CITY OF

# FORT LAUDERDALE,

FLORIDA

QUALIFICATIONS

## CCNA - CONSTRUCTION ENGINEERING AND INSPECTION (CEI) SERVICES FOR GT LOHMEYER WASTEWATER TREATMENT PLANT REPLACEMENT OF OXYGEN SYSTEM

RFQ # 12401-116

OCTOBER 2020

CDM Smith

621 NW 53rd Street
Suite 265
Boca Raton, FL 33487

October 22, 2020

City of Fort Lauderdale, Procurement Services Division
Attn: Fausto Vargas, Senior Procurement Specialist
100 N. Andrews Avenue, 6th Floor
Fort Lauderdale, FL 33301

**Subject: CCNA - Construction Engineering and Inspection (CEI) Services for GT Lohmeyer Wastewater Treatment Plant Replacement of Oxygen System RFQ# 12401-116**

Dear Mr. Vargas and Members of the Selection Committee:

The City of Fort Lauderdale seeks the services of a qualified, experienced, and licensed firm to provide construction engineering and inspection services (CEI) for the GT Lohmeyer Wastewater Treatment Plant Replacement of Oxygen System. **CDM Smith Inc.** looks forward to further extending our partnership with the City with our selection for this important and specialized project.

As a trusted service provider, CDM Smith has had the privilege of serving the City of Fort Lauderdale on a variety of relevant and pertinent infrastructure assignments. In 1978, our firm designed the original oxygen system that has served your facility well. We are particularly proud of our service as your General Wastewater Consultant for the past 19 years where we have collaborated in the completion of 200 assignments, 54 of which took place at the GT Lohmeyer Wastewater Treatment Plant (GTL WWTP). Our value proposition is further amplified with active assignments at the GTL WWTP, one of them in construction, where we are attuned to your tight site design and operational practices, preferences, procedures and importantly your staff. CDM Smith simply has no learning curve—we know how you work, we know your facilities, and we know your people and preferences.

While our past record is a solid and enviable benchmark, we don't take it for granted. Instead, our firm and our team of professionals are eager, passionate, and enthusiastic about continuing to work together in your future projects for years to come. We are driven by a genuine philosophy of exceptional client service, as evidenced by the following:

- **Continuity in Local Project Leadership:** Our team is led by CDM Smith project manager, **Timothy J. O'Neil, PE, CCM, BCEE**, a 33-year veteran in the industry and a very well-known resource to the City. Tim cares about your facilities and your staff and is the right person for

## Your Evaluation Criteria

**Firm Qualifications and Experience**

FIRM QUALIFICATIONS 30%

- We have partnered with the City on dozens of infrastructure projects continuously for 19 years. We hold the professional licenses, insurance, and qualifications necessary to perform our work effectively.
- In 1978, CDM Smith designed the original GTL WWTP oxygen system as well as later improvements. Our qualifications and experience are key differentiators.

**Qualifications and Experience of Project Team/Sub-Consultants**

PROJECT TEAM QUALIFICATIONS 20%

- Our team is led by a familiar and recognizable professional to the City, Tim O'Neil, a 32-year industry veteran. For the past 19 years, he has served as project manager of the City's previous General Wastewater Consulting Contracts. He knows your utility, he knows your preferences, and most importantly he knows you.
- We offer a depth of expertise and a proven and verifiable record of service to the City. CDM Smith has the size, stability, and resources to handle any and all services requested by the City.
- Project team members were specifically chosen for their value to this specialized assignment, relevant past expertise on similar projects and their past service to the City.
- We understand the City's operational goals and vision for the future better than anyone; we have a clear understanding of the state of GTL WWTP, we simply have no learning curve and ready to provide CEI on your project.

**History of Past Performance: Previous Similar Projects; References**

HISTORY OF PAST PERFORMANCE 20%

- The best reference for this solicitation is our 19-year privilege of serving as your General Wastewater Services Consultant. We have performed a total of 200+ assignments for the City – from planning, hydraulic and process evaluations, regulatory support, and design work to CEI services during construction – in every aspect of your wastewater collection, transmission, treatment, and disposal systems.
- Additionally, our South Florida and Southeast US client references attest to our proven ability to deliver superior services.

**Approach to Scope of Work: Scope of work need to include Planned M/WBE Participation Efforts**

APPROACH TO SCOPE OF WORK 30%

- Our approach to the scope of work hinges on our clear understanding of your needs, goals, and objectives complemented by our firms' proven service record to the City.
- Finding solutions built on 19 years of local, relevant and pertinent infrastructures assignments with the City.
- Bringing our Lessons Learned from similar and goingoing projects to bring improved efficiency and cost savings to the City.
- Local M/WBE staff is serving in key tasks and management roles. Their participation will be met through meaningful project engagement.

**100%** Ready + Reliable = CDM Smith

this job. He is a proven leader with the right demeanor providing continuity and consistency in client service. Together with **Layla L. Llewelyn, PE , PMP** and **Alan J. Saikkonen, PE, BCEE,** they form an expert team with qualified and direct experience in oxygen vacuum pressure swing absorption (VPSA) systems implemented via a design-build delivery method.

- **Solid Capabilities with the Right Perspective:** CDM Smith brings expertise to every facet of this project from our experience of providing CEI inspection services for hundreds of WWTPs across the country. The City also gains value from our advantage of having a contractor's perspective and tools through our construction arm, CDM Constructors Inc. (CCI.) CCI executes construction throughout the United States mostly via design-build delivery. Our proposed constructability lead, **John S. Chandler**, has over 38 years of construction experience and more than 20 years in Southeast Florida serving as a construction project representative/inspector for a variety of projects, including WWTPs/WTPs, pipelines, pumping systems, storage tanks, and piping systems. He will be complemented by **Alexander G. Chinnery** serving as our construction manager. Alex's background is in engineering and construction management, and **has experience working at the GTL WWTP.** These professionals are committed to represent you in the surveillance of the DBF's compliance with construction contract requirements.

- **Ease of Collaboration with your Selected Design-Build Firm (DBF):** Our team has a successful history of collaboration with PCL Construction in South Florida in design-build projects. We recently collaborated on the new 180-ton per day (TPD) contained oxygen VPSA Facility at the Miami Dade Water and Sewer 143 mgd Central District WWTP where PCL Construction is the DBF while CDM Smith led with services that included review of process equipment, electrical, instrumentation, and all DBF design submittals and design review workshops. Our past working relationship is a strength benefitting the City. We are professionals committed and serving as a bridge between the DBF and the City for the completion of this project as your CEI firm in adherence to your contract documents.

- **Proven Local Resources:** CDM Smith combines both the local project delivery horsepower and firmwide capacity, a key and indispensable differentiator. We offer the City with the size, stability, and resources to serve your needs no matter how small, large, simple, or complex. Our team is further bolstered by the engagement in meaningful roles of highly regarded small businesses partners **Nutting Engineers of Florida, Inc.; Keith and Associates, Inc.;** and local to downtown Fort Lauderdale, **McCafferty Brinson Consulting, LLC.** The professionals assigned to this CEI assignment were specifically chosen for their added value, relevant past expertise on similar projects and their past service to the City.

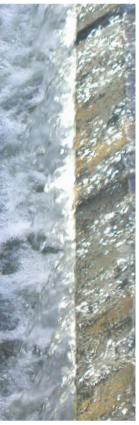
The City will be best served in your selection of CDM Smith as your trusted extension of staff during the implementation of this project. We encourage the selection committee to contact our client references to confirm the timeliness and quality of our work. We look forward to your favorable evaluation of our compelling value proposition and ask for the opportunity to do so as your CEI firm.

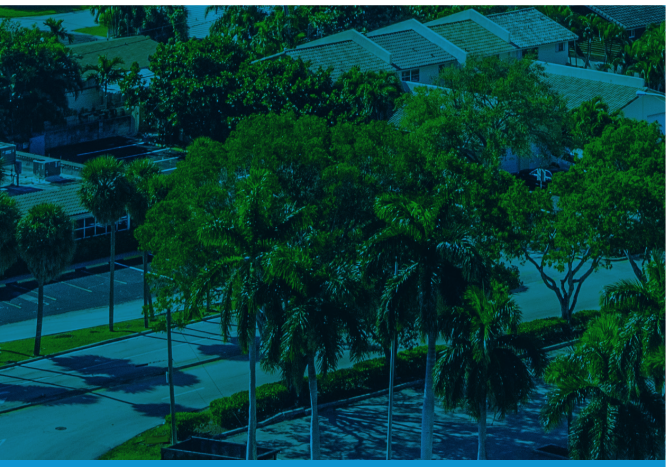
Thank you for your kind consideration on your highly specialized oxygen system replacement project.

Very truly yours,

Ignacio L. Lizama, PE, ENV SP
Vice President
CDM Smith Inc.

# SECTION 1





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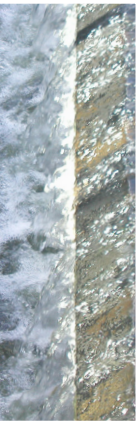
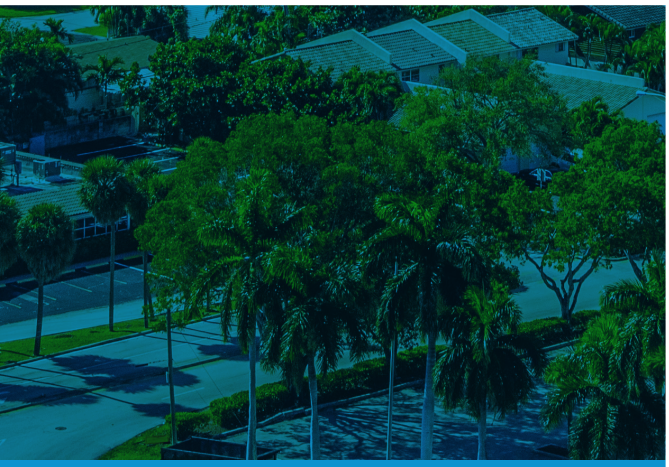
# SECTION 2





## Executive Summary

# Section 2: Executive Summary

## CDM Smith's Long History of Service to the City of Fort Lauderdale

Founded in 1947, CDM Smith has been supporting clients in Florida, the US and across the globe for decades now. Our goal is to be a dependable and high-performance partner who backs the City with a specialized team that combines all disciplines and technologies of the wastewater sector.

**Employee-owned corporation** with more than $1.1B in annual revenues, headquartered in Boston and serving the City Fort Lauderdale from our Boca Raton and Coral Gables offices to deliver exceptional client service, quality results, and enduring value across the entire project life cycle.

**Partnered with the City on dozens of projects at the GTL WTTP,** bringing a profound understanding of the issues associated with the replacement of your old cryogenic oxygen system with a "state-of-the-art" and modern vacuum pressure swing absorption (VPSA) oxygen system, as well as value created through our application of institutional knowledge. For the past 19 years, we have served as your General Wastewater Consultant, in a wide range of projects where our professionals have established the right approach to collaborate with City staff and apply our professional skills. For this project, CDM Smith will serve as a bridge between the City and the selected design-build firm, the PCL Construction-Wade Trim team.

## CDM Smith Qualifications and Experience with Oxygen Production System is Superior Discriminator

We understand the City's operational goals and vision for the future better than anyone; we have a clear understanding of how you work and your expectations, we simply have no learning curve and ready to work on the GT Lohmeyer WWTP Replacement of Oxygen System. In 1978, CDM Smith designed the original GTL WWTP oxygen system as well as later improvements.

### CDM Smith's

Wastewater Project Experience in Southeast Florida within the Past Five Years

**CITY OF FORT LAUDERDALE**

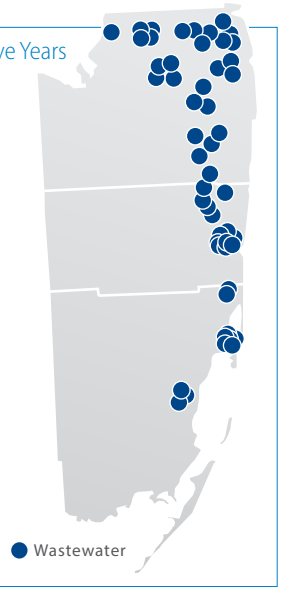
- GTL WWTP CAR Update (Annually)
- GTL WWTP Equipment R&R Report Update (Annually)
- GTL WWTP Operating Permit Renewal
- GTL WWTP Emergency Generator, Electrical 4160-Volt Power Unit Substation, and 480-Volt MCC Replacement
- GTL WWTP Replace Pre-stressed Concrete Cylinder Pipe with Ductile Iron
- GTL WWTP Deep Injection Wells (Five Total) MIT, Brush, Acid
- GTL WWTP Public Address, Liquid Oxygen, and Concrete Improvements
- GTL WWTP 54" Influent Replacement with 48" DIP

**BROWARD COUNTY**

- MPS 450 at WTP 1A Conversion from Wet Well to In-line
- MPS 456 at Broadview Conversion from Wet Well to In-line
- MPS Controls Upgrade
- NRWWTP Load Center Electrical Power Replacement
- MPS 454 Report
- Wastewater Master Meters Upgrades

**MIAMI-DADE COUNTY**

- NDWWTP Primary Clarifier
- NDWWTP Secondary Clarifiers
- CDWWTP Gas Monitor Report
- CDWWTP Oxygen Production
- CDWWTP PS2 Report
- CDWWTP Co-Gen Facility and Biogas Treatment
- CDWWTP Plant W Cluster
- CDWWTP Digester Plant 2
- CDWWTP Dewatering
- SDWWTP Clarifiers
- SDWWTP Dewatering
- SDWWTP Digester
- SDWWTP Disinfection
- SDWWTP Disposal
- SDWWTP Effluent Pump Station
- SDWWTP Filters
- SDWWTP FOG




## Our Small Business Partners Bring Knowledge and Value to the City and the Project

CDM Smith has assembled our team to exceed your goals and objectives identified in the City's solicitation. To this end, our team is proud to bring the local engineering firms of **Keith and Associates, Inc.**, **Nutting Engineers of Florida, Inc., and McCafferty Brinson Consulting, LLC** to this project. Our team also meets the City's desire to include capable M/WBE participation through the inclusion of the Fort Lauderdale headquartered firm, **McCafferty Brinson Consulting, LLC.**. Our history of including local M/WBE firms has introduced new companies into the available pool of engineers and increased South Florida's available resources for future projects.

