-cut, HDD, <b>microtunneling</b> , and guided auger boring in soil and rock crossing major roadways. Total Project Cost: \$7.2 million   |   |  |  |
| <b>City of Ontario</b>   |   |  |  |
| <b>Fairbank-Silverthorn Storm Trunk Sewer System</b>   | Bashir Ahmed, Sr. Project Manager, Water Treatment & Solid Waste Facilities             | (416) 394-8440                             | <a href="mailto:bashir.ahmed@toronto.ca">bashir.ahmed@toronto.ca</a>             |
| This project is part of the City of Toronto's program to relieve properties from basement flooding caused by surcharged storm, combined, and sanitary sewers and overland flow. This was a comprehensive project and design delivery for a major tunnel. The project included several miles of microtunneling and associated shafts in soft ground conditions. Total Project Cost: \$380 million   |   |  |  |
| <b>The Regional Municipality of Peel</b>   |   |  |  |
| <b>Coordination of Water &amp; Wastewater Infrastructure Works with MTD's Highway 401 Expansion Project</b>  | Frank Pugliese, Manager, Contract Administration & Oversight, Public Works, Peel Region | (905) 791-7800 ext. 5943<br>(905) 867-6437 | <a href="mailto:frank.pugliese@peelregion.ca">frank.pugliese@peelregion.ca</a>   |
| We designed utility upgrades and crossings for 10 water mains and a wastewater sewer. Three crossings were microtunneled: Crossing 4, 60-inch steel casing, 500 LF; Crossing 7, 48-in direct jacked pipe, 1000 LF; Crossing 8, 48-inch casing, 1300 LF. Total Project Cost: \$64 million   |   |  |  |

| Project Owner/Title   | Contact Name/ Title   | Phone Number   | Email Address  |
|---|---|----------------|--|
| <b>Athens-Clarke County United Government Public Utilities Department</b>   |   |                |  |
| <b>Upper North Oconee (UNO) Phase 2B Trunk Replacement</b>  | Hollis Terry, United Government of Athens-Clarke County, Director of Public Utilities | (706) 613-3470 | <a href="mailto:hollis.terry@accgov.com">hollis.terry@accgov.com</a> |
| This project includes 1,400 feet of new 36-inch diameter ductile iron pipe gravity sewer. The new sewer is being installed using a combination of microtunnel boring machine (MTBM), traditional tunnel boring machine (TBM), and hand-mined tunneling methods. Approximately 1,200 feet of the new sewer is in a 72-inch diameter TBM tunnel and 100 feet is in a 60-inch diameter MTBM tunnel with steel casing pipe. The project also includes 70 feet of 42-inch RCP storm sewer installed under a railroad by auger boring. Total Project Cost: \$12.7 Million   |   |                |  |
| <b>City of Key West</b>   |   |                |  |
| <b>Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel</b>  | John Paul Castro, (Former) City of Key West, Utilities Director                       | (305) 896-4244 | Email: N/A   |
| Jacobs provided the City of Key West with an evaluation of feasible trenchless Installation methods beneath Fleming Channel to relocate the existing utilities underground, which are currently affixed to the bridge structure. The City of Key West is considering the relocation of wastewater lines supplying the WWTP that are installed on a utility bridge, spanning approximately 460 feet across the channel, from Trumbo Point to Fleming Key. A bridge failure would halt the City's ability to treat wastewater and would severely impact any corresponding recovery efforts. Total Project Cost: \$5 Million |   |                |  |



## Jacobs' Similar Projects Completed Within the Past 5 Years

We apply our **global experience and vast lessons learned locally for the City of Key West**. With more than 35 years delivering projects for you (formerly as CH2M, now Jacobs), **we know the challenges you face**, and we **bring established relationships to you and your stakeholders**, enabling us to **bring you innovative, cost-effective, efficient solutions with lasting results**. We share our most relevant, **similar projects completed within the past 5 years** on pages 3 through 8.

*"As trenchless technologies continue improving, more of our clients will look to companies like ours to help repair or replace their aging underground infrastructure or install new buried infrastructure, and that's another honor we're most excited about - bringing these excellent solutions to our client partners."*

**Jacobs Global Tunnel and Ground Engineering Director Mark Johnson**

# South Interceptor Force Main Microtunneling Segment, Omaha CSO Program Management

Omaha, NE

## CLIENT NAME:

City of Omaha

## PROJECT DURATION:

Design Start Date: 06/2016

Design End Date: 01/2017

Construction Start Date: 02/2017

Construction End Date: 11/2017

## TOTAL PROJECT COST:

\$4.2 million

## ROLE ON THE PROJECT:

Program Manager of the City's CSO Program

## KEY PERSONNEL:

Robert Martin, PE, Program Tunnel Lead

## REFERENCE/CONTACT:

Jim Theiler, Public Works, Assistant Director  
for Environmental Services  
City of Omaha  
(402) 444-5225  
james.theiler@cityofomaha.org

## RELEVANCY:

- Your project has the same diameter, casing material, and shaft construction as this project
- Similar installation length and geology



**COMPLETED ON TIME  
AND ON BUDGET**

## 86 INCH MICROTUNNEL BORING PROJECT



## Project Description

This project included the development, implementation, and oversight of the recovery of a rock TBM using an 86-inch microtunnel boring machine and secant pile rescue shaft.



The City of Omaha had to develop a long-term control plan (LTCP) to identify methods to reduce untreated, combined sewer overflow (CSO) to the Missouri River and Papillion Creek tributaries. A Nebraska Department of Environment and Energy (NDEE) consent order was entered into in 2007 that required the completion of the project by 2024. The City selected Jacobs (formerly CH2M HILL) to lead the team as

its program management consultant, providing overall LTCP preparation and implementation of the overall CSO construction program. This project included developing construction management protocols and master specifications; performing technical reviews of projects, including sewer separation projects; and providing other controls, such as retention treatment basins and tunnels.

## Challenges and Solutions

**Challenge:** Soil overlying rock with high groundwater where dewatering was not feasible

**Solution:** Required secant pile shafts socketed into the rock

**Challenge:** Tunnel exited out of rock into saturated soils with high groundwater

**Solution:** Required microtunneling having a mixed face cutting head with face access to enable tool changes to suit changing ground conditions

## Key Achievements

- Completed the installation and TBM recovery without issue.



# Cahaba River WWTP to Valley Creek WWTP Sludge Transfer - Force Main

Jefferson County, AL

## CLIENT NAME:

Jefferson County

## PROJECT DURATION:

Design Start Date: 07/2012

Design End Date: 05/2015

Construction Start Date: 02/2019

Construction End Date: 09/2020

## TOTAL PROJECT COST:

\$7.2 million

## ROLE ON THE PROJECT:

Design, Bidding & Full Construction Services

## KEY PERSONNEL:

Robert Martin, PE, Project Engineer

Mike Stickley, PE, Design Manager/Lead Designer

Erika Smith, Cost Estimator

## REFERENCE/CONTACT:

Daniel White, Deputy Director  
Jefferson County Environmental Services Department  
(205) 281-8931  
whited@jccal.org

## RELEVANCY:

- Challenging construction conditions-crossing under numerous existing utilities (large diameter high pressure gas lines and buried electrical duct bank)
- Development of a tunneling specifications
- Evaluation of tunnel liner and installation
- Development of the contract drawings
- Coordination with tunneling contractors during design
- On site construction inspection
- Permitting to include DOT and Performance of Environmental Survey for wetlands and endangered species



**COMPLETED ON TIME  
AND UNDER BUDGET**

## SLUDGE TRANSFER PROJECT/MICROTUNNELING

### Project Description

Jacobs provided design, bidding and construction services for a force main to convey waste activated sludge from the Cahaba River Wastewater Treatment Plant to a large-diameter gravity sewer, for flow discharge to another treatment plant. Part of the design work included performing a detailed route analysis. The alignments available either paralleled or crossed through environmental sensitive areas/watersheds or followed/crossed major highways and crossed through the parking lots and roads of one of the major shopping centers (Galleria) in the Birmingham area.

The analysis found that the highway/Galleria alignment was the most cost effective with the least potential for environmental impacts. The design developed provided for the installation of 13,700 LF of 8-inch, HDPE pipe and associated fittings by various methods, including open cut, HDD, microtunneling for two segments, and guided auger boring in soil and rock. Work crossed major roadways, such as State Highway 150, State Highway 31, and an off ramp from Interstate 459. Although we completed design in 2015, easement acquisition delayed construction until 2019.

The various installation methods were necessary to adapt to the subsurface conditions, minimize the impacts of traffic for residences and businesses, and meet Alabama Department of Transportation and other property owner requirements. This project included hot-tapping of a 48-inch ductile iron pipe where the flow from the 8-inch HDPE main is discharged, design and pump selection assistance for the pump station to convey the sludge through the main, and preparation of a detailed traffic control plan.

### Challenges and Solutions

**Challenge:** Subsurface conditions, including crossing through fill with boulders that could present obstacles to trenchless boring methods

**Solution:** Preparation of the baseline report detailed the potential crossing issues for the contractor and microtunneling was required based upon the conditions

**Challenge:** Permitting and coordination with property owners

**Solution:** Early review and coordination with DOT minimized permitting delays, holding many meetings with property owners along the alignment to verify work approaches and schedule would not restrict property access or impact businesses

### Key Achievements

- The detailed design resulted in project completion under the bid price, providing a cost savings for the owner
- Property owners were not impacted by the work and expressed their appreciation



# Fairbank Silverthorn Storm Trunk Sewer System

Toronto, Ontario, CA

## CLIENT NAME:

City of Toronto

## PROJECT DURATION:

Design Start Date: 02/2019

Design End Date: 01/2021 (Main Tunnel Design)

Est. 06/2022 (Remainder of Design)

Construction Start Date: 10/2021

Construction End Date: Est. 2025

## TOTAL PROJECT COST:

\$380 million (Canadian Dollars)

## ROLE ON THE PROJECT:

Program Management

## KEY PERSONNEL:

Andrew Bursey, PE, Senior Tunnel QC Reviewer and Construction Risk Management Consultant

## REFERENCE/CONTACT:

Bashir Ahmed, Senior Project Manager  
City of Toronto  
(416) 394-8440  
bashir.ahmed@toronto.ca

## RELEVANCY:

- Microtunnel design
- Tunnel design
- Deep shafts
- Heavily developed areas
- Planning and permitting
- Risk management



**COMPLETED  
MAIN TUNNEL DESIGN**

## MICROTUNNELS AND SHAFTS IN DEVELOPED AREAS

### Project Description

This work is part of the City of Toronto's program to relieve developed areas from basement flooding. The main tunnel is 15 feet in diameter, approximately 1.8 miles long, and 22 to 150 feet deep.

To provide project and design delivery on this major tunnel with microtunneled segments, our scope includes program management, detailed design, geotechnical analysis, preparation of GBRs, risk management, contract administration, and construction management.

**The project has over 1.1 miles of microtunnels in soil, including sand and silt below the water table.** The microtunnel pipe's inside diameter is approximately 71 inches. The microtunneling requires 14 shafts; four shafts involve drop structures connecting microtunnels to the main tunnel, up to 130 feet deep. Microtunneling takes place in a heavily developed part of Toronto with extensive utilities, construction access challenges, and tight staging areas.

### Challenges and Solutions

**Challenge:** Extensive utilities at sites and along alignment.

**Solution:** We provided SUE level B surveys to screen all streets, followed by level A campaign to daylight targeted utilities of concern; we evaluated 1,600 utilities using our TUNDRA software for risk analysis and mitigation planning

**Challenge:** Logistical challenges of site constraints and access limitations

**Solution:** Proactive construction planning included road closure and MOT coordination with multiple City work zone coordinators, haul route planning to limit impacts to urban arteries, and detailed planning for pedestrian traffic

**Challenge:** Tight schedule constraints due to federal funding allocations

**Solution:** We situated main shafts in parks to limit utility diversion work impacts to the schedule's critical path

**Challenge:** Extensive permitting and easement requirements

**Solutions:** Proactive engagement and coordination with multiple agencies and third-party stakeholders included tunnel crossings under a transit rail lines and a light rail tunnel on a project currently under construction

### Key Achievements

- We incorporated a change from 13 feet to 15 feet-diameter at the 90% stage within minimal impact to the overall design delivery schedule
- Our construction sequencing enables downstream segments to take inflows before overall completion, providing early benefits to the public
- Our dedicated field ambassador provided proactive public engagement





# Coordination of Water & Wastewater Infrastructure Works with MTO's Highway 401 Expansion Project

Regional Municipality of Peel, Ontario, CA

## CLIENT NAME:

The Regional Municipality of Peel

## PROJECT DURATION:

Design Start Date: 10/2018

Design End Date: 04/2022, (02/2022 Crossings 4, 7, and 8)

## TOTAL PROJECT COST:

\$64 million

## ROLE ON THE PROJECT:

Design of Major Highway Crossings by Microtunneling

## KEY PERSONNEL:

Andrew Bursey, PEng, Geotechnical and Spec. Reviewer for Crossing 7 Microtunnel

## REFERENCE/CONTACT:

Frank Pugliese, PEng  
Manager, Contract Administration & Oversight  
Public Works, Peel Region  
Work: (905) 791-7800, ext. 5943  
Cell: (905) 867-6437  
frank.pugliese@peelregion.ca

## RELEVANCY:

- Design for microtunneling in silty soil below the water table
- Relocation of existing utilities using microtunneling
- Permitting and coordination with transportation and environmental agencies, coordination with 3<sup>rd</sup> party utilities



**COMPLETED ON TIME  
AND ON BUDGET**

## TRENCHLESS CROSSINGS FOR A MAJOR HIGHWAY AND CREEK

### Project Description

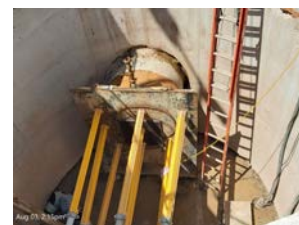
This project was required due to the Ministry of Transportation of Ontario (MTO, the Ontario DOT equivalent) effort to widen the major, multi-lane Highway 401. The project required modifying multiple utilities owned by the Region of Peel that cross under Highway 401, including relocating valves, chambers, and maintenance holes to outside the new right-of-way. The MTO required trenchless installations with



pressurized lines to be within steel casing capable of withstanding the same operation pressures as the watermains.

The Region tasked us with designing utility upgrades and crossings for 10 water mains and a wastewater sewer. The three microtunneled crossings included Crossing 4, 60-inch steel casing, 500 LF; Crossing 7, 48-inch direct jacked pipe, 1000 LF; and Crossing 8, 48-inch casing, 1300 LF. Our scope of work included:

- Microtunnel design, with geotechnical and hydrogeological investigation scoping, characterization, and geotechnical baseline reports
- Construction planning and permitting
- Coordination and permitting with multiple agencies and utility companies (i.e., MTO, TRCA, CVC, MNR, MECP, Alectra, Enbridge)



Ground conditions at these crossings vary, including silty clay tills, gravelly till, shale and granular alluvial deposits, and bedrock consisting of shale with hard layers of interbedded siltstone and limestone. All crossings are below the water table. The Crossing 7 microtunnel was bored under a creek and an extra high pressure (vital) gas line with limited clearance.