KEITH

Nutting Engineers

McCafferty Brinson consulting

## Our Project Team's Qualification are all Supported with a Verifiable History of Performance and Superior Client Service Record

**IGNACIO LIZAMA, PE, ENV SP**
Client Service Leader
*Office – Coral Gables*

- Established 27-year track record in the management, planning, design, and construction of significant engineering and infrastructure projects in South Florida
- Vice president of the firm with ability to commit resources to your project
- Professional experience spans every facet of the project cycle, including feasibility studies, design basis reports, master plans, detailed design, construction management, and client interaction

**TIMOTHY O'NEIL, PE, CCM, BCEE**
Project Manager
*Office – Boca Raton*

- Highly recognized and respected project manager; has delivered $48M in Fort Lauderdale community investment plans; brings perfect combination of commitment, integrity and technical capability, which will help drive our team to deliver high-quality results
- Ability to manage projects within schedule and budget makes Tim one of CDM Smith's most sought-after project managers
- More than 33 years of Florida design experience includes having delivered more than $150M in constructed costs

**LAYLA L. LLEWELYN, PE, PMP**
Pre-Construction Phase Lead
*Office – Coral Gables*

- 20 years of experience including capital improvements projects, change management, and technology integration
- Served as design manager for the new 180-ton per day (TPD) contained oxygen VPSA Facility at the Miami Dade Water and Sewer 143 mgd Central District WWTP
- Has performed CIP evaluation, overall project management (scope, schedule, budget), project planning, design management, consultant and subcontractor management, permitting and environmental services coordination, land acquisition, and bidding/procurement support
- Managed CIP projects in various stages of planning, design, and procurement ranging from $200,000 to $7.3M

**ALAN J. SAIKKONEN, PE, BCEE**
VPSA and Cryogenic Oxygen Expert
*Office – Maitland*

- 45 years of wastewater industry leadership with specialized expertise for nutrient removal and pure oxygen systems
- Industry-leading expert in the process mechanical design of high purity oxygen systems, having provided services for major WWTPs more than 400 mgd in size
- Most recent experience includes leading process mechanical design services for CDM Smith's design of the new 180-ton per day (TPD) contained oxygen VPSA Facility at the Miami Dade Water and Sewer 143 mgd Central District WWTP; this project is currently under construction by PCL Construction, the same contractor that will build the City's VPSA project

**ALEXANDER G. CHINNERY**
Construction Manager
*Office – Boca Raton*

- Extensive water and wastewater pump station design experience throughout South Florida focused on equipment location, pump station layout, permitting, and drafting and design of civil and mechanical plans
- Responsibilities include confirming contractor follows the specifications and buildings codes, adheres to local regulations and permits, and remains on schedule
- Project engineer for the design for the replacement of medium voltage electrical equipment at the GTL WWTP, he also worked on the specification review

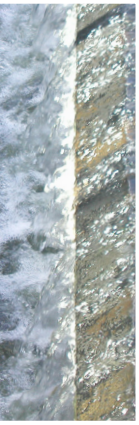
**VIPIN PANGASA, PE, PMP, BCEE**
HPOAS
*Office – Tampa*

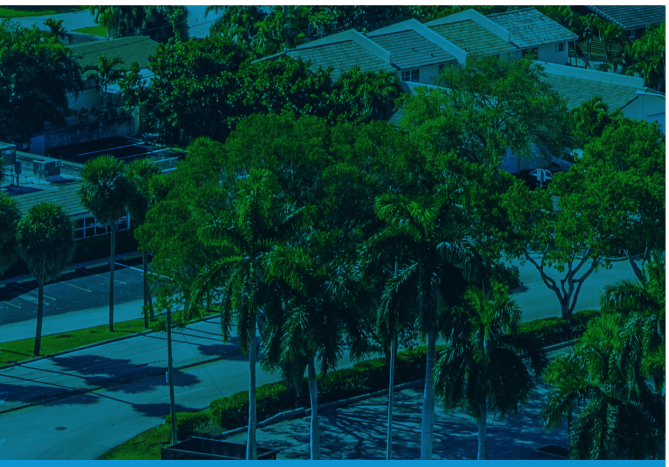
- 31 years of experience on major Florida WWTP design and construction projects utilizing high-level disinfection, high purity oxygen systems, and beneficial reuse, as well as the design and rehabilitation of high-level disinfection and high-purity oxygen systems
- Has managed 100+ projects with a total construction value of nearly $200M, with directly relevant experience that includes WASD's NDWWTP secondary clarifiers upgrades and mechanical design effort for two new 195' secondary clarifiers, a new flocculation tank, and six new deep bed filters at the SDWWTP; Fort Lauderdale's 56.6-mgd Regional WWTP, which utilizes high-purity oxygen generation systems; City of Largo's 45-mgd HLD and effluent management project, which analyzed a number of different HLD alternatives for beneficial reuse; and high level UV upgrades at the JEA Mandarin WRF in Jacksonville

## OUR KEY STATEMENT OF QUALIFICATIONS ELEMENTS

- Delivery of our services is always with your best interests in mind. We coordinate with the City's project team - project manager, operations staff, and management throughout the project lifecycle. For this assignment, we will serve as your representative being vigilant and protecting the City's investment and project's execution in adherence with your Contract Documents.
- Our team is led by a familiar and recognizable professional to the City, Tim O'Neil, a 32-year industry veteran. For the past 19 years, he has served as project manager of the City's previous General Wastewater Consulting Contracts. He knows the GTL WWTP, he knows your preferences and most importantly, he knows you.
- CDM Smith looks forward to our continuation in serving as an extension of the City's staff via the delivery of our services in an efficient and cost-effective manner. We are ready to work on the GT Lohmeyer WWTP Replacement of Oxygen System where we have already established a past working relationship with your selected design-build firm, the PCL Construction-Wade Trim team.

# SECTION 3





## Firm Qualifications and Experience

A-D SECTION

# Architect-Engineer Qualifications

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| A. CONTRACT INFORMATION | |
|---|---|
| 1. TITLE AND LOCATION *(City and State)* | |
| CDM Smith Inc. | |
| 2. PUBLIC NOTICE DATE | 3. SOLICITATION OR PROJECT NUMBER: |
| October 22, 2020 | 12401-116 |

| B. ARCHITECT-ENGINEER POINT OF CONTACT | | |
|---|---|---|
| 4. NAME AND TITLE | | |
| Ignacio L. Lizama, PE, ENV SP; Vice President | | |
| 5. NAME OF FIRM | | |
| CDM Smith Inc. | | |
| 6. TELEPHONE NUMBER | 7. FAX NUMBER | 8. E-MAIL ADDRESS |
| 786.437.2756 | 305.476.9694 | lizamail@cdmsmith.com |

C. PROPOSED TEAM (COMPLETE THIS SECTION FOR THE PRIME CONTRACTOR AND ALL KEY SUBCONTRACTORS.)

| | PRIME | J-V PARTNER | SUBCONTRACTOR | 9. FIRM NAME | 10. ADDRESS | 11. ROLE IN THIS CONTRACT |
|---|---|---|---|---|---|---|
| a. | ✓ | | | CDM Smith – Boca Raton, FL ☑ CHECK IF BRANCH OFFICE | 621 NW 53rd Street, Suite 265, Boca Raton, FL 33487 | Prime |
| b. | ✓ | | | CDM Smith – Coral Gables, FL ☑ CHECK IF BRANCH OFFICE | 4000 Ponce de Leon Boulevard, Suite 200, Coral Gables, FL 33146 | Engineering Support |
| c. | ✓ | | | CDM Smith – Maitland, FL ☑ CHECK IF BRANCH OFFICE | 101 Southhall Lane, Suite 200, Maitland, FL 32751 | Engineering Support |
| d. | ✓ | | | CDM Smith – Tampa, FL ☑ CHECK IF BRANCH OFFICE | 2002 N. Lois Avenue, Suite 200, Tampa, FL 33607 | Engineering Support |
| e. | ✓ | | | CDM Smith – Jacksonville, FL ☑ CHECK IF BRANCH OFFICE | 4651 Salisbury Road, Suite 420 Jacksonville, FL 32256 | Engineering Support |
| f. | ✓ | | | CDM Smith – Atlanta, GA ☑ CHECK IF BRANCH OFFICE | 3200 Windy Hill Road, Suite 210 West, Atlanta, GA 30339 | Engineering Support |
| g. | ✓ | | | CDM Smith – Raleigh, NC ☑ CHECK IF BRANCH OFFICE | 5400 Glenwood Avenue, Suite 400 Raleigh, NC 27612 | Engineering Support |
| h. | ✓ | | | CDM Smith – Charlotte, NC ☑ CHECK IF BRANCH OFFICE | 4600 Park Road, Suite 240 Charlotte, NC 28209 | Engineering Support |
| i. | ✓ | | | CDM Smith – Hartford, CT ☑ CHECK IF BRANCH OFFICE | 77 Hartland St., Suite 201 East Hartford, CT 06108 | Engineering Support |
| j. | ✓ | | | CDM Smith – Boston, MA ☑ CHECK IF BRANCH OFFICE | 75 State Street, Suite 701, Boston, MA 02109 | Engineering Support |
| k. | | | ✓ | Nutting Engineers of Florida, Inc. – Boynton Beach, FL ☐ CHECK IF BRANCH OFFICE | 1310 Neptune Drive Boynton Beach, FL 33426 | Geotechnical Services |
| l. | | | ✓ | McCafferty Brinson Consulting, LLC – Fort Lauderdale, FL ☐ CHECK IF BRANCH OFFICE | 633 S. Andrews Avenue, Suite 402 Fort Lauderdale, FL 33301 | Engineering Support |
| m. | | | ✓ | Keith and Associates, Inc. ☐ CHECK IF BRANCH OFFICE | 301 East Atlantic Boulevard Pompano Beach, FL 33060 | Surveying Services |

# Architect-Engineer Qualifications

PART I – CONTRACT-SPECIFIC QUALIFICATIONS

## D. ORGANIZATIONAL CHART OF PROPOSED TEAM

☑ ATTACHED

The organizational chart is included in Tab 4: Qualifications of the Project Team.
SF 330 Section E Resumes are provided in Tab 4: Qualifications of the Project Team.

## 20. EXAMPLE PROJECT KEY NUMBER | I

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Central District Wastewater Treatment Plant Oxygen Production, Miami, FL** | 2018 | Ongoing |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| Miami-Dade Water and Sewer Department (WASD) | Robert Fergen | 786.218.0758 |
| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | | PROJECT COST: $30M |

### RELEVANCE TO CITY PROJECTS:

Oxygen system • Design-build project • Services on a large regional WWTP • Delivery on-schedule and on-budget

### SCOPE ITEMS INVOLVED:

DCP services during design and construction phases • Advising Client of technical merits of DBFs proposals • CEI Services during pre-construction, construction, and post construction phases

### KEY PERSONNEL:

Lizama • Pangasa • Saikkonen • Chandler • Llewelyn • McArdle • Nunes • Gacharich • Goldman • Verwey

CDM Smith provided design criteria professional (DCP) services for the design and construction of a new oxygen production system at the 143-mgd CDWWTP to provide full redundancy for the facility's high purity oxygen activated sludge system.

CDM Smith evaluated the oxygen delivery needs, evaluating alternatives for addressing the oxygen delivery system deficiencies, and constructing a new oxygen production system to provide full redundancy, as existing units are near the end of their useful life and prone to failure. The project description assumed that the oxygen production unit would use the cryogenic air separation technology, similar to the existing units.

**Existing Oxygen Generation Facilities:** The oxygen production facility is part of the activated sludge process at the CDWWTP. Oxygen for the oxygenation trains is generated on-site by three existing 70-ton per day (tpd) cryogenic oxygen production units which are housed in two buildings. Oxygen Building 1, constructed in 1980, contains two cryogenic oxygen generating units: Unit 1 and Unit 2. Oxygen Building 2, constructed in 1995, contains one cryogenic oxygen generating unit: Unit 3. In addition to the three oxygen generating units onsite, there are four 15,000-gallon capacity liquid oxygen (LOX) storage tanks and four hot water bath liquid oxygen vaporizers for a total of 60,000 gallons or 287 tons.

The proposed oxygen production process is comprised of the two 90-tpd VPSA oxygen production units plus the existing Cryogenic Unit No. 3. During the pre-OOL operating period, when two units may need to operate, Cryogenic Unit No. 3 will remain functional and will serve as the standby (redundant) unit. As such, Cryogenic Unit No. 3, needs to be maintained by WASD so that it is capable of providing reliable standby service. The facilities for the new system will be constructed at selected elevations for adequate resiliency considering sea level rise and surge conditions.

Design criteria documents were prepared for the procurement of the project via a design-build delivery method. Currently, the project is in design by the design-builder as preparatory work, such as utility relocations, demolition, and rough grading are in various states of construction.

**Engineering Services During Design and Construction:** Our team is collaborating with the CD Program Manager/ Construction Manager during the design and construction phases by providing services that included periodic design review, submittal review, responses to requests for information and clarification, and evaluating technical merits of change requests.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Coral Gables, FL | A. Prime |
| B. CDM Smith | B. Boca Raton, FL | B. Engineering Support Services |
| C. CDM Smith | C. Maitland, FL | C. Engineering Support Services |
| D. CDM Smith | D. Tampa, FL | D. Engineering Support Services |
| E. CDM Smith | E. Atlanta, FL | E. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 2

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Alternative Route Analysis and Preparation of Design-Build Criteria for the Installation of a 48-inch Diameter Water Main for "Area N', Miami, FL** | 2017 | Ongoing |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| Miami-Dade Water and Sewer Department (WASD) | Vincent Morello | 786.552.4420 |

| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | PROJECT COST: | $37.2M |
|---|---|---|

### RELEVANCE TO CITY PROJECTS:

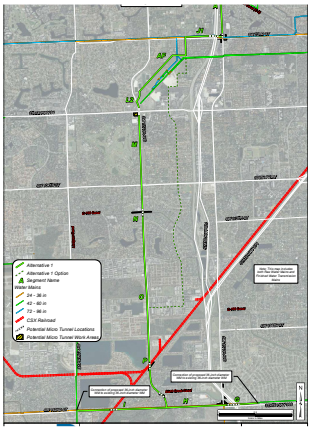
Design-build delivery • Services during pre-construction, construction, and post construction phases • Monitoring of activities

### SCOPE ITEMS INVOLVED:

Preparation of design criteria document • Project cost controls• design-build criteria package • Contract procurement documents • CEI services • Advising clients of DBF submittals

### KEY PERSONNEL:

Lizama • Sabo • Chandler • Llewelyn • Chinnery • McArdle • Nunes • Goldman



As part of the WASD Water Facilities Master Plan Update, "Area N" was a recommended improvements project identified in the evaluation of Hydraulic Deficiencies in Transmission System necessary to formulate the year 2030 base Steady State model. In September 2013, WASD retained CDM Smith to evaluate the proposed Area N route and two alternates for the implementation of this needed water transmission improvement. On November 2015, CDM Smith submitted the Technical Memorandum, "Alternative Route Analysis for Area N 48-inch and 36-inch Water Transmission Main", with a recommended route for the proposed Area N pipelines based on a matrix evaluation that included the evaluation factors of cost, environmental, long-range area planning, constructability, property issues, maintenance, schedule, and public impact. Based on the analysis, the recommended route for the proposed pipelines offered right-of-way (ROW) availability and opportunities at minimizing public impact and site restoration costs.

The Department requested CDM Smith to provide professional services for the development of a design-build criteria package and contract procurement documents for the proposed 48-inch diameter transmission main based on the recommended route, including permitting services, procurement support services, and limited services during the design-build contract phase. The water transmission main is routed through canal crossings, local roads, state road crossings, expressway crossings, and railway crossings.

CDM Smith prepared the design-criteria document providing the design-builder with the technical information necessary to define the project scope, design-criteria, and performance requirements for this project. Open cut installation was recommended for areas not requiring a special construction technique. Trenchless construction was considered for crossing with FDOT ROW, railroad crossing, canal crossings, and crossings of Florida's Turnpike using micro tunneling. CDM Smith also serves as the technical advisors during the ongoing project procurement phase. This project was awarded to a design-builder in December 2015.

Project cost controls are provided through our computerized management information system (PRISMView), which has been refined over the years to best meet our clients' needs. Additionally, we have developed tailored computer programs to enhance our project managers' ability to monitor and control project schedules and budgets established through a Project Management Plan (PMP). Our utilization of these internal tools has allowed us to meet project deliverables within the budgetary goals and quality standards.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Coral Gables, FL | A. Prime |
| B. CDM Smith | B. Boca Raton, FL | B. Engineering Support Services |
| C. CDM Smith | C. Jacksonville, FL | C. Engineering Support Services |
| D. CDM Smith | D. Atlanta, GA | D. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 3

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Master Pump Station 450, Pompano Beach, FL** | 2019 | 2019 |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| Broward County | Merle Medina; Project Manager | 954.831.0791 |
| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | | PROJECT COST: $5.99M |

**RELEVANCE TO CITY PROJECTS:**

Construction scheduling and cost estimating • Bidding • Construction management

**SCOPE ITEMS INVOLVED:**

Specifications • Contract administration • Cost estimating • Planning • Scheduling

**KEY PERSONNEL:**

O'Neil • Sabo • Chandler • Cairo • Chinnery • Mastran • McArdle • Gadberry • Nunes • Kalaria • Alford • Culp • Gacharich • Streng • Goldman • Magenheimer

The North Regional Wastewater Treatment Plant (NRWWTP) receives wastewater from a series of offsite master pump stations in Broward County, including MPS 450, MPS 454, and MPS 456. BCWWS has undertaken a phased conversion of these master pump stations from a wet well/dry well configuration to an in-line booster configuration to address concerns regarding odors and concrete deterioration inside the wet wells.

The proposed improvements for MPS 450 included replacement of an existing external, dual spring surge relieve valve (SRV) to minimize damage caused to the pump station if a transient event were to occur. The primary manufacturer (APCO) discontinued the dual spring SRV and replaced it with an internal, single spring SRV. With the conversion from a wet well to dry well configuration and the changes to the design of the SRV, CDM Smith recommended that a preliminary surge evaluation be performed to provide set points for specifying the spring tension setting of the proposed internal, single spring SRV. Previous booster pump station conversion designs at many stations have removed the surge relief valve off the abandoned wet wells and have re-attached them the pressure force main to the suction side of pump station, thus conveying the surge upstream of the pump instead of out of the system.