We provided alternative solutions for crossings one to six; the two remaining crossings go out for bid in fall of 2022.

### Challenges and Solutions

**Challenge:** Tight design schedule to suit MOT construction schedule.

**Solution:** We fast-tracked designs with early involvement of the microtunneling contractor to integrate the contractor's expertise with design; we also facilitated coordination for some of the crossings with the highway project design-build contractor to avoid construction schedule impacts.

### Key Achievements

- We completed the microtunnels without construction delays or claims, due to comprehensive geotechnical baseline reports

# Upper North Oconee Phase 2B Trunk Replacement

Athens-Clarke County, GA

## CLIENT NAME:

Athens-Clarke County Unified Government  
Public Utilities Department

## PROJECT DURATION:

Design Start Date: 05/2018

Design End Date: 11/2018

Construction Start Date: 03/2019 (Bidding  
Started), 08/2019 (Bids Received)

Noticed to Proceed: 05/2020

Construction End Date: 04/2022  
(Substantial), 05/2022 (Final)

## TOTAL PROJECT COST:

\$12.7 million

Planning, Design, and Construction Phase  
Services (\$1.7 Million)

Construction (\$11 Million)

## ROLE ON THE PROJECT:

Design, Permitting, Bid Phase, and  
Construction Management Services

## KEY PERSONNEL:

Andrew Bursey, PE, Lead Tunnel Engineer,  
Construction Phase

Colin Sessions, PE, Senior Tunnel Engineer

## REFERENCE/CONTACT:

Hollis Terry, Director of Public Utilities  
Unified Government of Athens-Clarke  
County, Georgia  
(706) 613-3470  
hollis.terry@accgov.com

## RELEVANCY:

- Microtunnel design for wastewater lines
- Procurement Support and Construction Management for Trenchless Installation



**COMPLETED**

## TRUNK REPLACEMENT/ HAND MINING LINER PLATE

### Project Description

This project eliminates several hundred feet of aerial gravity sewer spans in deteriorating condition and a reach of gravity sewer along the North Oconee River. Jacobs provided concept planning, detailed design and bidding services, and construction management services. The scope of work included:



- Geotechnical investigation, geotechnical baseline report
- Approximately 1,370 LF of 36-inch diameter ductile iron restrained joint gravity sewer pipe, with 1,260 LF of 60-inch diameter steel casing pipe, designed to be installed by microtunneling
- Trenchless crossings under GA SR 10 Loop, and a railroad
- Aerial crossing design
- Various pipe connections and appurtenances
- Demolition of above-ground pipe and concrete pier pipe supports and manholes; plug, abandon, and remove buried sewer pipe

### Challenges and Solutions

**Challenge:** Develop option to remove deteriorating segments of gravity sewer; replacement options would cross difficult terrain, highway, river, and a railroad, making open cut replacement infeasible

**Solution:** We provided trenchless technology construction of replacement sewer using tunneling

### Key Achievements

- We collaborated with County treatment plant staff for minimal disruptions to operations during construction
- With one tie-in required in a popular park, we coordinated with the park department to mitigate tie-in impacts on park users
- A geotechnical instrumentation program helped protect a railroad, highway, and nearby warehouse
- We facilitated seamless adoption of a contractor-proposed value engineering alternative, using a specialized TBM with ribs and lagging in lieu of casing for much of the bore; our tunnel team drew quickly reviewed the proposal and developed modified specifications
- We completed trenchless installations with no claims for changed ground conditions
- We developed our project concept with an analysis of the area's wastewater collection system, conducting a condition assessment of the gravity sewers and modeling the collection system for capacity evaluation; we also analyzed options for replacing deteriorating and failing gravity sewer segments
- We provided detailed design and bidding for the selected gravity sewer replacement option, including the geotechnical investigation plan for tunnel design

# Trenchless Installation Feasibility Evaluation of Existing Utilities Across the Fleming Channel

Key West, FL

## CLIENT NAME:

City of Key West

## PROJECT DURATION:

Start Date: 05/2018

End Date: 01/2021

*\*Feasibility Analysis - Predesign*

## TOTAL PROJECT COST:

\$5 Million

## ROLE ON THE PROJECT:

Trenchless Designer

## KEY PERSONNEL:

Robert Martin, PE, Project Engineer

Javier Colignon, Project Manager

Dean Garcia, PE, Design Manager

## REFERENCE/CONTACT:

John Paul Castro, (Former) Utilities Director

City of Key West

(305) 896-4244

Email: N/A

## RELEVANCY:

- This project provided the engineering and permitting requirements to set the scope of work for the project the City is now bidding
- This project gave us an understanding of the challenges and allowed us to connect with the key players
- The knowledge acquired in this referenced project will allow us to skip the learning curve while maximizing the efficiency in schedule and costs



COMPLETED

## UTILITY RELOCATION PROJECT



## Project Description

This feasibility study considered relocating wastewater lines supplying the City's WWTP, which are installed on a utility bridge spanning approximately 460 feet, across the channel from Trumbo Point to Fleming Key. A bridge failure would halt the ability to treat wastewater and severely impact corresponding recovery efforts. The City requested an evaluation of an option to relocate the lines under Fleming Channel, including investigating the feasibility of trenchless installation.

There are currently seven utilities suspended from the bridge structure, including one, 8-inch potable water line; two, 30-inch sanitary force mains; and four, 4-inch electrical conduits. We evaluated HDD and microtunneling boring methods, pipe materials, and constructability and prepared 10% design and cost estimates.



## Challenges and Solutions

**Challenge:** Subsurface conditions

**Solution:** We completed a desktop study and geotechnical site investigation to determine actual subsurface conditions to evaluate feasible trenchless installation methods

**Challenge:** Site access, remote location

**Solution:** We evaluated site access and limitations for reaching the island; determining that the bridge is unable to accommodate tunneling or shaft construction equipment, we worked with contractors to determine methods for getting required equipment onto the island

## Key Achievements

- Alternatives evaluation
- Preliminary design
- Cost estimate



## Jacobs' Tunnel and Trenchless Technology Projects



The following pages spotlight additional local, regional, national, and Canadian projects focused on a range of trenchless technology services. These projects demonstrate our understanding of the significant impacts of various geographical locations and geological conditions on these projects.

### Port of Miami Tunnel

Miami, FL

#### CLIENT:

Florida Department of Transportation

#### JACOBS' ROLE:

Lead Designer/Tunnel Engineering and Inspection

#### RELEVANCY:

- ✓ Geotechnical and tunnel engineering
- ✓ Environmental protection
- ✓ Expedited design
- ✓ Utility relocation
- ✓ Permitting

#### Tunnels and Trenchless Technologies

We led design for this twin, 37-ft-inside-diameter (41 feet outside diameter) road tunnel constructed under the port's shipping channel, between Watson Island and Dodge Island. The goal was to divert port traffic away from downtown Miami and onto a dedicated connection to the Interstate Highway System via I-395 and the MacArthur Causeway Bridge, reducing congestion and improving safety in the downtown area.

The tunnel has a combined total length of 8,400 feet, excavated using an EPBM in predominately soft, high porous and unstable ground requiring extensive ground modification. The project also widened the MacArthur Causeway Bridge and temporary and permanent roadways.