CDM Smith designed, permitted, and bid the replacement of the 300 horsepower primary pumps, converted the wet well into a new pump room for the addition of new 60 horsepower low flow jockey pumps, and replaced pump speed control with variable frequency drives. In addition, our team replaced 24-inch diameter valves, flow meter, electrical, and controls to meet future flow conditions. The design includes by-pass pumping of the entire flow during construction. The design also included converting from a wet well into an inline station.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Boca Raton, FL | A. Prime |
| B. CDM Smith | B. Jacksonville, FL | B. Engineering Support Services |
| C. CDM Smith | C. Maitland, FL | C. Engineering Support Services |
| D. CDM Smith | D. Atlanta, GA | D. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 4

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Master Pump Station 456, Pompano Beach, FL** | 2019 | 2019 |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| Broward County | Merle Medina; Project Manager | 954.831.0791 |
| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | | PROJECT COST: $3.66M |

**RELEVANCE TO CITY PROJECTS:**

Construction scheduling and cost estimating • Bidding • Construction management

**SCOPE ITEMS INVOLVED:**

Specifications • Contract administration • Cost estimating • Planning • Scheduling

**KEY PERSONNEL:**

O'Neil • Sabo • Chandler • Cairo • Chinnery • Mastran • McArdle • Gadberry • Nunes • Kalaria • Alford • Culp • Gacharich • Streng • Goldman • Magenheimer

The North Regional Wastewater Treatment Plant (NRWWTP) receives wastewater from a series of offsite master pump stations in Broward County, including MPS 450, MPS 454, and MPS 456. BCWWS has undertaken a phased conversion of these master pump stations from a wet well/ dry well configuration to an in-line booster configuration to address concerns regarding odors and concrete deterioration inside the wet wells.

CDM Smith performed condition survey of each station with our architect, structural, building mechanical, electrical, controls, and pump experts. The capital planning of each station was provided by our construction management and construction costs experts. The condition survey and capital planning included a stakeholder meeting with operations, managers, and engineering to identify critical success factors and vision goals. Outcomes at each station included a sequence of construction, construction scheduling of durations, and opinion of probable construction costs. These outcomes and stakeholder meeting goals were carried through the design phases and into the purchasing bid documentation.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Boca Raton, FL | A. Prime |
| B. CDM Smith | B. Jacksonville, FL | B. Engineering Support Services |
| C. CDM Smith | C. Maitland, FL | C. Engineering Support Services |
| D. CDM Smith | D. Atlanta, GA | D. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 5

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **North District Miami Dade Primary Clarifiers, Miami, FL** | 2017 | Ongoing |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| Miami-Dade Water and Sewer Department (WASD) | Robert Fergen | 786.218.0758 |

| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | PROJECT COST: | $50.5M |
|---|---|---|

### RELEVANCE TO CITY PROJECTS:

Services on a large regional WWTP • Delivery on-schedule and on-budget • Significant MOPO considerations and sequencing • Ability to leverage direct and institutional knowledge of the WWTP facility

### SCOPE ITEMS INVOLVED:

CEI Services • Facility hardening • Services during pre-construction, construction, and post construction phases

### KEY PERSONNEL:

Lizama • O'Neil • Pangasa • Sabo • Chandler • Llewelyn • Cairo • Chinnery • McArdle • Verwey

The NDWWTP's existing primary clarification facilities consist of six 160-foot diameter circular Primary Clarifier Nos. 1 through 6 with domed covers; two Primary Sludge Pump Station (PSPS) Nos. 1 and 2; six odor control chemical scrubbers, one for each clarifier, and two effluent trough chemical scrubbers, housed in PSPS Nos. 1 and 2; primary scum management systems, including a mechanical bar screen and common scum wetwell adjacent to the west of Primary Clarifier No. 4; primary clarifier influent reinforced concrete pipe (RCP) running from the Pretreatment and Sludge Transfer Building to the Primary Clarifiers, and effluent RCP running from the Primary Clarifiers to the Oxygenation Tank Control Chambers; Oxygenation Tank Control Chambers which distribute flow to the downstream oxygenation trains.

This project will replace primary clarifier mechanisms that have become unreliable and/or have exceeded their service life.

- **Civil:** The civil effort for the project included installation, rehabilitation, and/or replacement of yard piping and air ducts for the PSPSs, Odor Control, and Primary Clarifiers.
- **Architectural:** The architectural effort for the project included the rehabilitation and replacement of the Primary Clarifiers covers, and modifications to the PSPSs.
- **Structural:** The architectural effort for the project included the rehabilitation of concrete of the Primary Clarifiers covers, and modifications to the PSPSs.
- **Process Mechanical:** The process-mechanical effort for the project included the rehabilitation and replacement of systems and components associated with the PSPSs, Odor Control Systems, and replacement of the Primary Clarifiers mechanisms in all 6 clarifiers.
- **HVAC/Plumbing:** The HVAC/Plumbing effort for the project included the rehabilitation of the PSPSs, including electrical and control rooms.
- **Electrical:** The electrical effort for the project included the rehabilitation and replacement of the Primary Clarifiers electrical components, replacement of Odor Control, and replacement of various equipment in the PSPSs.
- **Instrumentation and Controls:** The instrumentation and control effort for the project included the rehabilitation and replacement of the Primary Clarifiers, replacement of Odor Control, and replacement of various equipment in the PSPSs.

In an emergency repair effort, this project was split into two bid packages. This project was successfully bid and awarded and is currently under construction

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Coral Gables, FL | A. Prime |
| B. CDM Smith | B. Boca Raton, FL | B. Engineering Support Services |
| C. CDM Smith | C. Jacksonville, FL | C. Engineering Support Services |
| D. CDM Smith | D. Tampa, FL | D. Engineering Support Services |
| E. CDM Smith | E. Atlanta, GA | E. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 6

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **North District Miami Dade Secondary Clarifiers, Miami, FL** | 2016 | Ongoing |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| Miami-Dade Water and Sewer Department (WASD) | Robert Fergen | 786.218.0758 |

| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | PROJECT COST: | $22.8M |
|---|---|---|

### RELEVANCE TO CITY PROJECTS:

Services on a large regional WWTP • Delivery on-schedule and on-budget • Significant MOPO considerations and sequencing • Ability to leverage direct and institutional knowledge of the WWTP facility

### SCOPE ITEMS INVOLVED:

CEI services • Facility hardening • Services during pre-construction, construction, and post construction phases

### KEY PERSONNEL:

Lizama • O'Neil • Pangasa • Sabo • Chandler • Cairo • Chinnery • McArdle • Gacharich • Verwey

The 12 secondary clarifiers (SCs) at WASD's NDWWTP have developed significant corrosion problems and are well beyond their useful life (ranging from 26 to 40 years in service). While concrete can last for 50 years or more and can be repaired, mechanical equipment starts deteriorating beyond the point of repair after 20 years. Over the years WASD has replaced the mechanisms that have failed and become inoperable due to significant corrosion and erosion through their center columns, as well as the electrical equipment and the control equipment associated with the secondary clarifiers that have also reached the end of their service life. The latest replacements of secondary clarifiers took place in 2015 for clarifiers 3, 6 and 8, under an emergency replace¬ment project was implemented to address these failed units. Under CDM Smith's scope of work only the drive units for secondary clarifiers 11 and 12 are being replaced.

CDM Smith collaborated with WASD Operations Staff to develop an early MOPO planning that established a sequencing protocol to avoid disruption and maintain a minimum clarifier capacity during wet weather and peak flow considerations. For the NDWWTP Maintenance of Plant Operations (MOPO), our team provided color-coded illustrations showing a sequence of secondary clarifier activities to occur during dry weather, clearly indicating the units "in service" or "out of service" during each activity to help operators determine the impacts to plant operations and the maximum treatment capacity ensuring that units will be not overloaded beyond their safe operational capacity. The complete scope of upgrades to the NDWWTP's secondary clarifiers consisted of the following:

- Replacement of the drive unites in SCs 11 and 12, electrical components, motor drives and gearboxes.
- Replacement of the existing airlift pumps with cantilever chopper pump including new scum collection tank, valves and appurtenances in SCs 11 and 12.
- Rehabilitation of the dome structures in SCs 1-12.
- Removal of deteriorated coating, structural rehabilitation of eroded areas, and re-coating of launder and interior tank walls with epoxy coating for SCs 11 and 12.
- Replacement of electrical feed from MCCs to new clarifier drives and other ancillary secondary clarifier equipment.
- Replacement of the RAS pumps at each of the three Return Sludge Pump Stations (RSPS).
- Replacement of instruments such as magnetic flow meters at each RSPS, install sludge blanket analyzers in SCs 1–12, and install new floats and local control panel for new scum pumps controls at SCs 11 and 12.

The project was successfully bid and awarded and is currently under construction.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Coral Gables, FL | A. Prime |
| B. CDM Smith | B. Boca Raton, FL | B. Engineering Support Services |
| C. CDM Smith | C. Jacksonville, FL | C. Engineering Support Services |
| D. CDM Smith | D. Tampa, FL | D. Engineering Support Services |
| E. CDM Smith | E. Atlanta, GA | E. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 7

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Lakeside Ranch STA & S-191A PS, Okeechobee, FL** | Ongoing | Ongoing |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| South Florida Water Management District | Robert Fitzpatrick, PE | 631.885.0321 |
| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | | PROJECT COST: $31M |

**RELEVANCE TO CITY PROJECTS:**
Construction support services

**SCOPE ITEMS INVOLVED:**
Procurement package development • Preparation of construction plans and specifications • Cost estimates and construction schedules

**KEY PERSONNEL:**
O'Neil • Chandler • Chinnery • McArdle • Gadberry • Nunes • Kalaria • Gacharich • Streng • Goldman • Whiteside

CDM Smith supported SFWMD with engineering studies, calculations and analyses, preliminary and final design, preparation of design reports, cost estimates and construction schedules, operation plans, construction plans and specifications, and construction-support services for the 600 cfs S-191A Pump Station as part of the Lake Okeechobee Fast-Track (LOFT) project to provide environmental restoration and flood control in collaboration with USACE Jacksonville District. The scope of work for this project included geotechnical and hydrogeologic field laboratory investigations and analyses; BODR; PDR; preliminary, final design, and updated final design of the S-191A Pump Station; construction bid documents; and construction support. The S-191A Pump Station is under construction, with expected completion in 2021.

**Construction plans/specifications suitable for use in competitive bidding processes:** Construction plans were developed for the 30, 60, 90, and 100% stages and specifications were developed for the 60, 90, and 100% design stages. Since the S-191A Pump Station was the final phase of the LOFT project, the final design was updated in 2018 for current design standards as a result of the funding schedule.

Based on modeling and design evaluations conducted during the BODR phase, we conducted preliminary design and final design services for the dual-purpose flood control S-191A Pump Station with 450 cfs flood control pumping capacity with 150 cfs of backup capacity for a total of 600 cfs. The pump station can be used for flow return capacity to provide hydration of the LRSTA during dry periods and additional nutrient removal. The pump station design included narratives and calculations; operations plan; opinion of probable construction cost; and detailed drawings for the civil, structural, electrical, and instrumentation components of the project.

The pump station is located in the C-59 canal levee adjacent to the L-47 canal at the exterior toe of the Herbert Hoover Dike that surrounds Lake Okeechobee. The design and construction documents included detailed requirements for the cofferdam and dewatering requirements to protect the dike during pump station construction. The cofferdam design included two alternatives: (1) double-row sheet-pile cofferdam with two-stage dewatering systems and (2) single-row sheet-pile cofferdam with an anchored concrete tremie plug. The contractor selected and successfully installed the tremie-plug alternative. We designed the S-191A Pump Station to remain operational during a hurricane event by specifying four electric submersible pumps with backup diesel generators. We based the design on District Major Pump Station Guidelines

**Cost estimates and construction schedules:** We prepared opinions of probable construction cost at the 30, 60, 90, and 100% stages along with construction schedules.

**Engineering services during construction:** CDM Smith is providing construction support for the S-191A Pump Station on-site engineering to support the construction management firm, review of shop drawings and RFIs, and site visits by the engineer of record and geotechnical design engineer during critical times during the cofferdam construction, excavation for the pump station foundation, and during pile installation for the discharge pipes.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Boca Raton, FL | A. Prime |
| B. CDM Smith | B. Jacksonville, FL | B. Engineering Support Services |
| C. CDM Smith | C. Maitland, FL | C. Engineering Support Services |
| D. CDM Smith | D. Atlanta, GA | D. Engineering Support Services |
| E. CDM Smith | E. Raleigh, NC | E. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 8

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Ion Exchange Resin Plant and East WTP Improvements, Boynton Beach, FL** | 2017 | 2017 |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| City of Boynton Beach, FL | Michael Low, Manager Technical Services | 561.742.6403 |
| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | | PROJECT COST: $25.5M |

**RELEVANCE TO CITY PROJECTS:**

Progressive design-build method • DBF experience • Award winning project

**SCOPE ITEMS INVOLVED:**

Procurement package development • Preparation of construction plans and specifications • Cost estimates and construction schedules

**KEY PERSONNEL:**

Gadberry • Alford • Gacharich

CDM Smith delivered a progressive design-build installation of an Ion Exchange Resin Plant at the West WTP site for pretreatment of the water supply to the East WTP from the western wellfield while upgrading the WTP to a capacity of 24 mgd. When CDM Smith was engaged, our initial cost estimate of all components was $48M. As this price was 50 percent over the City's budget, we worked with the City to perform cost assessments and value engineering as design continued and provided target estimates at the 10, 30, and 60 percent levels. The final guaranteed maximum price was signed for $30.8M. Using a progressive design-build approach, the team was able to deliver the baseline scope below the initial budget. Approximately $2.5M in savings from value engineering allowed the City to proceed with several other value-added items, including:

- Modified parking layouts, fencing, and security systems to provide separation between employee parking areas and plant operations, and to allow employees to park near the administration building.
- Installed a new programmable LED lighting system to provide colored aesthetics to both the City's iconic water tower and ground storage tank.
- Constructed a new medical clinic on the site which provides basic services to City employees and reduces the City's costs for employee medical insurance. Our original contract only included construction of new stud walls but with the savings, we were able to complete the full build out of the clinic.
- Performed significant structural repairs of the existing finished water clearwell.
- Added design improvements to the base MIEX system with inclined stainless-steel resin settling plates (instead of tubes) to separate the resin from the treated water, allowing for easier maintenance and resilience in the system.
- Performed testing to evaluate structural integrity of the existing silos as the original scope included complete replacement of the existing lime silos. Based on the results of the testing, we recommended that the existing silos be retained (with repairs). The resulting savings allowed funding of other needed improvements.
- Provided self-performance of selected work packages including yard piping. By self-performing the yard piping, we were able to address several utility conflicts in real-time with our in-house designers and construction professionals working to develop work-arounds and minimize cost and schedule impacts.

The Design-Build Institute of America (DBIA) awarded this project the 2018 National Merit Award and the 2018 Florida DBIA Best Overall Award.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Boca Raton, FL | A. Prime |
| B. CDM Smith | B. Maitland, FL | B. Engineering Support Services |
| C. CDM Smith | C. Atlanta, GA | C. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 9

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Central Monitoring Facility, Palm Beach County, FL** | 2013 | 2013 |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| Palm Beach County Water Utilities Department (WUD) | Anthony Longo, Facilities System Project Manager | 561.233.2763 |
| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | | PROJECT COST: $1.94M |

**RELEVANCE TO CITY PROJECTS:**
Bidding • Construction management

**SCOPE ITEMS INVOLVED:**
Owner's representative

**KEY PERSONNEL:**
Chandler • Kalaria • Alford • Verwey

As part of an existing consultant agreement with the Palm Beach County WUD, CDM Smith was retained to provide professional design services associated with preliminary design, final design, permitting, and bidding, and construction management for the 3,000-ft2 Central Monitoring Facility (CMF). CDM Smith worked as a prime consultant with PCL as a subconsultant.

During preliminary design, we evaluated the agreed upon three Options for the CMF: Option 1 – Interior renovation of the document storage area on the first floor of the existing Central Regional Operations Center (CROC) Administration and Engineering Building; Option 2 – Addition to the southeast side of the existing CROC building; and Option 3 – A new standalone facility located on the CROC complex site. After evaluating each of the options with WUD for construction costs, site modifications, impact to future operations and impact to current staff, it was decided that Option 2 was the most viable option.

CDM Smith completed final design of Option 2, an approximately 3,000-ft2 hurricane hardened addition to the existing CROC building in May 2012. This facility is the central nerve for the County on a daily basis serving as the hub for monitoring, optimizing, controlling, and responding to situations within WUD's water, wastewater, and reclaimed water systems. During the final design phase, we continued to collaborate with WUD through interactive charrettes which, with the input of all stakeholders, allowed the design to be tweaked and revised to meet WUD's needs for this very important facility.