### Dogue Creek Force Main Replacement

Fairfax, VA

#### CLIENT:

Fairfax County

#### JACOBS' ROLE:

Final Design and Services During Construction

#### RELEVANCY:

- ✓ Final design
- ✓ Construction shafts
- ✓ Trenchless techniques for microtunnel drives

#### Tunnels and Trenchless Technologies

Jacobs performed final design work for this replacement project on the Fort Belvoir Military Reservation. It includes replacing a force main with 4,400 ft of 36-inch transmission main, a ductile iron pipe, six construction shafts, and one permanent manhole. The force main carries sewage from the Dogue Creek pump station to the junction chamber and gravity sewer connection. The replacement force main consists of five sections installed using trenchless techniques. Two short sections, connecting to the pump station and junction chamber, used trench excavations for installation. The five microtunnel drives require six work shafts.



# Belmont North Relief Interceptor

Indianapolis, IN

## CLIENT:

Citizens Energy Group

## JACOBS' ROLE:

Microtunnel Design Engineer

## RELEVANCY:

- ✓ Geotechnical site investigation
- ✓ Pump testing programs
- ✓ Detailed analyses to evaluate groundwater pressures

## Tunnels and Trenchless Technologies

The project included construction of 5,250 LF of 72-inch diameter RCP gravity sewer, with 4,000 LF of the alignment constructed via **microtunneling with a slurry TBM**. The microtunnel segment had three active sewer tie-ins ranging in diameter from 42 to 78 inches, with flumes. Our scope for the microtunnel segments included microtunnel design and engineering consulting for the geotechnical exploration program. We prepared design drawings and specifications for microtunneling, performed geotechnical analysis, and prepared the project geotechnical baseline report. Because the project was in a developed area of Indianapolis, microtunneling was the best option to limit surface disruption. Microtunnel alignments were located primarily below city streets, including several major traffic arteries for the City. The project had to minimize disruptions to neighbors and utilities while providing adequate space for economical tunnel construction. Recognized by the City as a success, the project was completed on schedule and budget.



# Steve Lake Intake

Abbotsford/Mission, BC

## CLIENT:

Abbotsford/Mission Water and Sewer Services

## JACOBS' ROLE:

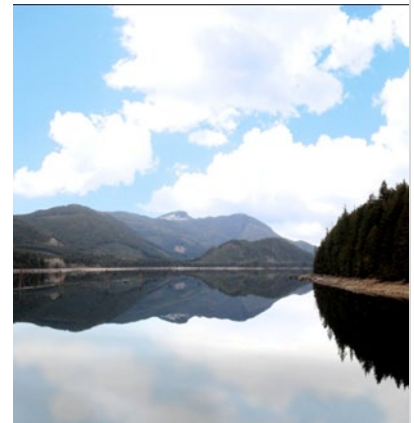
Alternatives Analysis and Preliminary Design

## RELEVANCY:

- ✓ Intake tunnel microtunneling
- ✓ Tunneling below water

## Tunnels and Trenchless Technologies

This program included **developing Stave Lake as a new water supply to expand the client's drinking water system**. We evaluated intake alternatives and completed preliminary design of the raw water intake in Stave Lake Reservoir. We led development of the ten alternative design concepts in a workshop setting and evaluated them based on life-cycle costs and non-economic criteria. The intake tunnel involved rock microtunneling in hard igneous rock using a machine equipped for underwater recovery in the reservoir. Critical tunneling issues included the risk of blasting damage to adjacent structures and a nearby dam, tunneling below water with low-cover construction of an in-reservoir bench on which to perform a wet recovery of the rock microtunnel boring, and construction of the intake screens, structure, and access bridge. The selected option minimized construction and disturbance in the lake and had the least impact on the environment, archaeological site, and the community.





# Ute Reservoir Intake Tunnel and Screens

Logan, NM

## CLIENT:

Eastern New Mexico Water  
Utility Authority

## JACOBS' ROLE:

Design and Services During  
Construction

## RELEVANCY:

- ✓ Trenchless design and construction
- ✓ Microtunneling and shaft construction

## Tunnels and Trenchless Technologies

Jacobs evaluated intake alternatives, completed final design, prepared tender documents, and managed construction of a 39 mgd raw water intake in Ute Reservoir. The intake was the first stage of construction of a larger system involving 150 miles of raw and finished water conveyance pipelines, a 28 mgd raw water booster pump station, a 140,000 ft<sup>3</sup> storage tank, and a water treatment plant with a finished water booster pump station to **service downstream municipalities, including Cannon Air Force Base. The intake involved rock microtunneling to jack 54-inch inside diameter steel pipe at 40 feet below the reservoir surface in fractured sandstone rock with Uniaxial compressive strength Sup to 9 ksi.** The MTBM had rock disc cutters to fracture the native rock and was equipped for underwater recovery in the reservoir. The project included constructing an intake with cylindrical fish screens on a semi-circular bench excavated into the rock bluff at the reservoir edge. Critical tunneling issues included risk from blasting damage to adjacent homes and a nearby dam, tunneling and associated shaft construction in fractured sedimentary rock in direct hydraulic connection to the reservoir, construction of an in-reservoir bench to allow a wet recovery of the rock MTBM, and construction of the intake screens, structure, and access bridge.



# Barclay/4<sup>th</sup>/Chase Metropolitan Interceptor Sewer (MIS) Replacement

Milwaukee, WI

## CLIENT:

Metropolitan Interceptor  
Sewer (MIS)

## JACOBS' ROLE:

Design Consultant and  
Services During Construction

## RELEVANCY:

- ✓ Final design
- ✓ Construction support
- ✓ Subsurface investigation and geotechnical baseline report
- ✓ Hydraulic analysis
- ✓ Permitting

## Tunnels and Trenchless Technologies

Jacobs completed final design and provided construction support for this project involving the design of improvements to an older urban sewer system. The improvements provide added capacity to accommodate projected growth in wastewater flows from the service area and to rehabilitate deteriorating parts of the old Basin A MIS.



The project constructed approximately 10,700 LF of new 48-inch and 72-inch diameter sewers using microtunneling, in a dense urban area, at depths ranging from 20 to 70 feet in bouldery glacial till, mixed-face, and dolomite bedrock ridges. The team made value engineering improvements to alignment alternatives selected by the preliminary engineering design firm; managed permitting issues with the City of Milwaukee, Wisconsin DOT, Wisconsin Department of Natural Resources, and utilities; and prepared a design report and contract documents for bidding.

# Mill Road MIS Relief Sewer Project

Milwaukee, WI

## CLIENT:

Milwaukee Metropolitan  
Sewerage District (MMSD)

## JACOBS' ROLE:

Tunnel Designer and Services  
During Construction

## RELEVANCY:

- ✓ Evaluation of trenchless installation methods
- ✓ Developed scope for geotechnical site investigation
- ✓ Geotechnical analysis and baseline report

## Tunnels and Trenchless Technologies

The MMSD is planning to construct a Mill Road MIS relief sewer to supplement the capacity of the 72-inch relief sewer, helping reduce sanitary sewer overflow occurrence and basement backup risk. This requires a new 60-inch reinforced concrete pipe relief sewer approximately 9,000 feet long, installed using microtunneling. One of the several significant challenges included the glacial till with cobbles and boulder and rock ridges. The solution included extensive geotechnical investigation to determine subsurface conditions using geotechnical borings and geophysics. Another significant challenge was a residential and commercial area requiring rock excavation. We limited ground vibrations to avoid damaging infrastructure. Our efforts also evaluated trenchless installation methods, developed a scope of work for the geotechnical site investigation, provided geotechnical analysis and a geotechnical baseline report, and developed technical specifications and drawings related to the trenchless installation.



# Catoma Wet Weather Improvements Program Phase II and III

Montgomery, AL

## CLIENT:

Montgomery Water Works and  
Sanitary Sewer Board

## JACOBS' ROLE:

Trenchless Designer and  
Services During Construction

## RELEVANCY:

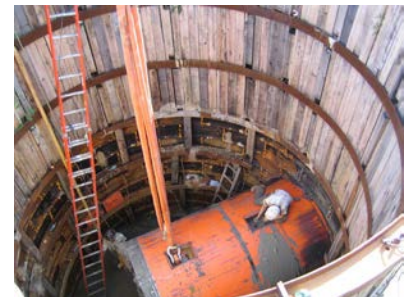
- ✓ Trenchless design of crossings
- ✓ Evaluation of trenchless alternatives
- ✓ Conditions assessments
- ✓ Survey coordination
- ✓ Permitting

## Tunnels and Trenchless Technologies

This program involved multiple studies to identify the most cost-effective solution addressing the client's conditions and capacity limitation for their Catoma water pollution control plant conveyance system. We used a phased approach enabling the client to address their most pressing needs first while delaying less critical phases until they could secure additional funding.

**Phase I.** This phase constructed a 45-mgd pump station and 48-inch force main to convey raw sewage to the plant. The design kept the original pump station online with the new pump station to convey wet-weather flows to the treatment facilities.

**Phases II and III.** These phases constructed a 13-mile sanitary sewer interceptor to replace the original, deteriorated and capacity limited interceptor. The \$29 million Phase II project involved installing approximately 6 miles of 30-inch to 78-inch, majority 60-inch and 66-inch, centrifugally cast fiberglass mortar pipe (CCFMP). This phase also included installing four microtunnel undercrossings (i.e., two 96-inch diameter steel casing, one 66-inch diameter CCFMP direct jack, and one 30-inch-diameter CCFMP direct jack), constructing a three-barrel invert siphon, and crossing numerous environmentally sensitive wetlands and creeks. The \$30 million Phase III project included installing 7 miles of 78-inch-diameter CCFMP and completing four microtunnel undercrossings of environmentally sensitive wetlands and creeks.



## 9. Sworn Statements and Affidavits

## 9. Sworn Statements and Affidavits

### Exhibit A.

1. Anti-Kickback Affidavit
2. Non-collusion Affidavit/Declaration and Compliance
3. Florida Statutes, on Public Entity Crimes
4. Equal Benefits for Domestic Partners Affidavit
5. Cone of Silence Affidavit
6. City of Key West Indemnification Form
  - Attachment A-Supplemental Response to Indemnification Form
7. Suspension and Debarment Certification
  - Attachment A1-Supplemental Response to Debarment Form 2c
8. Disclosure of Lobbying Activities
9. Prohibited Interests Form and Notice
10. Vendor Certification Regarding Scrutinized Companies Lists


### Other Required Documents.

- Certificate of Liability Insurance and Supplement to Certificate of Insurance
- Secretary Certificate/Certificate of Authority
- State of Florida Certificate of Good Standing
- State of Florida Firm License

**ANTI-KICKBACK AFFIDAVIT**

STATE OF Florida )  
 )  
COUNTY OF Broward ) : SS  
 )

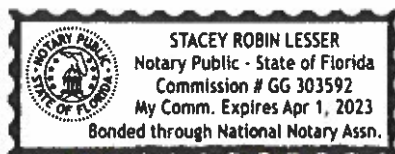
I, the undersigned hereby duly sworn, depose and say that no portion of the sum herein bid will be paid to any employees of the City of Key West as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By:   
John Elizabeth Aleman | Client Account Manager, Miami-Dade and Monroe Counties

Sworn and subscribed before me this 26 day of August 2022.

NOTARY PUBLIC, State of Florida, at Large

My Commission Expires: 4/1/23



\*\*\*\*\*

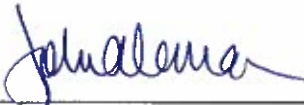
Stacey Robin Lesser



**NON-COLLUSION AFFIDAVIT**

STATE OF Florida )  
 : SS  
COUNTY OF Broward )

I, the undersigned hereby declares that the only persons or parties interested in this Proposal are those named herein, that this Proposal is, in all respects, fair and without fraud, that it is made without collusion with any official of the Owner, and that the Proposal is made without any connection or collusion with any person submitting another Proposal on this Contract.

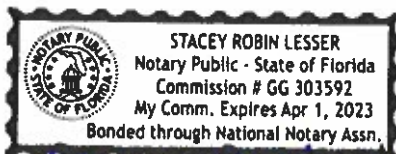
By:   
John Elizabeth Aleman | Client Account Manager,  
Miami-Dade and Monroe Counties

Sworn and subscribed before me this

26 day of August 2022.

NOTARY PUBLIC, State of Florida at Large

My Commission Expires: 4/1/23



Stacey Robin Lesser

SWORN STATEMENT UNDER SECTION 287.133(3)(A)  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

**THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER  
AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted with Bid or Proposal for Trenchless Installation of Utilities  
Across Fleming Channel | City of Key West RFQ #22-008
2. This sworn statement is submitted by Jacobs Engineering Group Inc.  
(Name of entity submitting sworn statement)  
whose business address is 1999 Bryan Street, Suite 1200 | Dallas, TX 75201  
Local: 3150 SW 38th Avenue, Suite 700, Miami, FL 33146 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 N/A
3. My name is John Elizabeth Aleman  
(Please print name of individual signing)  
and my relationship to the entity named above is Client Account Manager, Miami-Dade and Monroe Counties
4. I understand that a “public entity crime” as defined in Paragraph 287.133(1)(g), Florida Statutes, 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 or contract for goods or services to be provided to any public or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, material misrepresentation.
5. 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 guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
6. I understand that an “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 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.

7. I understand that a "person" as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural person or 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 for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
8. 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 this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

The person or affiliate has not been put on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

John Elizabeth Aleman  
(Signature)  
August 26, 2022  
(Date)

STATE OF Florida

COUNTY OF Broward

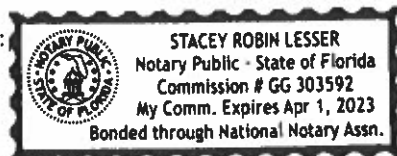
PERSONALLY, APPEARED BEFORE ME, the undersigned authority,

John Elizabeth Aleman Who, after first being sworn by me, affixed his/her  
(Name of individual signing)

Signature in the space provided above on this 26 day of August, 20 22.

My commission expires:

4/1/23



Stacey Robin Lesser  
NOTARY PUBLIC

17 | RFQ #22-008

TRENCHLESS INSTALLATION OF UTILITIES ACROSS FLEMING CHANNEL

**EQUAL BENEFITS FOR DOMESTIC PARTNERS AFFIDAVIT**

STATE OF FLORIDA                     )  
  : SS  
COUNTY OF MONROE                )

I, the undersigned hereby duly sworn, depose and say that the firm of \_\_\_\_\_

Jacobs Engineering Group Inc.

provides benefits to domestic partners of its employees on the same basis as it provides benefits to employees' spouses, per City of Key West Code of Ordinances Sec. 2-799.

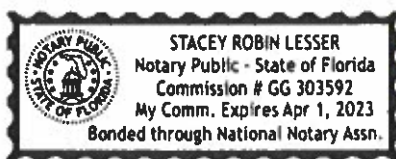
By: John Elizabeth Aleman

John Elizabeth Aleman | Client Account Manager, Miami-Dade and Monroe Counties

Sworn and subscribed before me this 26 day of August, 2022.