The project was constructed through WUD's existing Construction Management-At-Risk (CMAR) contract with the Contractor. CDM Smith was the owner's representative during construction. Specifically, we negotiated the contract price with the CMAR firm, reviewed shop drawings, made recommendations on the resolution of issues, attended construction meetings, and conducted the substantial completion and final completion inspections.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Boca Raton, FL | A. Prime |
| B. CDM Smith | B. Maitland, FL | B. Engineering Support Services |
| C. CDM Smith | C. Atlanta, GA | C. Engineering Support Services |

## 20. EXAMPLE PROJECT KEY NUMBER | 10

| 21. TITLE AND LOCATION (CITY AND STATE) | 22. YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION (If applicable) |
| **Design-Build Criteria Professional Services for Fire Station No. 113, Delray Beach, FL** | 2018 | N/A |

| 23. PROJECT OWNER'S INFORMATION | | |
|---|---|---|
| a. PROJECT OWNER | b. POINT OF CONTACT NAME | c. POINT OF CONTACT TELEPHONE NUMBER |
| City of Delray Beach, FL | Isaac Kovner, PE, Principal Engineer | 561.243.7341 |
| 24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(INCLUDE SCOPE, SIZE, AND COST)* | | PROJECT COST: $144,000 |

**RELEVANCE TO CITY PROJECTS:**

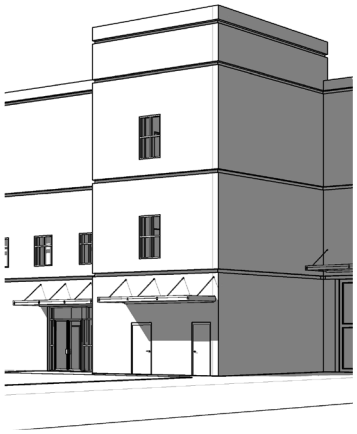
Design criteria package • CEI services

**SCOPE ITEMS INVOLVED:**

Procurement package development • Preparation of construction plans and specifications • Cost estimates and construction schedules

**KEY PERSONNEL:**

Chandler • Sutter • Mastran • McArdle • Gadberry • Mercado • Nunes • Kalaria • Alford • Gacharich • Miller



City of Delray Beach currently operates Fire-Rescue Station No. 113 (formerly Fire-Rescue Station No. 3), located at 651 Linton Boulevard, Delray Beach, Florida. The primary use of this facility is a continuously occupied fire rescue station with living facilities. The City intends to construct a new fire-rescue station and Emergency operations center (EOC) facility on the existing site, which will continue to provide appropriate fire-rescue response times to the community and serve as the main command center for the City during emergencies.

CDM Smith prepared the Design Criteria Package (DCP) to include a detailed scope, establish the design criteria, performance requirements, and bid and contract parameters for the Project. The Design Criteria Package included details for a new, 28,300 square foot facility to replace the existing 6,000 square foot facility. The programmed space is split over three floors and the DCP includes facility room data sheets for each space within the building, outlining City requirements for room sizes, materials, finish selections, hardware, furniture, special equipment, telecommunication systems, and also criteria for mechanical, electrical and plumbing (MEP) systems, site development, landscaping, utilities services and stormwater management. Conceptual floor plans were developed with the Owner for the entire facility to validate the facility size and to ensure proper functional relationships met the Owner's requirements.

The new 28,300 square foot Fire-Rescue Station No. 113 includes an Apparatus Bay with drive-through access for three parallel bays and a two-level, attached office/ living quarters component. The third floor of the building is dedicated to the EOC. The building will accommodate five distinct functional zones:

1. Apparatus Bay
2. Apparatus Bay Support
3. Office and Administration
4. Crew Living Quarters
5. Emergency Operations Center

Several design criteria meetings were held with City personnel to incorporate preferences and manage site constraints while achieving the City's overall goal.

CDM Smith prepared the planning level Opinion of Probable Construction Cost for the Fire-Rescue Station No. 113 and Emergency Operation Center based on the final design criteria prepared. This project was successfully bid and awarded. The hired CDM Smith to provide CEI services during the construction, construction and post-construction phases.

| 25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT | | |
|---|---|---|
| (1) FIRM NAME | (2) FIRM LOCATION *(CITY AND STATE)* | (3) ROLE |
| A. CDM Smith | A. Boca Raton, FL | A. Engineering Support Services |
| B. CDM Smith | B. Coral Gables, FL | B. Engineering Support Services |
| C. CDM Smith | C. Maitland, FL | C. Engineering Support Services |
| D. CDM Smith | D. Tampa, FL | D. Engineering Support Services |
| E. CDM Smith | E. Atlanta, GA | E. Engineering Support Services |

# Key Personnel Participation in Example Projects

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 26. NAMES OF KEY PERSONNEL (FROM SECTION E, BLOCK 12) | 27. ROLE IN THIS CONTRACT (FROM SECTION E, BLOCK 13) | 28. EXAMPLE PROJECTS LISTED IN SECTION F (FILL IN "EXAMPLE PROJECTS KEY" SECTION BELOW BEFORE COMPLETING TABLE.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Ignacio L. Lizama, PE, ENV SP | Principal-in-Charge | ✓ | ✓ | | | ✓ | ✓ | | | | |
| Timothy J. O'Neil, PE, CCM, BCEE | Project Manager | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Tommy Floyd, DBIA | Technical Review Committee – Quality Control, Quality Assurance | | | | | | | | | | ✓ |
| Vipin Pangasa, PE, PMP, BCEE | Technical Review Committee – HPOAS | ✓ | | | | ✓ | ✓ | | | | |
| Joseph J. Sabo | Health and Safety, COVID-19 Protocol, Training, Risk Management Plan Review | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| Alan J. Saikkonen, PE, BCEE | VPSA and Cryogenic Oxygen Expert | ✓ | | | | | | | | | |
| John S. Chandler | Constructibility Lead | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Layla L. Llewelyn, PE, PMP | Pre-Construction Phase Lead | ✓ | ✓ | | | ✓ | | | | | |
| Melissa X. Cairo | Jurisdiction Engagement, Preliminary Budgets; Final Documentation and Retention | | | ✓ | ✓ | ✓ | ✓ | | | | |
| Stephen M. Solters | Feasibility of Construction Methods | | | | | | | | | | ✓ |
| Douglas M. Sutter, CCM | Schedule Review and Analysis | | | | | | | | | | ✓ |
| Alexander G. Chinnery | Construction Manager | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| David M. Mastran | Senior Field Inspection | | | ✓ | | | | | | | ✓ |
| Beth E. McArdle | Administration, Project Files and Document Control | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| Craig A. Gadberry, PE | Project Budget vs Cost Review and Tracking | | | ✓ | ✓ | | | ✓ | ✓ | | ✓ |
| Richard K. Newberg | Start-up, Testing and Commissioning, City Staff Training | | | | | | | | | | |

29. EXAMPLE PROJECTS KEY

| NO. | TITLE OF EXAMPLE PROJECT (FROM SECTION F) | NO. | TITLE OF EXAMPLE PROJECT (FROM SECTION F) |
|---|---|---|---|
| 1 | Central District Wastewater Treatment Plant Oxygen Production, Miami, FL | 6 | North District Miami Dade Secondary Clarifiers, Miami, FL |
| 2 | Alternative Route Analysis and Preparation of Design-Build Criteria for the Installation of a 48-inch Diameter Water Main for "Area N", Miami, FL | 7 | Lakeside Ranch STA & S-191A PS, Okeechobee, FL |
| 3 | Master Pump Station 450, Pompano Beach, FL | 8 | Ion Exchange Resin Plant and East WTP Improvements, Boynton Beach, FL |
| 4 | Master Pump Station 456, Pompano Beach, FL | 9 | Central Monitoring Facility, Palm Beach County, FL |
| 5 | North District Miami Dade Primary Clarifiers, Miami, FL | 10 | Design-Build Criteria Professional Services for Fire Station No. 113, Delray Beach, FL |

# Key Personnel Participation in Example Projects

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 26. NAMES OF KEY PERSONNEL (FROM SECTION E, BLOCK 12) | 27. ROLE IN THIS CONTRACT (FROM SECTION E, BLOCK 13) | 28. EXAMPLE PROJECTS LISTED IN SECTION F (FILL IN "EXAMPLE PROJECTS KEY" SECTION BELOW BEFORE COMPLETING TABLE.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Yanice I. Mercado, PE, PMP | Post-Construction Phase Lead | | | | | | | | | | ✓ |
| Allyson L. Nunes | Final Documentation and Retention | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | ✓ |
| Pooja H. Kalaria, PE | Lead Structural | | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| Michael T. Alford, AIA, LEED® AP BD+C | Lead Architect | | | ✓ | ✓ | | | | ✓ | ✓ | ✓ |
| Amanda R. Culp, Assoc. AIA | Architect | | | ✓ | ✓ | | | | | | |
| Emilio H. Gacharich, PE | Lead Electrical | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ | | ✓ |
| Adrian Streng | Lead Programming SCADA | | | ✓ | ✓ | | | ✓ | | | |
| Jane E. Madden, PE, BCEE | WW Process | ✓ | | | | ✓ | ✓ | | | | |
| Jonathan Z. Goldman, PE, PMP, BCEE | Hydraulic and Pumps | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | |
| Timothy A. Verwey, PE | Laser Scan, Drone, and 3D | ✓ | | | ✓ | ✓ | ✓ | | | ✓ | |
| Stewart J. Magenheimer, PG, PMP | Soils | | | ✓ | | | | | | | |
| Stephen L. Whiteside, PE | Auger Cast Piles | | | | | | | ✓ | | | |
| Gordon H. Miller | Construction Costs | | | | | | | | | | ✓ |
| Michael P. Picard | Project Delivery Analysis and Recommendations | | | | | | | | | | ✓ |

29. EXAMPLE PROJECTS KEY

| NO. | TITLE OF EXAMPLE PROJECT (FROM SECTION F) | NO. | TITLE OF EXAMPLE PROJECT (FROM SECTION F) |
|---|---|---|---|
| 1 | Central District Wastewater Treatment Plant Oxygen Production, Miami, FL | 6 | North District Miami Dade Secondary Clarifiers, Miami, FL |
| 2 | Alternative Route Analysis and Preparation of Design-Build Criteria for the Installation of a 48-inch Diameter Water Main for "Area N', Miami, FL | 7 | Lakeside Ranch STA & S-191A PS, Okeechobee, FL |
| 3 | Master Pump Station 450, Pompano Beach, FL | 8 | Ion Exchange Resin Plant and East WTP Improvements, Boynton Beach, FL |
| 4 | Master Pump Station 456, Pompano Beach, FL | 9 | Central Monitoring Facility, Palm Beach County, FL |
| 5 | North District Miami Dade Primary Clarifiers, Miami, FL | 10 | Design-Build Criteria Professional Services for Fire Station No. 113, Delray Beach, FL |

# Additional Information

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

We believe that our submittal contains all required information in response to the City's RFQ 12401-116, CCNA - CEI Services for GTL WWTP Replacement of Oxygen System. In an effort not to duplicate information and provide you with a more streamlined proposal, we have included all information within each tab of our proposal.

I. AUTHORIZED REPRESENTATIVE

THE FOREGOING IS A STATEMENT OF FACTS

| 31. SIGNATURE | 32. DATE |
|---|---|
| | October 22, 2020 |
| 33. NAME AND TITLE | |
| Ignacio L. Lizama, PE, ENV SP; Vice President | |

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 621 NW 53rd Street, Suite 265 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Boca Raton | FL | 33487 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| Suzanne E. Mechler, PE, BCEE; Principal | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 561.571.3800 | mechlerse@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | - | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | 1 | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 1 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 1 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 4 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | 3 | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | 4 | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 6 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | 1 | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | 4 | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | 2 | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | - | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 1 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | 2 | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | - | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | - | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 1 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | - | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 2 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | - | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 7 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 37 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| | October 22, 2020 | Suzanne E. Mechler, PE, BCEE; Associate |

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 4000 Ponce de Leon Boulevard, Suite 720 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Coral Gables | FL | 33146 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| Ignacio L. Lizama, PE, ENV SP; Vice President | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 305.372.7171 | lizamail@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | - | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | - | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 2 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | - | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | - | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | - | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | - | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 5 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | - | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | - | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | - | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | - | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 117 | - | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 101 | - | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | - | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | 2 | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 2 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | - | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 1 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | - | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 1 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 13 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| | October 22, 2020 | Ignacio L. Lizama, PE, ENV SP; Vice President |

CDM Smith

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 101 Southhall Lane, Suite 200 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Maitland | FL | 32751 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| Eric J. Grotke, PE, BCEE; Vice President | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 407.660.2552 | grotkeej@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | 6 | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | 13 | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 6 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 38 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 13 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | 8 | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | 10 | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 7 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | 3 | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | - | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | 2 | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | 2 | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 2 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | 7 | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | 4 | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | 13 | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 1 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | 5 | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 21 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | 9 | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 29 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 199 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| | October 22, 2020 | Eric J. Grotke, PE, BCEE; Vice President |

CAM 21-0127
Exhibit 4
Page 28 of 117

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 2002 N. Lois Avenue, Suite 200 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Tampa | FL | 33607 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| Timothy J. Smith, PE, PMP; Principal | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 813.281.2900 | smithtim@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | - | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | - | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 4 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 1 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 1 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | 1 | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | 3 | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 11 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | - | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | - | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | - | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | - | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 1 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | 2 | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | 1 | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | 2 | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 1 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | - | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 5 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | 2 | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 876 | 7 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 42 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| | October 22, 2020 | Timothy J. Smith, PE, PMP; Principal |

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 4651 Salisbury Road, Suite 420 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Jacksonville | FL | 32256 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| Patrick R. Victor, PE, DWRE; Vice President | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 904.731.7109 | victorpr@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | - | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | - | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 1 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 7 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 1 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | - | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | - | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 7 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | 1 | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | - | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | 1 | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | - | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 2 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | 4 | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | - | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | 1 | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 1 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | - | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | - | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | 1 | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 4 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 31 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000 | 6. $2 million to less than $5 million |
| b. NON-FEDERAL WORK | 10 | 2. $100,000 to less than $250,000 | 7. $5 million to less than $10 million |
| c. TOTAL WORK | 10 | 3. $250,000 to less than $500,000 | 8. $10 million to less than $25 million |
| | | 4. $500,000 to less than $1 million | 9. $25 million to less than $50 million |
| | | 5. $1 million to less than $2 million | 10. $50 million or greater |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| Patrick Victor | October 22, 2020 | Patrick R. Victor, PE, DWRE; Vice President |

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 3200 Windy Hill Road, Suite 210 West | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Atlanta | GA | 30339 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| David L. Collins, PE, BCEE; Vice President | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 703.691.6500 | collinsdl@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | - | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | 1 | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 3 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 6 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 1 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | - | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | 1 | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 11 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | 1 | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | 1 | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | 1 | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | - | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 1 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | 1 | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | - | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | 4 | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | - | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | 2 | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 2 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | 4 | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 10 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 50 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| | October 22, 2020 | David L. Collins, PE, BCEE; Vice President |

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 5400 Glenwood Avenue, Suite 400 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Raleigh | NC | 27612 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| David L. Collins, PE, BCEE; Vice President | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 919.325.3500 | collinsdl@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | - | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | 4 | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 12 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 5 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 3 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | 2 | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | 7 | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 19 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | 3 | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | 4 | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | 4 | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | 6 | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 2 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | 2 | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | 1 | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | 3 | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 3 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | 8 | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 2 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | 7 | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 9 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 106 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| | October 22, 2020 | David L. Collins, PE, BCEE; Vice President |

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# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 4600 Park Road, Suite 240 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Charlotte | NC | 28209 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| David L. Collins, PE, BCEE; Vice President | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 919.325.3500 | collinsdl@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | - | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | - | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 3 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 3 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 1 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | - | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | 1 | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 11 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | - | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | - | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | - | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | 2 | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 3 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | - | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | - | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | - | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 1 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | - | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 2 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | 4 | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 6 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 38 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| | October 22, 2020 | David L. Collins, PE, BCEE; Vice President |

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 77 Hartland St., Suite 201 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| East Hartford | CT | 06108 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| Kevin C. Leo, PE, BCEE; Senior Vice President | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 561.571.3728 | LeoKC@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | - | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | 3 | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 11 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 7 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 1 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | 2 | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | - | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 14 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | 2 | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | 3 | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | - | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | - | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 2 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | 2 | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | - | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | 19 | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 1 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | 1 | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 2 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | 8 | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 6 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 84 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| Kevin C. Leo | October 22, 2020 | Kevin C. Leo, PE, BCEE; Senior Vice President |

# Architect-Engineer Qualifications

## PART II – GENERAL QUALIFICATIONS

| (If a firm has branch offices, complete for each specific branch office seeking work.) | | | 1. SOLICITATION NUMBER (if any): | |
|---|---|---|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | | | 12401-116 | |
| CDM Smith Inc. | | | 3. YEAR ESTABLISHED | 4. DUNS NUMBER |
| 2b. STREET | | | 1947 | 05-599-0261 |
| 75 State Street, Suite 701 | | | 5. OWNERSHIP | |
| 2c. CITY | 2d. STATE | 2e. ZIP | a. TYPE | b. SMALL BUSINESS STATUS: |
| Boston | MA | 02109 | Corporation | Large Business |
| 6a. POINT OF CONTACT NAME AND TITLE | | | 7. NAME OF FIRM (if block 2a is a branch office) | |
| David L. Collins, PE, BCEE; Vice President | | | CDM Smith Inc. | |
| 6b. TELEPHONE NUMBER: | 6c. E-MAIL ADDRESS: | | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
| 617.452.6000 | collinsdl@cdmsmith.com | | 1947 | 05-599-0261 |
| 8. FORMER FIRM NAME(S) (if any) | | | | |
| Camp Dresser & McKee; Camp Dresser & McKee Inc. | | | | |

| 9. EMPLOYEES BY DISCIPLINE | | | | 10. PROFILE OF FIRMS EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS | | |
|---|---|---|---|---|---|---|
| a. FUNCTION CODE | b. DISCIPLINE | c. NO. OF EMPLOYEES (1) FIRM | c. NO. OF EMPLOYEES (2) BRANCH | a. PROFILE CODE | b. EXPERIENCE | c. REVENUE INDEX NUMBER (see below) |
| 06 | Architect | 52 | 5 | A12 | Automation; Controls; Instrumentation | 8 |
| 08 | CADD Technician | 193 | 16 | C15 | Construction Management | 10 |
| 12 | Civil Engineer | 409 | 14 | C18 | Cost Estimating; Cost Engineering | 6 |
| 15 | Construction Inspector | 302 | 21 | E03 | Electrical Studies and Design | 8 |
| 16 | Construction Manager | 231 | 6 | E09 | Environmental Impact Studies | 8 |
| 18 | Cost Estimator | 65 | 5 | E12 | Environmental Remediation | 10 |
| 21 | Electrical Engineer | 158 | 19 | E13 | Environmental Testing and Analysis | 8 |
| 23 | Environmental Engineer | 556 | 45 | H07 | Highways; Streets; Airfield Paving; Parking Lots | 9 |
| 24 | Environmental Scientist | 166 | 13 | P06 | Planning (Site, Installation, and Project) | 9 |
| 29 | Geographic Information System Specialist | 113 | 19 | P07 | Plumbing & Piping Design | 9 |
| 30 | Geologist | 195 | 10 | R06 | Rehabilitation (Buildings; Structures; Facilities) | 10 |
| 27 | Geotechnical Engineer | 114 | 11 | R11 | Rivers; Canals; Waterways; Flood Control | 7 |
| 32 | Hydraulic Engineer | 101 | 14 | S04 | Sewage Collection, Treatment and Disposal | 10 |
| 34 | Hydrologist | 98 | 21 | S05 | Soils & Geologic Studies; Foundations | 9 |
| 42 | Mechanical Engineer | 78 | 7 | S07 | Solid Wastes; Incineration; Landfill | 8 |
| 47 | Planner | 211 | 11 | S09 | Structural Design; Special Structures | 8 |
| 52 | Sanitary Engineer | 55 | 4 | S11 | Sustainable Design | 8 |
| 57 | Structural Engineer | 153 | 15 | S13 | Storm Water Handling & Facilities | 9 |
| 58 | Technician | 253 | 58 | T03 | Traffic & Transportation Engineering | 8 |
| 60 | Transportation Engineer | 174 | 4 | U04 | Utility Design/Coordination/Inspection | 9 |
| | Other | 557 | 159 | W02 | Water Resources; Hydrology; Groundwater | 10 |
| | TOTAL | 5,163 | 477 | W03 | Water Supply; Treatment and Distribution | 10 |

| 11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right) | | PROFESSIONAL SERVICES REVENUE INDEX NUMBER | |
|---|---|---|---|
| a. FEDERAL WORK | 10 | 1. Less than $100,000<br>2. $100,000 to less than $250,000<br>3. $250,000 to less than $500,000<br>4. $500,000 to less than $1 million<br>5. $1 million to less than $2 million | 6. $2 million to less than $5 million<br>7. $5 million to less than $10 million<br>8. $10 million to less than $25 million<br>9. $25 million to less than $50 million<br>10. $50 million or greater |
| b. NON-FEDERAL WORK | 10 | | |
| c. TOTAL WORK | 10 | | |

| 12. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts. | | |
|---|---|---|
| a. SIGNATURE | b. DATE | c. NAME AND TITLE |
| | October 22, 2020 | David L. Collins, PE, BCEE; Vice President |

# ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*
RFQ # 12401-116

## PART II - GENERAL QUALIFICATIONS

*(If a firm has branch offices, complete for each specific branch office seeking work.)*

2a. FIRM (OR BRANCH OFFICE) NAME
Nutting Engineers of Florida, Inc.

3. YEAR ESTABLISHED
1967

4. DUNS NUMBER

2b. STREET
1310 Neptune Drive

2c. CITY
Boynton Beach

2d. STATE
Florida

2e. ZIP
33426

6a. POINT OF CONTACT NAME AND TITLE
Richard Wohlfarth, P.E., Principal/Director of Engineering

6b. TELEPHONE NUMBER
561-736-4900

6c. E-MAIL ADDRESS
rickw@nefmail.com

**5. OWNERSHIP**

a. TYPE
Corporation

b. SMALL BUSINESS STATUS
PBC & SFWMD SBE

7. NAME OF FIRM *(If block 2a is a branch office)*

| 8a. FORMER FIRM NAME(S) *(If any)* | 8b. YR. ESTABLISHED | 8c. DUNS NUMBER |
|---|---|---|
| HC Nutting | 1932 | |
| Nutting Engineers, Inc. | 1956 | |

**9. EMPLOYEES BY DISCIPLINE**

| a. Function Code | b. Discipline | c. No. of Employees (1) FIRM | c. No. of Employees (2) BRANCH |
|---|---|---|---|
| 27 | Foundation/Geotech. Eng | 5 | 4 |
| 48 | Project Manager | 3 | 1 |
| 08 | CADD Technician | 1 | |
| 24 | Environmental Scientist | 3 | 1 |
| 58 | Technician/Analyst | 24 | 10 |
| 15 | Construction Inspector | 5 | 2 |
| 51 | Safety/Occupational Health | 1 | |
| 53 | Scheduler | 3 | 2 |
| 02 | Administrative | 7 | 4 |
| | Drillers/ Driller Assistants | 4 | 2 |
| | **Total** | 56 | 26 |

**10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS**

| a. Profile Code | b. Experience | c. Revenue Index Number *(see below)* |
|---|---|---|
| S05 | Soils & Geologic Studies; Foundations | 5 |
| T02 | Testing & Inspection Services | 5 |
| E09 | Environmental Impact Studies, | 5 |

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
*(Insert revenue index number shown at right)*

| | |
|---|---|
| a. Federal Work | 1 |
| b. Non-Federal Work | 6 |
| **c. Total Work** | 6 |

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

**12. AUTHORIZED REPRESENTATIVE**
The foregoing is a statement of facts.

a. SIGNATURE
Richard Wohlfarth

b. DATE
October 10, 2020

c. NAME AND TITLE
Mr. Richard Wohlfarth, PE, BN, Principal/Director of Engineering

# ARCHITECT – ENGINEER QUALIFICATIONS

**1. SOLICITATION NUMBER** (If any): 12401-116

## PART II – GENERAL QUALIFICATIONS

*(If a firm has branch offices, complete for each specific branch office seeking work.)*

| | |
|---|---|
| **2a. FIRM (OR BRANCH OFFICE) NAME** | McCafferty Brinson Consulting, LLC. |
| **3. YEAR ESTABLISHED** | 2006 |
| **4. DUNS NUMBER** | 785805883 |
| **2b. STREET** | 633 S. Andrews Avenue, Suite 402 |
| **5. OWNERSHIP** a. TYPE | LLC |
| **2c. CITY** | Fort Lauderdale |
| **2d. STATE** | Florida |
| **2e. ZIP CODE** | 33301 |
| **b. SMALL BUSINESS STATUS** | |
| **6a. POINT OF CONTACT NAME AND TITLE** | Frank A. Brinson, P.E. Vice President/Principal Engineer |
| **6b. TELEPHONE NUMBER** | 954 797-7100 |
| **6c. E-MAIL ADDRESS** | fbrinson@mccaffertybrinson.com |
| **7. NAME OF FIRM** *(If block 2a is a branch office)* | N/A |
| **8a. FORMER FIRM NAME(S)** *(If any)* | N/A |
| **8b.YR ESTABLISHED** | N/A |
| **8c. DUNS NUMBER** | N/A |

**9. EMPLOYEES BY DISCIPLINE**

| a. Function Code | b. Discipline | c. No. of Employees (1) FIRM | c. No. of Employees (2) BRANCH |
|---|---|---|---|
| 23 | Environmental Engineer | 2 | 2 |
| 24 | Environmental Scientist | 4 | 4 |
| | Total | 4 | 4 |

**10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS**

| a. Profile Code | b. Experience | c. Revenue Index Number (see below) |
|---|---|---|
| C15 | Construction Management | 2 |
| C18 | Cost Estimating | 1 |
| H12 | Hydraulics and Pneumatics | 1 |
| S13 | Stormwater Handling and Facilities | 1 |
| W02 | Water Resources; Hydrology; Ground Water | 1 |
| W03 | Water Supply: Treatment and Distribution | 2 |
| S03 | Sewage Collection, Treatment and Disposal | 2 |

**11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS**
(Insert revenue index number shown at right)

| | |
|---|---|
| a. Federal Work | 0 |
| b. Non-Federal Work | 4 |
| c. Total Work | 4 |

**PROFESSIONAL SERVICES REVENUE INDEX NUMBER**

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

**12. AUTHORIZED REPRESENTATIVE**
**The foregoing is a statement of facts.**

a. SIGNATURE: Frank A. Brinson

b. DATE: October 12, 2020

c. NAME AND TITLE: Frank A. Brinson, P.E. Vice President/Principal Engineer

# ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*: **RFQ 12401-116**

## PART II – GENERAL QUALIFICATIONS

***(If a firm has branch offices, complete for each specific branch office seeking work.)***

| | |
|---|---|
| 2a. FIRM (OR BRANCH OFFICE) NAME | KEITH |
| 3. YEARS ESTABLISHED | 1998 |
| 4. DUNS NUMBER | 618480219 |
| 2b. STREET | 2312 South Andrews Avenue |
| 5. OWNERSHIP a. TYPE | Corporation |
| 2c. CITY | Fort Lauderdale |
| 2d. STATE | FL |
| 2e. ZIP CODE | 33316 |
| b. SMALL BUSINESS STATUS | N/A |
| 6a. POINT OF CONTACT NAME AND TITLE | Alex Lazowick, PE, PMP, President |
| 7. NAME OF FIRM *(if block 2a is a branch office)* | N/A |
| 6b. TELEPHONE NUMBER | 954-788-3400 |
| 6c. E-MAIL ADDRESS | marketing@keithteam.com |
| 8a. FORMER FIRM NAME(S) *(if any)* | Keith and Associates, Inc. |
| 8b. YR. ESTABLISHED | N/A |
| 8c. DUNS NUMBER | N/A |

9. EMPLOYEES BY DISCIPLINE

| a. Function Code | b. Discipline | c. No. of Employees (1) Firm | c. No. of Employees (2) Branch |
|---|---|---|---|
| 02 | Administrative | 20 | 1 |
| 12 | Civil Engineering, PE | 10 | 0 |
| 60 | Transportation Engineering, PE | 3 | 0 |
| 15 | Construction Inspector | 8 | 0 |
| 16 | Construction Manager | 25 | 0 |
| 29 | G.I.S. Specialist | 1 | 0 |
| 38 | Land Surveyor, PSM | 6 | 0 |
| 39 | Landscape Architect, RLA | 5 | 5 |
| 47 | Planner: Urban/Regional | 12 | 12 |
| 48 | Project Manager | 7 | 3 |
| 53 | Scheduler | 5 | 0 |
| | Landscape Designer | 8 | 8 |
| | Project Engineer | 26 | 0 |
| | Project Surveyor | 8 | 0 |
| | Survey Field Crew | 23 | 0 |
| | Subsurface Utility Engineer | 5 | 0 |
| | Subsurface Utility Field Crew | 9 | 0 |
| | Utility Coordinator | 6 | 0 |
| | VDC/BIM/CIM | 1 | 0 |
| | TOTAL | 188 | 29 |

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL REVENUE FOR LAST 5 YEARS

| a. Profile Code | b. Experience | c. Revenue Index Number (see below) |
|---|---|---|
| A06 | Airports; Terminals and Hangars | 0 |
| B02 | Bridges | 0 |
| C07 | Coastal Engineering | 0 |
| C10 | Commercial Building (Low Rise) | 2 |
| C11 | Community Facilities | 3 |
| C15 | Construction Management | 2 |
| C16 | Construction Surveying | 2 |
| E02 | Educational Facilities | 2 |
| F02 | Field Houses; Gyms; Stadiums | 0 |
| G04 | G.I.S. Services; Development, Analysis | 1 |
| H07 | Highways, Street, Airfield Paving | 2 |
| H09 | Hospitals & Medical Facilities | 2 |
| I06 | Irrigation; Drainage | 2 |
| L03 | Landscape Architecture | 3 |
| P05 | Planning (Community, Regional…) | 3 |
| R03 | Railroad; Rapid Transit | 0 |
| R04 | Recreation Facilities (Parks, Marinas, etc.) | 3 |
| S10 | Surveying; Platting; Mapping; Flood Study | 2 |
| S13 | Storm Water Handling & Facilities | 1 |
| T04 | Topographic Surveying & Mapping | 2 |
| W03 | Water Supply; Treatment & Distribution | 2 |
| Z01 | Zoning; Land Use Studies | 2 |

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
*(Insert revenue index number shown at right)*

| | |
|---|---|
| a. Federal Work | N/A |
| b. Non-Federal Work | 4 |
| **c. Total Work** | 4 |

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

**12. AUTHORIZED REPRESENTATIVE**
*The foregoing is a statement of facts.*

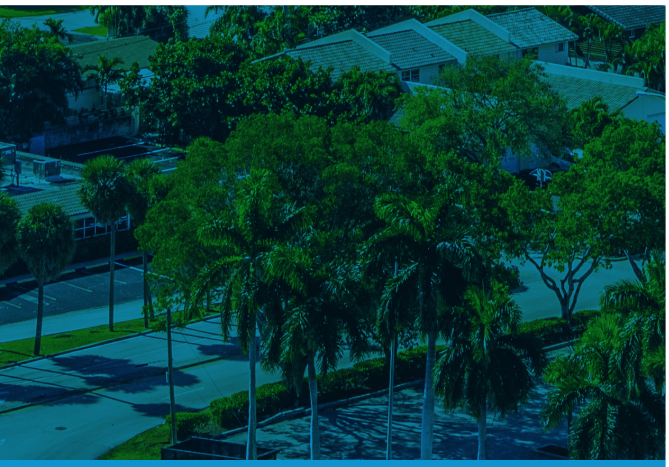
a. SIGNATURE

b. DATE: September 18, 2020

c. NAME AND TITLE: Alex Lazowick, PE, PMP, President

**STANDARD FORM 330**

# SECTION 4



## Qualifications of the Project Team

# Section 4: Qualifications of the Project Team

Our team's commitment to technical excellence, innovation, continual improvement, and environmental and fiscal considerations makes us an ideal partner for the City. Because of our local roots and the fact that we are a local firm that lives and works in the community, we have a vested interest in our collective success and a strong desire to exceed your expectations at every turn.

## Team and Project Management Structure

CDM Smith will lead a local team that has a proven track record of success in working with municipalities like Fort Lauderdale in Florida and across the country. We will partner with the City's management to form a single team with a single shared mission: successfully managing the construction of the oxygen system replacement for the GT Lohmeyer WWTP. This type of partnership starts with the right people. We will provide the City with a core project management team, as well as any specialists that will be needed during the contract for specific technical elements.