NOTARY PUBLIC, State of Florida, at Large

My Commission Expires: 4/1/23



Stacey Robin Lesser

**CONE OF SILENCE AFFIDAVIT**

STATE OF Florida )

: SS

COUNTY OF Broward )

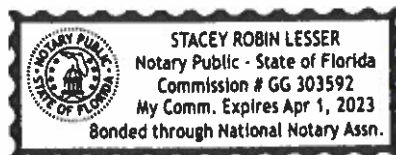
I, the undersigned hereby duly sworn, depose and say that all owner(s), partners, officers, directors, employees and agents representing the firm of Jacobs Engineering Group Inc. have read and understand the limitations and procedures regarding communications concerning City of Key West Code of Ordinances Sec. 2-773 Cone of Silence.

By:   
John Elizabeth Aleman | Client Account Manager, Miami-Dade and Monroe Counties

Sworn and subscribed before me this 26 day of August 2022

NOTARY PUBLIC, State of Florida, at Large

My Commission Expires: April 1, 2023



Stacey Robin Lesser



### **CITY OF KEY WEST INDEMNIFICATION FORM**

PROPOSER agrees to protect, defend, indemnify, save and hold harmless The City of Key West, all its Departments, Agencies, Boards, Commissions, officers, City's Consultant, agents, servants and employees, including volunteers, from and against any and all claims, debts, demands, expense and liability arising out of injury or death to any person or the damage, loss of destruction of any property which may occur or in any way grow out of any act or omission of the PROPOSER, its agents, servants, and employees, or any and all costs, expense and/or attorney fees incurred by the City as a result of any claim, demands, and/or causes of action except of those claims, demands, and/or causes of action arising out of the negligence of The City of Key West, all its Departments, Agencies, Boards, Commissions, officers, agents, servants and employees. The PROPOSER agrees to investigate, handle, respond to, provide defense for and defend any such claims, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto, even if it (claims, etc.) is groundless, false or fraudulent. The City of Key West does not waive any of its sovereign immunity rights, including but not limited to, those expressed in Section 768.28, Florida Statutes. PROPOSER understands and agrees that any and all liabilities regarding the use of any subcontractor for services related to this agreement shall be borne solely by the PROPOSER. Ten dollars of the consideration paid by the City is acknowledged by PROPOSER as separate, good and sufficient consideration for this indemnification.

This indemnification shall be interpreted to comply with Section 725.06 and 725.08, Florida Statutes.

These indemnifications shall survive the term of this agreement. In the event that any action or proceeding is brought against the City of Key West by reason of such claim or demand, PROPOSER shall, upon written notice from the City of Key West, resist and defend such action or proceeding by counsel satisfactory to the City of Key West.

The indemnification provided above shall obligate PROPOSER to defend at its own expense to and through appellate, supplemental or bankruptcy proceeding, or to provide for such defense, at the City of Key West's option, any and all claims of liability and all suits and actions of every name and description covered above which may be brought against the City of Key West whether performed by PROPOSER, or persons employed or utilized by PROPOSER.

The PROPOSER's obligation under this provision shall not be limited in any way by the agreed upon Contract Price as shown in this agreement, or the PROPOSER's limit of or lack of sufficient insurance protection.

**[REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]**

PROPOSER: Jacobs Engineering Group Inc.

Address 1999 Bryan Street, Suite 1200, Dallas, TX 75201  
Local: 3150 SW 38th Avenue, Suite 700  
Miami, FL 33146



Signature

John Elizabeth Aleman

John Elizabeth Aleman

08/26/2022

Print Name

Date

John Elizabeth Aleman | Client Account Manager, Miami-Dade and Monroe Counties  
Title

NOTARY FOR THE PROPOSER

STATE OF Florida

COUNTY OF Broward

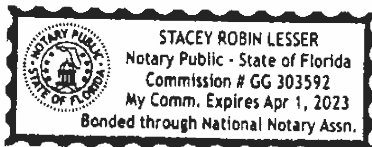
The foregoing instrument was acknowledged before me this 26 day of August, 2022  
By John Elizabeth Aleman, of Jacobs Engineering Group Inc  
(Name of officer or agent, title of officer or agent) (Name of corporation acknowledging)  
or has produced personally known as identification.

Stacey Robin Lesser

Signature of Notary

Stacey Robin Lesser

Print, Type or Stamp Name of Notary



23 | RFQ #22-008

TRENCHLESS INSTALLATION OF UTILITIES ACROSS FLEMING CHANNEL

## **Attachment A**

### **Supplemental Response to Indemnification Form**

Jacobs would like to propose the following Indemnification language that was previously signed in the Master Services Agreement for the 2017 City of Key West RFQ No. 17-002 General Engineering Services pursuit and if selected, Jacobs requests that this language be made part of a final contract agreed to by both parties.

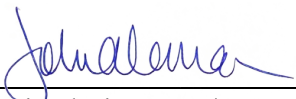
To the fullest extent permitted by law, the CONSULTANT expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents, and employees (herein called the "indemnitees") from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONSULTANT, its Sub-consultants or persons employed or utilized by them in the performance of the Contract. Claims by indemnitees for indemnification shall be limited to the amount of CONSULTANT's insurance or \$1 million per occurrence, whichever is greater. The parties acknowledge that the amount of the indemnity required hereunder bears a reasonable commercial relationship to the Contract and it is part of the project specifications or the bid documents, if any.

The indemnification obligations under the Contract shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONSULTANT under workers' compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the CONSULTANT or of any third party to whom CONSULTANT may subcontract a part or all of the Work. This indemnification shall continue beyond the date of completion of the work.

**SUSPENSION AND DEBARMENT CERTIFICATION**  
CERTIFICATION REGARDING DEBARMENTS, SUSPENSION, INELIGIBILITY AND  
VOLUNTARY EXCLUSION - LOWER TIER FEDERALLY FUNDED TRANSACTIONS

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

Dated this 26 day of August, 20 22.

By:   
Authorized Signature/Contractor

John Elizabeth Aleman | Client Account Manager, Miami-Dade and Monroe Counties  
Name/Title

Jacobs Engineering Group Inc.

Contractor's Firm Name

1999 Bryan Street, Suite 1200 | Dallas, TX 75201

Address

Local: 3150 SW 38th Avenue, Suite 700 Miami, FL 33146

## **Attachment A1**

### **Supplemental Response to Debarment Form 2c**

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.



Attachment H

**Certification Regarding  
Debarment, Suspension, Ineligibility  
And Voluntary Exclusion**


**Subcontractor Covered Transactions**

Avirom & Associates, Inc.

- (1) The prospective subcontractor, \_\_\_\_\_, of the Sub-Recipient certifies, by submission of this document, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the Sub-Recipient's subcontractor is unable to certify to the above statement, the prospective subcontractor shall attach an explanation to this form.

**SUBCONTRACTOR**

Avirom & Associates, Inc.

By:  Digitally signed by Keith M. Chee-A-Tow, PLS  
Date: 2022.09.08 11:11:42 -04'00'

Signature  
Keith Chee-A-Tow, PLS, Land Surveyor

Name and Title  
50 SW 2nd Avenue

Street Address  
Boca Raton, FL 33432

City, State, Zip  
09.08.22

Date

**City of Key West**  
Sub-Recipient's Name

**H0559**  
DEM Contract Number

**4337-501-R**  
FEMA Project Number

Attachment H

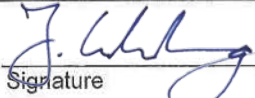
**Certification Regarding  
Debarment, Suspension, Ineligibility  
And Voluntary Exclusion**

**Subcontractor Covered Transactions**

- (1) The prospective subcontractor, Cummins Cederberg,  
of the Sub-Recipient certifies, by submission of this document, that neither it nor its principals is  
presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded  
from participation in this transaction by any Federal department or agency.
- (2) Where the Sub-Recipient's subcontractor is unable to certify to the above statement, the prospective  
subcontractor shall attach an explanation to this form.

**SUBCONTRACTOR**

Cummins Cederberg

By:   
Signature

Jannek Cederberg, President

Name and Title

201 Alhambra Circle, Suite 601

Street Address

Coral Gables, FL 33134

City, State, Zip

September 8, 2022

Date

City of Key West

Sub-Recipient's Name

H0559


DEM Contract Number

4337-501-R

FEMA Project Number

## **DISCLOSURE OF LOBBYING ACTIVITIES**

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

|   |  |   |   |  |  |
|---|--|---|---|--|--|
| <b>1. Type of Federal Action:</b><br><div><b>a.</b><br/>a. contract<br/>b. grant<br/>c. cooperative agreement<br/>d. loan<br/>e. loan guarantee<br/>f. loan insurance</div>   |  | <b>2. Status of Federal Action:</b><br><div><b>a.</b><br/>a. bid/offer/application<br/>b. initial award<br/>c. post-award</div> |   | <b>3. Report Type:</b><br><div><b>a.</b><br/>a. initial filing<br/>b. material change</div><br><b>For Material Change Only:</b><br><div>year _____ quarter _____<br/>date of last report _____</div> |  |
| <b>4. Name and Address of Reporting Entity:</b><br><div><input checked="" type="checkbox"/> Prime      <input type="checkbox"/> Subawardee<br/>Tier _____, if known:<br/><br/>Jacobs Engineering Group Inc.<br/>1999 Bryan Street, Suite, 1200<br/>Dallas, TX 75201<br/><br/>Local: 3150 SW 38th Avenue, Suite 700,<br/>Miami, FL 33146<br/><br/>Congressional District, if known:</div>  |  |   | <b>5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:</b><br><div>N/A<br/><br/><br/><br/><br/><br/><br/><br/><br/><br/>Congressional District, if known:</div>   |  |  |
| <b>6. Federal Department/Agency:</b><br>City of of Key West   |  |   | <b>7. Federal Program Name/Description:</b><br>City of Key West, Installation of Utilities Across Fleming Channel   |  |  |
| <b>8. Federal Action Number, if known:</b><br>Unknown   |  |   | <b>9. Award Amount, if known:</b><br>\$ Unknown   |  |  |
| <b>10. a. Name and Address of Lobbying Entity</b><br>(if individual, last name, first name, MI):<br><br>N/A   |  |   | <b>b. Individuals Performing Services</b> (including address if different from No. 10a)<br>(last name, first name, MI):<br><br>N/A  |  |  |
| <div>(attach Continuation Sheet(s)) SF-LLLA, if necessary)</div>  |  |   |   |  |  |
| <b>11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</b> |  |   | <div><b>Signature:</b> <br/><b>Print Name:</b> John Elizabeth Aleman<br/><b>Title:</b> Client Account Manager, Miami-Dade and Monroe Counties<br/><b>Telephone No.:</b> (786) 298-0180 <b>Date:</b> August 26, 2022</div> |  |  |
| <b>Federal Use Only:</b>  |  |   | Authorized for Local Reproduction<br>Standard Form – LLL (Rev 7 – 97)   |  |  |

**PROHIBITED INTERESTS FORM AND NOTICE**

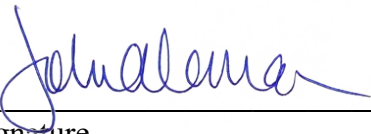
I, John Elizabeth Aleman, Client Account Manager,  
(Printed Name) (Title) Miami-Dade and Monroe Counties, certify that neither  
Jacobs Engineering Group Inc., Local: 3150 SW 38th Avenue, Suite 700 Miami, FL 33146  
(Company Name) (Company Address) 1999 Bryan Street, Suite 1200 | Dallas, TX 7520

nor any of its subcontractors shall enter into any contract, subcontract or arrangement in connection with the project or any property included or planned to be included in the project in which any member, officer or employee of the agency or the locality during tenure or for 2 years thereafter has any interest, direct or indirect. If any such present or former member, officer or employee involuntarily acquires or had acquired prior to the beginning of tenure any such interest, and if such interests is immediately disclosed to the City of Key West, the City of Key West with prior approval of the Division of Emergency Management and the Department of Economic Opportunity, may waive the prohibition contained in this paragraph provided that any such present member, officer or employee shall not participate in any action by the City of Key West or the locality relating to such contract, subcontract or arrangement

NOTICE: The state requires the City of Key West to insert in all contracts entered into in connection with the project or any property included or planned to be included in any project, and shall require its contractors to insert in each of their subcontracts, the following provision:

“No member, officer or employee of the Agency or of the locality during this tenure or for 2 years thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof.”

The provisions of this paragraph shall not be applicable to any agreement between the Agency and its fiscal depositories or to any agreement for utility services the rates for which are fixed or controlled by a government agency.

  
\_\_\_\_\_  
Signature

**VENDOR CERTIFICATION REGARDING  
SCRUTINIZED COMPANIES LISTS**

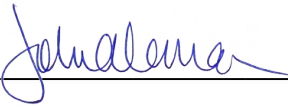
Respondent Vendor Name: Jacobs Engineering Group Inc.  
Vendor FEIN: 95-4081636  
Vendor's Authorized Representative Name and Title: John Elizabeth Aleman | Client Account Manager,  
Miami-Dade and Monroe Counties  
Address: 3150 SW 38th Avenue, Suite 700  
City: Miami State: Florida Zip: 33146  
Phone Number: (786) 298-0180  
Email Address: John.Aleman@jacobs.com

Section 287.135(2)(a), Florida Statutes, prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services of any amount if, at the time of contracting or renewal, the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, or is engaged in a boycott of Israel. Section 287.135(2)(b), Florida Statutes, further prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services over one million dollars (\$1,000,000) if, at the time of contracting or renewal, the company is on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, both created pursuant to section 215.473, Florida Statutes, or the company is engaged in business operations in Cuba or Syria.

As the person authorized to sign on behalf of Respondent, I hereby certify that the company identified above in the section entitled "Respondent Vendor Name" is not listed on either the Scrutinized Companies that Boycott Israel List, Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List I understand that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject such company to civil penalties, attorney's fees, and/or costs and termination of the contract at the option of the awarding governmental entity.

Certified By: John Elizabeth Aleman Client Account Manager, Miami-Dade and Monroe Counties,  
*Print Name* *Print Title*

who is authorized to sign on behalf of the above referenced company.