Our project management team will build upon the trusted partnership we have already established with the City by taking initiative, by being responsive and supportive of the City, and by being there when you need us. This relationship will be strengthened by the addition of technical experts to our team who are committed to providing the very best strategies, direction, lessons learned, and technical insights from other CEI projects and continuing contracts held around the state and the US. Based on our other CEI consulting and engineer of record contracts, we understand the specific best practices needed for the City's projects. With the depth and breadth of our local, statewide, and national experience, our team knows how to deliver professional consulting services to Fort Lauderdale.

## Established Relationships with Our Subconsultant Partners

As the lead firm, CDM Smith will be responsible for project management and the overall technical direction of the project. Our subconsultant team members include discipline experts who have a proven working relationship with the City and CDM Smith, information on each subconsulant is located in **Section 8: Subconsultants**.

- **Nutting Engineers of Florida, Inc.:** Geotechnical
- **McCafferty Brinson Consulting, LLC:** Inspection
- **Keith and Associates, Inc.:** Survey

## Local and Responsive Team with Unwavering Commitment to the City

The CDM Smith team provides the City with the same project manager and many of the same task leads and staff who have successfully delivered projects for Fort Lauderdale for the past 19 years. As such, our team's familiarity with your wastewater treatment and disposal systems will result in no learning curve.

## Organizational Chart

The CDM Smith project team is a results-oriented team that is structured with clear lines of leadership, accountability, and authority as shown in the organizational chart on the following page. The core management team is led by project manager **Timothy J. O'Neil, PE, CCM, BCEE.** The projects will be completed under his direction and overall responsibility. As he has done for 65 projects over the 19 years, he will ensure that the team makes the most effective use of the vast network of resources available to them to complete this project on time and within the City's budget.

City of Fort Lauderdale

**PRINCIPAL-IN-CHARGE**

**Ignacio L. Lizama, PE, ENV SP**

**PROJECT MANAGER**

**Timothy J. O'Neil, PE, CCM, BCEE**

**TECHNICAL REVIEW COMMITTEE**

Tommy Floyd, DBIA – *Quality Control, Quality Assurance*
**Vipin Pangasa, PE, PMP, BCEE** – *HPOAS*
Frank A. Brinson, PE

**GENERAL**

Joseph J. Sabo – *Health and Safety, COVID-19 Protocol, Training, Risk Management Plan Review*
**Alan J. Saikkonen, PE, BCEE** – *VPSA and Cryogenic Oxygen Expert*
**John S. Chandler** – *Constructibility Lead*

**PRE-CONSTRUCTION PHASE**

**Layla L. Llewelyn, PE, PMP** – *Pre-Construction Phase Lead*
Melissa X. Cairo – *Jurisdiction Engagement, Preliminary Budgets*
Stephen M. Solters– *Feasibility of Construction Methods*
Douglas M. Sutter, CCM – *Schedule Review and Analysis*

**CONSTRUCTION PHASE**

**Alexander G. Chinnery** – *Construction Manager*
**David M. Mastran** – *Senior Field Inspection*
Beth E. McArdle – *Administration, Project Files, and Document Control*
Nutting Engineers of Florida, Inc. – *Laboratory, Auger Cast Piles*
Frank A. Brinson, PE – *Inspection*
Keith and Associates, Inc. – *Survey*
Douglas M. Sutter, CCM – *Schedule Review and Analysis*
Craig A. Gadberry, PE – *Project Budget vs Cost Review and Tracking*
Richard K. Newberg Start-up, Testing and Commissioning, City Staff Training

**POST CONSTRUCTION PHASE**

**Yanice I. Mercado, PE, PMP** – *Post-Construction Phase Lead*
Melissa X. Cairo – *Final Documentation and Retention*
Allyson L. Nunes – *CADD City Standards Compliance*

**SUPPORT SERVICES**

**Pooja H. Kalaria, PE** – *Lead Structural*
**Michael T. Alford, AIA, LEED® AP BD+C** – *Lead Architect*
Amanda R. Culp, Assoc. AIA – *Architect*
**Emilio H. Gacharich, PE** – *Lead Electrical*
Adrian Streng – *Lead Programming SCADA*
Jane E. Madden, PE*, BCEE – *WW Process*
Jonathan Z. Goldman, PE, PMP, BCEE – *Hydraulic and Pumps*
Timothy A. Verwey, PE – *Laser Scan, Drone, and 3D*
Stewart J. Magenheimer, PG, PMP – *Soils*
Stephen L. Whiteside, PE – *Auger Cast Piles*
Gordon H. Miller – *Construction Costs*
Michael P. Picard – *Project Delivery Analysis and Recommendations*

**SUBCONSULTANTS**

Nutting Engineers of Florida, Inc. – *Geotechnical*
Keith and Associates, Inc. – *Survey*
McCafferty Brinson Consulting, LLC. – *Inspection*

* PE in State other than Florida
**Key Personnel**

**CDM SMITH WILL PERFORM ALL SERVICES IN-HOUSE WITH A SINGLE POINT OF CONTACT**

### General Phase

ISO 9001 Trained • ISO 14001 Trained • COVID-19 protocols • PPE Safety Gear • State of Florida Certified • Agent of City • Organization • Personnel • Management

### Pre-Construction Phase

Bid Adequacy • Site Office • Parking • Utilities • Feasibility of Construction Methods • Availability of Materials and Labor • Time Requirements for Procurement • Costs of Alternative Designs • Costs of Materials • Preliminary Budgets • Economies • Project Schedule Reasonableness • City's and DBF's Responsibilities • Critical Long-Lead-time Items • Update CEI's Staffing Plan • Adverse Constructability • Adverse Cost • Adverse Schedule • Allocation of Responsibilities for Safety Programs • Surveyor • Special Consultants • Testing Laboratories • Types of Labor • Quantities of Labor • Categories of Labor • Minimize Labor Shortages • Acceptability of Subcontractors • Acceptable Material Suppliers • Special Permits • Fees • Assessments • File Documents • Jurisdiction Engagement

### Construction Phase

Construction Progress Meetings • Pre-construction Meeting • Agendas • Minutes • Key Site Elevations Certified by a Qualified Surveyor • General Construction Inspection Services • Special Building Inspection • Supplementary Design • Expert Witness • Requests for Information • Submittals • Shop Drawings • Samples • Action Items • Tests • Claims • Change Orders • Distribution • Track DBF Schedule • recommend Corrective Action • Advise Costs versus Budget • Satisfactory Performance Guidance • Monitor Construction Costs • Cash Flow Forecasts • Budget Variances • Actual Use of Labor and Materials • Review Progress Payments • Opinions on Accuracy Certifying Amounts Due the DBF • Track Payment through City • Monitor "As-Built" Documents • Determine Performance • Guard Against Defects • Recommend Temporary Project facilities • Monitor DBF Compliance Applicable Laws and Standards • Visitor Log • Notice to Owner Log • Safety Training Log • Risk Management Training Log • ISO 14001 Training Log • DBF Access Control Plan • DBF Risk Management Plan • DBF Medium Voltage (5kV) Power Plan • DBF Startup and Testing Plan • Track Work Progress, Value, Quality and Conformance • Written Progress Reports • Percentages of Completion • Daily Log • Coordinate DBF with Active Water Treatment Facility • Staging • Delivery, Storage, Protection Security City-purchased Materials • Relay City Policy • DBF Adherence to Policies • Opinions on Claims • Construction Change Directives for City Approval • Interpretations • Resolutions • Project Files at the Project Site • Maintain Records in Duplicate Off Site • Review Design Recommendation • Schedule Testing Services • DBF Regulatory Inspections Log • Field Directive • Cure Letter • notice of noncompliance • Rejected Pay Application • Cost Estimates • Change Order Work • Building Permit Log • Certificate of Substantial Completion • Punch Lists • Final Inspection • Certificate of Final Completion • Warranties Log • Maintenance Stocks Log • Control System Commissioning Log • Plant Startups Specialist • Maintenance Manuals Log • Training Log • Permit Closeouts Log

### Post Construction Phase

Project Related Files • Final Files • Project Record Drawings • City CADD Standards • Warranty Inspections • Deficient Items • Warranty Claims • Completion Report on Future Projects • Agendas • Minutes • Logs • Opinions • Correspondence • Reviewed Shop Drawings • Redlined Drawings • Photos • Videos • Approved Items • Warranty Period

## The Same Team You Know and Trust to Deliver Your Long-Term Vision

Our team is comprised of the same core team members who have successfully delivered or are currently providing services under your General Wastewater Consultant Professional Architectural – Engineering Services contracts. As such, our team understands your long-term vision. We have been coordinating with the other ongoing projects at the George T. Lohmeyer Regional Wastewater Treatment Plant and will support continued implementation of these projects. On the following pages we have included the experience of CDM Smith's team members directly relevant to those identified in the scope of services. SF 330 resumes are included at the end of this section for our staff.

## Personnel and Qualifications

We have included brief highlights of our entire proposed staff which includes their name, role, education, experience, licensing, experience highlights, and availability. At the end of this section we have included SF 330 resumes for ourpersonnel.

# CDM Smith Personnel Resumes

### Ignacio L. Lizama, PE, ENV SP | Principal-in-Charge

**Education:** BS – Civil Engineering **Registration:** Professional Engineer – FL
**Certification:** Envision Sustainable Professional **Years Experience:** 27

30% Availability

**Value to Fort Lauderdale**

- Able to commit the firm's resources and to provide technical as well as administrative oversight to projects, he will ensure that the team makes the most effective use of the vast network of resources available to them to complete projects on time and within the City's budget
- Will be responsible for contract negotiation with the City and ensuring the quality and integrity of the work performed by the CDM Smith team

### Timothy J. O'Neil, PE,CCM, BCEE | Project Manager

**Education:** BS – Mechanical Engineering **Registration:** Professional Engineer – FL
**Certification:** Board Certified Environmental Engineer; Certified Construction Manager **Years Experience:** 33

80% Availability

**Value to Fort Lauderdale**

- Project management experience involving all aspects of water and wastewater treatment design, permitting, and construction
- Senior level management who has focused his career in South Florida, granting him long-term understanding of local conditions and regulations with more than $130M of R&R improvements
- Senior project manager for 65 water projects at George T. Lohmeyer Regional Wastewater Treatment Plant, including recent CAR and RR Updates

### Tommy Floyd, DBIA | Technical Review Committee – Quality Control, Quality Assurance

**Education:** AA **Registration:** N/A
**Certification:** Design-Build Professional (DBIA); **Years Experience:** 35

30% Availability

**Value to Fort Lauderdale**

- Over 35 years of experience in construction
- Project management experience includes total direct responsibility for multi-million-dollar construction projects from conceptual stage through completion of projects
- Extensive experience in all phases of construction including multiple contract delivery methods and construction. His experience also entails cost estimation, cost reporting, business development and quality control

## Vipin Pangasa, PE, PMP, BCEE | Technical Review Committee – HPOAS

**Education:** MS – Civil (Environmental) Engineering; MS – Chemistry; BS – Civil Engineering **Registration:** Professional Engineer (FL) **Certification:** Project Management Professional (PMP); Board Certified Environmental Engineer (BCEE) **Years Experience:** 30

80% Availability

### Value to Fort Lauderdale

- Project management experience on major WWTP design and construction projects throughout Florida
- Experience includes wastewater treatment plants, wastewater processes, biosolids processes, pump stations, water and wastewater collection/distribution and transmission systems, hydraulic modeling, odor control, as well as various types of permitting activities
- Project manager for numerous projects utilizing tertiary treatment and beneficial reuse, including design and rehabilitation of high-level disinfection and high-purity oxygen systems

## Joseph Sabo | Health and Safety, COVID-19 Protocol, Training, Risk Management Plan Review

**Certification:** Construction Health and Safety Technician (CHST); OSHA Outreach Trainer; OSHA 30 General Industry/Construction; LPS Instructor; ARC First Aid/CPR Instructor; Explosive Ordnance Disposal (EOD) Chemical Technician, EOD Phase I / Redstone Arsenal; Navy Basic EOD Technician, Naval EOD Technology Center **Years Experience:** 40

30% Availability

### Value to Fort Lauderdale

- Technical advisor with specialized expertise in hazardous remediation work and materials management, explosive ordnance disposal (EOD), safety management, and emergency response
- Regional Health & Safety Manager responsible for ensuring site health and safety compliance and instructs company personnel to meet OSHA standards

## Alan J. Saikkonen, PE, BCEE | VPSA and Cryogenic Oxygen Expert

**Education:** BS – Civil Engineering **Registration:** Professional Engineer – FL, NY **Certification:** Board Certified Environmental Engineer (BCEE) **Years Experience:** 45

80% Availability

### Value to Fort Lauderdale

- Task leader for evaluations, alternatives analyses, and concept level design for MDWASD CDWWTP oxygen generation system
- Technical insight and reviews of high Purity Oxygen Activated sludge system for Lancaster 25-mgd WWTP
- Lead process design engineer for groundbreaking 370-mgd Blue Plains THP AWWTP for DC Water—the first of its kind in America

## John S. Chandler | Constructibility Lead

**Education:** BA – Mathematics **Years Experience:** 38

80% Availability

### Value to Fort Lauderdale

- Experience providing project management, bid preparation, construction management, and engineering and design services related to a variety of Florida projects including water and wastewater plants; water, sewer and storm pipeline projects; and engineering and marine construction projects
- Responsibilities have included constructibility reviews, budgeting and scheduling, permitting, report preparation, construction layout, and bid preparation
- 31 projects for the City of Fort Lauderdale since 2002 including the recent PCCP Sequence B & C at the George T. Lohmeyer Regional WWTP

## Layla L. Llewelyn, PE, PMP | Pre-Construction Phase Lead

**Education:** MS – Environmental Engineering; BS – Civil Engineering **Registration:** Professional Engineer – FL **Certification:** Project Management Professional (PMP) **Years Experience:** 20

80% Availability

### Value to Fort Lauderdale

- Experience in the planning, analysis, design, permitting, and construction management of wastewater and water treatment, collection and conveyance systems, including process improvements and process design, hydraulics, and pumping systems
- Technical reviewer for the hydraulic evaluations at current design flows to confirm pipe diameters needed to gravity flow from the pretreatment building to both reactors and from both reactors to clarifier battery 3 for the Replacement of Large Diameter Process Pipe Preliminary Design at George T. Lohmeyer RWWTP

## Melissa X. Cairo | Jurisdiction Engagement, Preliminary Budgets; Final Documentation and Retention

**Education:** BS – Environmental Engineering **Years Experience:** 5

50% Availability

### Value to Fort Lauderdale

- Environmental engineer with focused experience on water/wastewater treatment/pumping projects in South Florida
- Project engineer for the most recent annual renewal and replacement report for the George T. Lohmeyer WWTP
- Experienced in successfully obtaining permits for WTP/WWTP projects including preparing drawings and specifications for permit submittal and coordinating with County health departments

## Stephen M. Solters | Pre-Construction Phase – Feasibility of Construction Methods

**Education:** Coursework, Business Administration and Life Sciences; Coursework, Allegheny County Community College; NYU School of Real Estate and Construction Technology **Years Experience:** 44

40% Availability

### Value to Fort Lauderdale

- Construction project manager offering experience in the construction and engineering industry
- Extensive experience in managing direct performance projects, including subcontract administration, permitting, purchasing, estimating, cost control, scheduling, operations coordination, and startup assistance
- Has delivered projects totaling more than $400 M in construction costs

## Douglas M. Sutter, CCM | Pre-Construction/Construction Phase – Schedule Review and Analysis

**Education:** MS – Construction Management; BS – Architectural Design **Certification:** Certified Construction Manager (CCM), CMAA; Six-Sigma; 10-Hour OSHA Safety **Years Experience:** 24

40% Availability

### Value to Fort Lauderdale

- Construction management professional with leadership experience and a solid project controls background with a high-level of business acumen, construction knowledge, multi-project delivery experience, and commercial understanding on the full project life cycle
- Experience with project controls platforms and the tools of program and construction management, planning of projects and their schedules with a strategic approach and measuring project success
- Experience in private, governmental, and military projects for water and wastewater, as well as large diameter pipelines, tunnels, levees, and reservoirs with typical project construction values up to $5B

## Alexander G. Chinnery | Construction Phase – Construction Manager

**Education:** BS – Civil Engineering **Years Experience:** 25

80% Availability

### Value to Fort Lauderdale

- Extensive water and wastewater pump station design experience throughout South Florida focused on equipment location, pump station layout, permitting, and drafting and design of civil and mechanical plans
- Responsibilities include confirming contractor follows the specifications and buildings codes, adheres to local regulations and permits, and remains on schedule
- Project engineer for the design for the replacement of medium voltage electrical equipment at the GTL wastewater treatment plan, he also worked on the specification review.

## David M. Mastran | Construction Phase – Senior Field Inspection

**Years Experience:** 50

80% Availability

### Value to Fort Lauderdale

- Over 50 years of experience in program and construction management, contract coordination and administration, quality control, claims research and analysis, and field inspection
- Recent focus has been on program and construction management, from oversight of construction documents and field construction through inspection for new projects and renovations

## Beth E. McArdle | Construction Phase – Administration, Project Files, and Document Control

**Education:** BA – Sociology **Years Experience:** 33

80% Availability

### Value to Fort Lauderdale

- Provides administrative support to senior executives and project support for engineering and marketing staff within CDM Smith's Southeast region of the US
- Served as construction project administrator for Solid Waste Authority of Palm Beach County's Mass Burn Waste-to-Energy (WTE) Facility project

## Craig A. Gadberry, PE | Construction Phase – Project Budget vs Cost Review and Tracking

**Education:** BS – Civil Engineering **Registration:** Professional Engineer – FL **Certification:** OSHA 10-hour Occupational Safety and Health Training Certification; Primavera Planning and Scheduling **Years Experience:** 27

30% Availability

### Value to Fort Lauderdale

- CDM Smith's leading authority on estimation in the Southeast US, he oversees the performance of many of the firm's most vital projects
- Able to draw upon the firm's estimation staff in the Southeast to provide clients with the resources needed to accurately and speedily execute many different types of procurement
- Highly experienced in alternate delivery methods, including design-build and construction manager-at-risk (CMAR)

## **Richard K. Newberg**| Construction Phase – Start-up, Testing and Commissioning, City Staff Training

**Education:** BS – Business Science; AA – Computer Science **Years Experience:** 41

30% Availability

### Value to Fort Lauderdale

- More than 41 years of environmental, utility management, operations and maintenance (O&M), business, asset management, laboratory development, construction experience with 18 years of global experience as a project manager
- Certified O&M operator with expertise in the start-up and troubleshooting of WTP and WWTPs, including 100+ Florida projects.
- Trainer for EPA's asset management program "Check Up Program for Small Systems (CUPSS)

## **Yanice I. Mercado, PE, PMP** | Post Construction Phase Lead

**Education:** ME – Environmental Engineering; BS – Chemical Engineering **Registration:** Professional Engineer – FL, PR **Certification:** Project Management Professional (PMP) **Years Experience:** 19

40% Availability

### Value to Fort Lauderdale

- Extensive experience in capital improvement projects, change management, technology integration, and infrastructure
- Managed CIP projects in various stages of planning, design, and procurement ranging from $200,000 to $7.3M
- Project manager for City of West Palm Beach Lift Stations Improvements project as well as the $16M 48-inch prestressed concrete cylinder pipe (PCCP) Force Main Renewal Project

## **Allyson L. Nunes** | Post Construction Phase – CADD City Standards Compliance

**Education:** AS – Civil Engineering Technology; Society of Industrial Artists and Designers (SIAD) Degree **Certification:** Basic Drafting; AutoCAD 12 to 14 Upgrade **Years Experience:** 38

40% Availability

### Value to Fort Lauderdale

- Extensive knowledge of manual drafting, AutoCAD, Corel DRAW, and PowerPoint
- As advanced designer, she often supervises and trains other drafters and troubleshoots potential drafting pitfalls; this knowledge of industry standards is invaluable as she develops presentations and graphics

## **Pooja H. Kalaria, PE** | Support Services – Lead Structural

**Education:** MS – Civil Engineering; BS – Civil Engineering **Registration:** Professional Engineer – FL
**Certification:** Confined Space Entry **Years Experience:** 10

30% Availability

### Value to Fort Lauderdale

- Structural engineer experienced with water and wastewater treatment plant design, as well as facilities building structures including the design of reinforced concrete, masonry, steel, aluminum, and structural inspections
- Specializes in computer applications of both structural engineering design and engineering analyses in STAAD and Ram Elements structural design programs, and has extensive experience in creating and modifying 2D and 3D AutoCAD models for a variety of project structures

## Michael T. Alford, AIA, LEED® AP BD+C | Support Services – Lead Architect

**Education:** MA – Architecture; BS – Architectural Studies **Registration:** Registered Architect (FL, SC, NC, GA, TN, AL, KY, VA, WA,LA) **Certification:** Leadership in Energy and Environmental Design Accredited Professional – Building Design & Construction (LEED® AP BD+C) **Years Experience:** 22

30% Availability

### Value to Fort Lauderdale

- Architectural and life safety experience applying building and fire codes to wastewater buildings and structures
- Registered architect and LEED® Accredited Professional with experience in programming, schematic design, design development, construction documents, construction administration, and code compliance research
- Relevant experience includes the preparation of planning and feasibility studies, property condition assessment surveys, and ADA evaluations

## Amanda R. Culp, Assoc. AIA | Support Services – Architect

**Education:** MA – Architecture; BA – Design: Focus in Architecture **Registration:** Architectural Intern **Years Experience:** 5

50% Availability

### Value to Fort Lauderdale

- Architectural and life safety experience applying building and fire codes to wastewater buildings and structures
- Experience includes design development, construction documents, construction administration, and the use of Building Information Modeling (BIM)

## Emilio H. Gacharich, PE | Support Services – Lead Electrical

**Education:** MA – Environmental Studies and Analysis; BA – Environmental Sciences **Registration:** Professional Engineer (FL, AL, KY) **Years Experience:** 24

50% Availability

### Value to Fort Lauderdale

- Two decades of experience in power distribution design and construction services for environmental facilities such as WWTPs and WRFs throughout the Southeast and in Florida
- Provides all aspects of power distribution design, including medium and low voltage distribution design, short circuit, coordination and arc flash studies, lighting design, and motor control systems design, from preliminary design through final design
- South Florida design experience for the Cities of Boca Raton, Deerfield Beach, Dania Beach, Pompano Beach, as well as Broward, Palm Beach, and Miami-Dade Counties, and is familiar with local codes and regulations

## Adrian Streng | Support Services – Lead Programming SCADA

**Education:** BS – Electrical Engineering Technology **Certifications:** Allen Bradley Panel View and Panel Builder32 Application Software; Allen Bradley FactoryTalk View SE Programming; Allen Bradley FactoryTalk RSLogix5000 Project Develop Programming; Siemens Simatic S7 Advanced Programming and Maintenance; Siemens Simatic WinCC SCADA Programming **Years Experience:** 25

50% Availability

### Value to Fort Lauderdale

- Over 20 years' experience in controls engineering, with more than 8 years directly related to water/wastewater treatment, instrumentation and control (I&C), SCADA, network and control panel design, programmable logic controller (PLC) and human-machine interface (HMI) programming, and project management
- Experience includes communication systems using radio communication, cellular modems and fiber optic cable. Protocol experience includes Ethernet, Modbus TCP/IP, Modbus RTU, DeviceNet, ControlNet, DF1, and Profibus, all over various media.

## Jane E. Madden, PE, BCEE | Support Services – WW Process

**Education:** BS – Civil Engineering **Registration:** Professional Engineer – MA
**Certification:** Board Certified Environmental Engineer (BCEE) **Years Experience:** 36

30% Availability

### Value to Fort Lauderdale

- Nationally recognized authority in the field of wastewater process design, with a 36-year career characterized by work on 100 wastewater projects, and over $1B in constructed costs
- One of CDM Smith's top liquid process design specialists whose experience includes the 450-mgd MWRA Deer Island WWTP
- Has completed studies, facility planning and design, process evaluation, hydraulic analysis, treatment plant design, construction management, startup, and operation for WWTPs ranging in size from 1 to 1,700 mgd

## Jonathan Z. Goldman, PE, PMP, BCEE | Support Services – Hydraulic and Pumps

**Education:** ME – Environmental Engineering; BS – Environmental Engineering
**Registration:** Professional Engineer – FL **Certification:** Project Management Professional (PMP); Board Certified Environmental Engineer (BCEE)
**Years Experience:** 33

30% Availability

### Value to Fort Lauderdale

- South Florida experience concentrated in the areas of water and wastewater, stormwater management and treatment system design, and hydraulic modeling of large pumping and transmission systems
- Experienced in the areas of infrastructure asset risk prioritization, evaluation, and rehabilitation, sanitary sewer evaluation studies, engineering construction, water resources, and odor control

## Timothy A. Verwey, PE | Support Services – Laser Scan, Drone, and 3D

**Education:** BS – Civil Engineering **Registration:** Professional Engineer (FL, GA, KY, MS, NC, TN, TX, VA) **Certification:** Confined Space Entry **Years Experience:** 33

30% Availability

### Value to Fort Lauderdale

- Experience in developing design criteria, project specifications, provided analyses, prepared and reviewed contract documents, performed structural condition surveys and evaluations, carried out value engineering studies, provided peer reviews, and performed engineering services during construction for water, wastewater, and hazardous waste facilities
- Specializes in computer applications of both structural engineering design and engineering analyses, including finite element analysis of plate and shell structures, and 3-dimensional structural analysis

## Stewart J. Magenheimer, PG, PMP | Support Services – Soils

**Education:** MSc – Geology; MBA – Business Administration; BSc – Geology
**Registration:** Professional Geologist – FL **Certification** Project Management Professional (PMP) **Years Experience:** 34

30% Availability

### Value to Fort Lauderdale

- Experience in working with local (Southeast Florida), state, and federal regulators and regulations on environmental and construction issues
- Has served as lead hydrogeologist for more than 100 mgd capacity of screened and rock well design and construction in the karst Biscayne aquifer and surficial aquifer system (depths to 200 feet) and karst Floridan aquifer (depths to 1,400 feet)
- Highly familiar with and knowledgeable of Southeast Florida hydrogeological conditions, having worked with the Cities of Boca Raton, Coral Springs, and Deerfield Beach, as well as Miami-Dade and Palm Beach Counties

## **Stephen L. Whiteside, PE** | Support Services – Auger Cast Piles

**Education:** Engineer Degree – Geotechnical Engineering; MS – Geotechnical Engineering; BS – Civil Engineering **Registration:** Professional Engineer (MA, NC, SC, VA, GA, FL, AL, TN, KY, LA, AR) **Years Experience:** 44

30% Availability

### Value to Fort Lauderdale

- Senior geotechnical and civil engineer with 44 years of Florida, national, and global experience
- Has managed large complex projects with a total value of over $120M for services including intake, pipeline and pump station engineering and geotechnical design for water infrastructure projects
- Has supported the planning, design, permitting, and delivery of 10 major intake structures for water facilities in the southeast and has worked with every member of the project team

## **Gordon H. Miller** | Support Services – Construction Costs

**Education:** BS – Civil Engineering **Years Experience:** 30

40% Availability

### Value to Fort Lauderdale

- Senior estimator with more than 30 years of experience in water and wastewater treatment plant (WTP and WWTP) construction, project management, operations management, environmental remediation and business development
- Highly experienced in alternate delivery methods including design-build and construction manager-at-risk (CMAR)
- Routinely oversees the performance of design-build projects proposals, acquisition proformas, estimates of operational costs and Engineer's Opinion of Probable Construction Cost (OPCC) estimates

## **Michael P. Picard** | Support Services – Project Delivery Analysis and Recommendations

**Education:** BS – Civil Engineering **Registration:** Licensed Environmental Professional (CT) **Certification** OSHA Hazardous Waste Training; OSHA Supervisor Training; OSHA Confined Space Training **Years Experience:** 30

40% Availability

### Value to Fort Lauderdale

- Has more than 30 years of experience in the design and construction of drinking water, wastewater, industrial and hazardous waste remediation systems
- Specializes in the management of alternative delivery projects and has led a variety of design-build and design/construction management-at-risk projects

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Ignacio L. Lizama, PE, ENV SP** | Principal-in-Charge | a. TOTAL | 27 | b. WITH CURRENT FIRM | 14 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Coral Gables, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Civil Engineering | Professional Engineer (FL) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Envision Sustainable Professional, Institute for Sustainable Infrastructure; Member, American Water Works Association; Member, Water Environment Federation; Member, Florida Engineering Society; Member, American Public Works Association; Member, National Society of Professional Engineers

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Central District Wastewater Treatment Plant Oxygen Production, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2015 | 2015 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Ofifcer-in-Charge.** Mr. Lizama is serving as officer-in-charge for the evaluation of the oxygen delivery needs, alternatives for addressing the oxygen delivery system deficiencies, and construction of a new oxygen production system. The oxygen production facility is part of the activated sludge process at the CDWWTP. Oxygen for the oxygenation trains is generated on-site by three 70-tpd cryogenic oxygen production units. Tasks included the evaluation of the oxygen delivery needs for the CDWWTP, including identifying different alternatives for addressing the oxygen delivery system deficiencies, identifying alternative oxygen generation technologies, preparing a Basis of Design Report, Design Criteria Package Specification for Design-Build Procurement, and assistance during procurement.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Alternative Route Analysis and Preparation of Design-Build Criteria for the Installation of a 48-inch Diameter Water Main for "Area N', Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2017 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Officer-in-Charge.** Mr. Lizama served as officer-in-charge for this improvement project. This project traversed local ROW, Florida Department of Transportation (FDOT) ROW, CSX, and Florida East Coast (FEC) railroad ROW, canal crossings under the jurisdiction of the South Florida Water Management District (SFWMD). The following agencies had jurisdiction over this project: SFWMD, US Army Corps of Engineers (USACE), FDOT, Miami-Dade Public Works and Waste Management Department, Division of Environmental Resources Management, MDWASD, Fire Rescue, Florida Department of Environmental Protection (FDEP), Florida Department of Health, FEC Railway, CSX, and Miami-Dade Expressway Authority (MDX). The Department requested CDM Smith to provide professional services for the development of a design-build criteria package and contract procurement documents for the proposed 48-inch diameter transmission main based on the recommended route, including permitting services, procurement support services, and limited services during the design-build contract phase.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **North District Miami Dade Primary Clarifiers, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2018 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Officer-in-Charge.** Mr. Lizama is serving as officer in charge. The NDWWTP's existing primary clarification facilities consist of six 160-foot diameter circular Primary Clarifier Nos. 1 through 6 with domed covers; two Primary Sludge Pump Station (PSPS) Nos. 1 and 2; six odor control chemical scrubbers, one for each clarifier, and two effluent trough chemical scrubbers, housed in PSPS Nos. 1 and 2; primary scum management systems, including a mechanical bar screen and common scum wetwell adjacent to the west of Primary Clarifier No. 4; primary clarifier influent reinforced concrete pipe (RCP) running from the Pretreatment and Sludge Transfer Building to the Primary Clarifiers, and effluent RCP running from the Primary Clarifiers to the Oxygenation Tank Control Chambers; Oxygenation Tank Control Chambers which distribute flow to the downstream oxygenation trains. This project will replace primary clarifier mechanisms that have become unreliable and/or have exceeded their service life.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Timothy J. O'Neil, PE, CCM, BCEE** | Project Manager | a. TOTAL | 33 | b. WITH CURRENT FIRM | 23 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Boca Raton, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Mechanical Engineering | Professional Engineer (FL) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Certified Construction Manager; Board Certified Environmental Engineer; American Society of Mechanical Engineers; Florida Water Environmental Association