Authorized Signature: 





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
08/24/2022

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

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

|  |                |  |  |
|--|----------------|--|--|
| PRODUCER LIC #0437153<br>Marsh Risk & Insurance Services<br>CIRTS_Support@jacobs.com<br>633 W. Fifth Street<br><br>Los Angeles, CA 90071 | 1-212-948-1306 | CONTACT NAME:<br>PHONE (A/C. No. Ext):<br>E-MAIL ADDRESS:<br><br>INSURER(S) AFFORDING COVERAGE<br>INSURER A: ACE AMER INS CO<br><br>INSURER B:<br>INSURER C:<br>INSURER D:<br>INSURER E:<br>INSURER F: | FAX (A/C. No): 1-212-948-1306<br><br>NAIC #<br>22667 |
| INSURED<br>Jacobs Engineering Group Inc.<br><br>C/O Global Risk Management<br>1000 Wilshire Blvd., Suite 1140<br>Los Angeles, CA 90017   |                |  |  |

**COVERAGES**

CERTIFICATE NUMBER: 66387477

REVISION NUMBER:

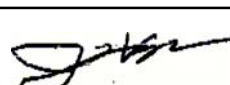
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE 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 SUBR INSD WVD                             | POLICY NUMBER  | POLICY EFF (MM/DD/YYYY)          | POLICY EXP (MM/DD/YYYY)          | LIMITS   |
|----------|---|--|--|----------------------------------|----------------------------------|--|
| A        | <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY<br><input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR<br><input checked="" type="checkbox"/> CONTRACTUAL LIABILITY<br><br>GEN'L AGGREGATE LIMIT APPLIES PER:<br><input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC<br><input type="checkbox"/> OTHER: |  | HDO G72496176  | 07/01/22                         | 07/01/23                         | EACH OCCURRENCE \$ 1,000,000<br>DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000<br>MED EXP (Any one person) \$ 5,000<br>PERSONAL & ADV INJURY \$ 1,000,000<br>GENERAL AGGREGATE \$ 2,000,000<br>PRODUCTS - COMP/OP AGG \$ 1,000,000<br>\$ |
| A        | <input checked="" type="checkbox"/> AUTOMOBILE LIABILITY<br><input checked="" type="checkbox"/> ANY AUTO<br><input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS<br><input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY   |  | ISA H25568230  | 07/01/22                         | 07/01/23                         | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000<br>BODILY INJURY (Per person) \$<br>BODILY INJURY (Per accident) \$<br>PROPERTY DAMAGE (Per accident) \$<br>\$  |
|          | <input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR<br><input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE<br><input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$  |  |  |                                  |                                  | EACH OCCURRENCE \$<br>AGGREGATE \$<br>\$   |
| A        | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)<br>If yes, describe under DESCRIPTION OF OPERATIONS below  | Y/N<br><input checked="" type="checkbox"/> N/A | SCF C68914619 (WI)<br>WLR C6891453A (AOS)<br>WCU C68914577 (OH)* | 07/01/22<br>07/01/22<br>07/01/22 | 07/01/23<br>07/01/23<br>07/01/23 | <input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER<br>E.L. EACH ACCIDENT \$ 1,000,000<br>E.L. DISEASE - EA EMPLOYEE \$ 1,000,000<br>E.L. DISEASE - POLICY LIMIT \$ 1,000,000                                      |
| A        | PROFESSIONAL LIABILITY  |  | EON G21655065 013  | 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: Mike Stickley. CONTRACT MGR: Leanne Andersen. RE: The City of Key West (herein referred to as City) owns and operates the Richard A. Heyman Environmental Protection Facility (WWTP). There are seven utilities, consisting of two (2) wastewater transmission pipelines, (1) water line, and (4) electrical conduits, installed on the Fleming Key utility bridge, over Fleming Channel from Trumbo Point to Fleming Key, Naval Air Station Key West. These welded steel pipelines with traditional flange and bolt connections are approaching 25 years of service and will require significant rehabilitation and/or replacement to address corrosion issues. CONTRACT END DATE: 2025-01-01. PROPOSAL NUMBER: 22-008. SECTOR: Public. City of Key West is added as an additional insured for general liability & auto liability as respects

**CERTIFICATE HOLDER****CANCELLATION**

|  |  |
|--|--|
| City of Key West<br><br>1300 White Street<br><br>Key West, FL 33040<br><br>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.<br><br>AUTHORIZED REPRESENTATIVE<br> |
|--|--|

© 1988-2015 ACORD CORPORATION. All rights reserved.

ACORD 25 (2016/03)

The ACORD name and logo are registered marks of ACORD

nyumdo\_newgalaxy  
66387477

# SUPPLEMENT TO CERTIFICATE OF INSURANCE

DATE  
08/24/2022

NAME OF INSURED: Jacobs Engineering Group Inc.

Additional Description of Operations/Remarks from Page 1:

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. Coverage includes U.S. Longshore and Harbor Workers Compensation Act Coverage and Outer Continental Shelf Lands Act Coverage. \*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.

Additional Information:

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



## SECRETARY CERTIFICATE

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

John Aleman is Client Account Manager of the Company and has been granted authority, by the board of directors to execute documents on behalf of the Company.

Dated this 26th day of August 2022.

A handwritten signature in dark ink, appearing to read "Justin Johnson", written over a horizontal line.

Justin Johnson, Secretary



# *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, 2022, that its most recent annual report/uniform business report was filed on January 13, 2022, 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 Thirteenth day of January,  
2022*



*Randy Be*  
**Secretary of State**

Tracking Number: 9012666043CC

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

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

Department of Business  
& Professional Regulation[HOME](#)[CONTACT US](#)[MY ACCOUNT](#)

## ONLINE SERVICES

[Apply for a License](#)[Verify a Licensee](#)[View Food & Lodging Inspections](#)[File a Complaint](#)[Continuing Education Course Search](#)[View Application Status](#)[Find Exam Information](#)[Unlicensed Activity Search](#)[AB&T Delinquent Invoice & Activity List Search](#)

## LICENSEE DETAILS

12:27:06 PM 8/31/2022

## Licensee Information

|                   |  |
|-------------------|--|
| Name:             | JACOBS ENGINEERING GROUP INC. (Primary Name) |
| Main Address:     | 1999 BRYAN STREET<br>DALLAS Texas 90017      |
| License Mailing:  | 1999 BRYAN STREET<br>DALLAS TX 75201         |
| County:           | OUT OF STATE                                 |
| License Location: | 1999 BRYAN STREET<br>DALLAS TX 75201         |
| County:           | OUT OF STATE                                 |

## License Information

|                 |            |
|-----------------|------------|
| License Type:   | Registry   |
| Rank:           | Registry   |
| License Number: | 2822       |
| Status:         | Current    |
| Licensure Date: | 05/21/1979 |
| Expires:        |            |

## Special Qualifications

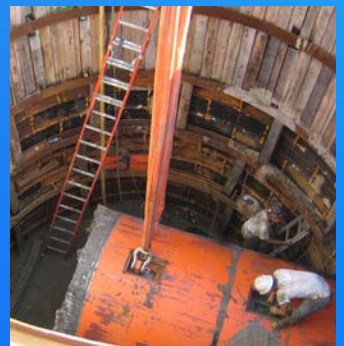
## Qualification Effective

## Alternate Names

[View Related License Information](#)[View License Complaint](#)2601 Blair Stone Road, Tallahassee FL 32399 :: Email: [Customer Contact Center](#) :: Customer Contact Center: 850.487.1395The State of Florida is an AA/EEO employer. [Copyright 2007-2010 State of Florida. Privacy Statement](#)

Under Florida law, email addresses are public records. If you do not want your email address released in response to a public-records request, do not send electronic mail to this entity. Instead, contact the office by phone or by traditional mail. If you have any questions, please contact 850.487.1395. \*Pursuant to Section 455.275(1), Florida Statutes, effective October 1, 2012, licensees licensed under Chapter 455, F.S. must provide the Department with an email address if they have one. The emails provided may be used for official communication with the licensee. However email addresses are public record. If you do not wish to supply a personal address, please provide the Department with an email address which can be made available to the public. Please see our [Chapter 455](#) page to determine if you are affected by this change.





3150 SW 38th Avenue  
Suite 700  
Miami, FL 33146

[www.jacobs.com](http://www.jacobs.com)

**Jacobs**

Challenging today.  
Reinventing tomorrow.