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Master Pump Station 450, Broward County, FL** | 2019 | 2019 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Manager/Engineer-of-Record.** Mr. O'Neil was responsible for the development and execution of several regional master wastewater pump station designs, including MPS 450. CDM Smith performed hydraulic calculations of the system, developed the operational envelopes for the pump systems, applied hydraulic institute standards for suction and discharge piping, surge analysis, designed the temporary station bypass systems, and developed the new control telemetry, flow metering. Mr. O'Neil was the engineer-of-record for the pumps and piping systems. The design included by-pass pumping of the entre flow during construction. The design included converting from a wet well into an inline station. The design team in replaced pumps, valves, flow meter, standby power generator, above ground bulk fuel tank, electrical, and controls to meet conditions as stated in our basis of design report.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Master Pump Station 456, Broward County, FL** | 2019 | 2019 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Manager/Engineer-of-Record.** Mr. O'Neil was responsible for the development and execution of several regional master wastewater pump station designs, including MPS 456. CDM Smith performed hydraulic calculations of the system, developed the operational envelopes for the pump systems, applied hydraulic institute standards for suction and discharge piping, surge analysis, designed the temporary station bypass systems, and developed the new control telemetry, flow metering. Mr. O'Neil was the engineer-of-record for the pumps and piping systems. The design included by-pass pumping of the entre flow during construction. The design included converting from a wet well into an inline station. The design team in replaced pumps, valves, flow meter, standby power generator, above ground bulk fuel tank, electrical and controls to meet conditions as stated in our basis of design report.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Replacement of Large Diameter Process Pipe Sequence A Services During Construction, GTL WWTP, City of Fort Lauderdale, FL** | 2018 | 2018 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Project Manager.** Mr. O'Neil guided and managed week-to-week activities of the team to address several large diameter process pipe failures at the GTL WWTP. The design team performed hydraulic evaluations at current design flows to confirm pipe diameters needed to gravity flow from the pretreatment building to both reactors and from both reactors to clarifier battery 3. The construction team determined how long a process pipe component can be taken offline, determined best replacement techniques, identified strategic flow by-passing with temporary jumper pipes, provided budget costs and provided a replacement schedule. The preliminary design identified the phased replacement of large diameter process pipe with ductile iron pipe beginning with approximately 2,460 linear feet of critical-duty prestressed concrete cylinder pipe consisting of 660 feet of 66-inch pipe; 180 feet of 54-inch pipe; 780 feet of 48-inch pipe, and 840 feet of 42-inch pipe.

d.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **GTL WWTP High Purity Oxygen Rehabilitation Design and Services During Construction, City of Fort Lauderdale, FL** | 2010 | 2010 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Project Manager.** Mr. O'Neil's design and/or selection of process equipment involved process equipment for each of the following areas: High Purity Oxygen Instrumentation Upgrade; High Purity Oxygen Storage Tanks Replacement; High Purity Oxygen main air compressors replacement, High Purity Oxygen electrical power substation components replacement.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Tommy Floyd, DBIA** | Technical Review Committee – Quality Control, Quality Assurance | a. TOTAL | 35 | b. WITH CURRENT FIRM | 4 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Charlotte, NC |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| AA | N/A |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| Design Build Professional |

### 19. RELEVANT PROJECTS

**a.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Design-Build Blue Plains Advanced Wastewater Treatment Plant (WWTP) Tunnel Dewatering Pump Station (TDPS) and Enhanced Clarification Facility (ECF), Washington, DC** | 2016 | 2017 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Project Manager.** This $215M project was one of the largest design-build treatment plant projects on the US East Coast. CDM Smith, as an equal joint venture partner with PC Construction, was selected by DC Water to provide design-build services to implement the TDPS/ECF project, which involves a 500 mgd capacity coarse screening and surge facility, a 250 mgd capacity TDPS (expandable to 500 mgd) and a 250 mgd capacity ECF (expandable to 500 mgd) consisting of fine screening, vortex grit removal, ballasted high rate clarification (ACTIFLO process), chlorination, and dechlorination facilities. Mr. Floyd served as the Senior CDM Smith representative for the project, requiring daily interaction with the client (DC Water), Construction Manager (Arcadis), and Program Manager (AECOM). In addition to site supervision and senior management responsibilities for the PC/CDM Joint Venture (including total responsibility for all CCI employees on site), his direct duties include change management preparation (notifications, pricing, and change negotiations), purchasing (reviewing and signing purchase orders and subcontracts prepared by staff), and facilitating overall performance of the project. He was appointed as the JV Liaison with project quality control and serves as the JV representative for all quality-related issues.

**b.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Fourth Creek WWTP Solids Handling Improvements Upgrade, Statesville, NC** | 2016 | 2016 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☐ PERFORMED WITH CDM SMITH

**Project Manager.** The $4.1M 6-mgd Fourth Creek WWTP solids improvements project included removal and replacement of two platform aerator replacements; Clarifier #1 equipment; lime sludge stabilization process (including hoppers, belt conveyors, screw conveyors, lime silos, and pugmill); VFDs for influent and WAS pumps; flow meters; motor control centers; electrical controls and SCADA system. Served as primary management lead with total project authority on assigned projects, including: negotiating contracts and contract changes with engineers and owners; negotiating, writing and executing purchase orders and contracts with vendors and subcontractors; developing and updated CPM schedule; and total accountability for project schedule and financial performance.

**c.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **PO Hoffer WTP Improvements, Fayetteville, NC** | 2016 | 2016 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☐ PERFORMED WITH CDM SMITH

**Project Manager.** The $15M project included reliability improvements to the PO Hoffer WTP, which supplies 32 MG of drinking water a day. The water processed at the WTP comes from the Cape Fear River. Improvements were made to the existing facility to quantify and control water flow and conditions. Major upgrade to existing WTP, including filter rehabilitation, sedimentation basin rehabilitation, new flash mix structure, flocculation basin rehabilitation, upgrade chemical feed, and upgrade and replace primary electrical service. His primary management lead with total project authority on assigned projects, including: negotiating contracts and contract changes with engineers and owners; negotiating purchase orders and contracts with vendors and subcontractors; developing and updated CPM schedule; and accountability for project schedule and financial performance.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Vipin Pangasa, PE, PMP, BCEE** | Technical Review Committee – HPOAS | a. TOTAL | 30 | b. WITH CURRENT FIRM | 26 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Tampa, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| MS – Civil Engineering; MS – Chemistry; BE – Civil Engineering | Professional Engineer (FL) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Board Certified Environmental Engineer (BCEE), American Academy of Environmental Engineers and Scientists; Certified Project Management Professional (PMP); Member, Florida Water Environment Association/Water Environment Federation

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **North District Miami Dade Secondary Clarifiers, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2016 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Design Manager.** CDM Smith is currently involved in providing design services on a number of consent decree projects. Mr. Pangasa is leading the design effort of CDM Smith project team as well as five additional local business enterprises on this high profile and program driven project at the 95 mgd (ADF) NDWWTP located in North Miami. The project includes rehabilitation, improvement or replacement design related to secondary clarifier distribution chambers, secondary clarifiers, effluent pipes (from 30" to 104"), RAS piping, RAS pump stations, effluent junction box, etc. An additional evaluation and design effort is related to separation of spent backwash from the sanitary sewer to stop surcharging of sewers. The design team is providing civil, process mechanical, structural, architectural, electrical, HVAC, and I&C engineering services as well as permitting assistance. The total design phase fees for this project are over $2.0 million and the construction cost is estimated to be over $20 MM.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **George T. Lohmeyer Regional WWTP (GTLRWWTP) Renewal and Replacement (R&R) Program, R&R Capital Improvement Program (CIP) Projects, City of Fort Lauderdale, FL** | Ongoing | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Task Order Design Lead.** The City of Fort Lauderdale's 56.6-mgd George T. Lohmeyer WWTP currently utilizes high-purity oxygen in its biological processes. Mr. Pangasa is serving as a design lead on three separate task orders as part of an ongoing R&R program. Projects have included renewal of the operating permit, update of the Capacity Analysis Report (CAR), and update of the R&R report. As part of these projects, Mr. Pangasa has evaluated all elements (equipment and structure) of the plant with reference to current condition (and need for rehabilitation).

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **North District WWTP (NDWWTP) Improvements, Miami-Dade Water and Sewer Department (WASD), Miami-Dade County, FL** | 2016 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Design Manager.** Mr. Pangasa is leading for this project involving rehabilitation, improvement, or replacement design related to secondary clarifier distribution chambers, secondary clarifiers, effluent pipes (from 30" to 104"), RAS piping, RAS pump stations, effluent junction box, etc. The design team is providing civil, process mechanical, structural, architectural, electrical, HVAC, and I&C engineering services as well as permitting assistance. The total design phase fees for this project are over $2M and the construction cost is estimated to be over $20M.

d.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Shady Hills Wastewater Treatment Plant (WWTP) Evaluation, Pasco County, FL** | 2016 | 2016 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Manager.** For the Shady Hills WWTP, CDM Smith provided an evaluation of the wastewater facilities as well as the Fats, Oils and Grease (FOG) facility for rehabilitation, improvements or replacements that were required on an imminent basis. Mr. Pangasa led the team of process mechanical, hydraulics, HVAC, structural, electrical and I&C engineers for this evaluation. As a result of this evaluation, Pasco County authorized CDM Smith to provide design, bid, and construction phase services for this plant which is anticipated to serve as their regional facility in the west region in the future.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Joseph J. Sabo** | General – Health and Safety Protocol, Training, Risk Management Plan Review | a. TOTAL | 40 | b. WITH CURRENT FIRM | 19 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Jacksonville, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| Coursework: Currently in an OSH degree program with CSU | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Construction Health and Safety Technician (CHST)

### 19. RELEVANT PROJECTS

**a.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **North District Miami Dade Primary Clarifiers, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2018 | 2018 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Health and Safety Manager.** The NDWWTP's existing primary clarification facilities consist of six 160-foot diameter circular Primary Clarifier Nos. 1 through 6 with domed covers; two Primary Sludge Pump Station (PSPS) Nos. 1 and 2; six odor control chemical scrubbers, one for each clarifier, and two effluent trough chemical scrubbers, housed in PSPS Nos. 1 and 2; primary scum management systems, including a mechanical bar screen and common scum wetwell adjacent to the west of Primary Clarifier No. 4; primary clarifier influent reinforced concrete pipe (RCP) running from the Pretreatment and Sludge Transfer Building to the Primary Clarifiers, and effluent RCP running from the Primary Clarifiers to the Oxygenation Tank Control Chambers; Oxygenation Tank Control Chambers which distribute flow to the downstream oxygenation trains. This project will replace primary clarifier mechanisms that have become unreliable and/or have exceeded their service life.

**b.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **North District Miami Dade Secondary Clarifiers, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2016 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Health and Safety Manager.** CDM Smith was involved in providing design services on a number of consent decree projects. Mr. Pangasa is leading the design effort of CDM Smith project team as well as five additional local business enterprises on this high profile and program driven project at the 95 mgd (ADF) NDWWTP located in North Miami. The project includes rehabilitation, improvement or replacement design related to secondary clarifier distribution chambers, secondary clarifiers, effluent pipes (from 30" to 104"), RAS piping, RAS pump stations, effluent junction box, etc. An additional evaluation and design effort is related to separation of spent backwash from the sanitary sewer to stop surcharging of sewers. The design team is providing civil, process mechanical, structural, architectural, electrical, HVAC, and I&C engineering services as well as permitting assistance. The total design phase fees for this project are over $2.0 million and the construction cost is estimated to be over $20 MM.

**c.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Annual Renewal and Replacement Report, City of Fort Lauderdale, FL** | 2019 | 2019 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Health and Safety Manager.** The City of Fort Lauderdale's contract with the Large Users of the Central Regional Wastewater System (Regional System) requires CDM Smith to prepare an annual schedule that projects facility renewal and replacement costs over a 20-year span. This analysis estimates the amount of funding to be set aside by the City for anticipated renewal and replacement expenditures for the Central Regional Wastewater System. We were responsible for identifying areas of improvement to regional wastewater facilities through a review of accounting records, system operation and maintenance manuals, and construction contract documents. Estimating the remaining useful life of major equipment and facilities on the basis of age and observed condition. Developing a schedule for anticipated future equipment replacement. Estimating the anticipated equipment replacement expenditures. Determining the balance of the Replacement and Improvement Reserve Account and determining the amount of additional funding needed for the planned renewal and replacement expenditures over the next 20-years. Calculating annual equipment replacement funding requirements for FY 2019-20. Summarizing the results of the analysis in a written report.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Alan J. Saikkonen, PE, BCEE** | Technical Review Committee – VPSA & Cryogenic Oxygen | a. TOTAL | 45 | b. WITH CURRENT FIRM | 13 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Maitland, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Civil Engineering | Professional Engineer (FL, NY) |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| Board Certified Environmental Engineer (BCEE) |

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| a. | **Central District Wastewater Treatment Plant Oxygen Production, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2018 | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Task Leader.** Mr. Saikkonen acted as task leader and lead engineer for condition assessments, evaluations, alternatives development, economic analyses, and concept level designs for the replacement of the WWTP's aging cryogenic oxygen generation system. This planning stage effort focused on detailed life cycle costs and the pros and cons of continuing of operate the 140 TPD cryogenic oxygen generation system, replacing the system in-kind or replacing the system with a newer, more energy efficient system. Subsequently, Mr. Saikkonen acted as design team lead for the design of the project. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| b. | **Blue Plains Advanced Wastewater Treatment Plant, Tunnel Dewatering Pump Station and Enhanced Clarification Facility, Washington, DC** | 2016 | 2017 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Design Team Lead/Lead Process Systems Designer.** Mr. Saikkonen acted as design team leader and lead process systems designer for a major portion of the TPPS.ECF Design-Build project. The project includes a 500-mgd combined sewer overflow pumping station constructed at the end of the new CSO tunnel network being constructed under the City. The treatment process included screening, grit removal, ballasted flocc enhanced clarification, and disinfection. Mr. Saikkonen was responsible for the basis of design report, process equipment selection, preparation of specifications, and preliminary and final design of the enhanced clarification process. The design of the project was done using 3D CADD due to the size and complexity and number of subcontractors involved in the design. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| c. | **Blue Plains Advanced Wastewater Treatment Plant, Main Process Train, Washington, DC** | 2015 | 2015 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Design Team Leader.** Led process mechanical systems design for biosolids screening, centrifuge thickening, cake storage, cake pumping, thermal hydrolysis (CAMBI system), anaerobic digestion, and biogas handling for the 370-mgd WWTP. This project, when completed and integrated into the biogas fueled combined heat and power (CHP) and final dewatering portions of the overall project, will constitute the single largest entirely new biosolids system in the US and the largest thermal hydrolysis system in the world. The sustainability aspects of the project include energy production and pathogen-free biosolids for beneficial reuse. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **John S. Chandler** | General – Constructability Lead | a. TOTAL | 38 | b. WITH CURRENT FIRM | 12 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Atlanta, GA |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BA – Mechanical Engineering | N/A |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| N/A |

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| a. | **Central District Wastewater Treatment Plant Oxygen Production, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2015 | 2015 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Technical Reviewer - Constructability.** To address the need for Biogas H2S treatment at the 143-mgd CDWWTP, the design team evaluated the H2S concentrations present in the biogas during regular loading periods, as well as peak loads. Ultimately the client chose the short-term alternative, with installation of biological H2S treatment, replacement of biogas pipelines, construction of a new electrical building to power the new biogas treatment system components, and construction of a new Switchgear Building for the Co-Gen facility including replacements for substations 17 and 18. Mr. Chandler provided constructability reviews for the project. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| b. | **North District Miami Dade Secondary Clarifiers, WASD, Miami, FL** | 2016 | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Technical Reviewer - Constructability.** Most of the secondary clarifiers (SCs) at 120-mgd NDWWTP have developed significant corrosion problems and are well beyond their useful life. Mechanisms in SCs 3, 6, and 8 failed and became inoperable in early 2015 due to significant corrosion and erosion through their center columns. The electrical equipment and the control equipment associated with the secondary clarifiers have also reached the end of their service life. An emergency replacement project was implemented to address these failed units. The proposed upgrades for these facilities include upgrades to the mixed liquor flow splitting, secondary clarifier, and secondary effluent concrete piping rehabilitation. Mr. Chandler provided constructability reviews for the project. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| c. | **North District Miami Dade Primary Clarifiers, WASD, Miami, FL** | 2017 | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Technical Reviewer - Constructability.** The NDWWTP was originally constructed in 1978. This plant has a permitted capacity of 120 mgd and is a secondary level treatment facility. This project includes the rehabilitation and/or replacement of system components associated with the primary sludge pump stations, primary clarifiers, odor control systems, yard piping, and air ducts. Mr. Chandler is providing constructability reviews for the project. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| d. | **Master Pump Station 450 Improvements, Broward County, FL** | 2019 | 2019 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Lead Construction Manager.** The County requested CDM Smith to provide design and construction services for improvements at their master wastewater pump station. For this project, Mr. Chandler served as construction manager responsible for constructability review and construction sequencing for to maintenance of plant operations during design, and responsible for coordination and supervision of inspectors, review of Contractor's schedules, work plans, payment applications, proposals and claims, coordination and distribution of shop drawings, RFIs, project meetings and reports, and facility start-up during construction. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Layla L. Llewelyn, PE, PMP** | Pre-Construction Phase Lead | a. TOTAL | 20 | b. WITH CURRENT FIRM | 13 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Coral Gables, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| ME – Environmental Engineering; BS – Civil Engineering | Professional Engineer (FL) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Project Management Professional (PMP); Member, Water Environment Federation; Member, Florida Water Environmental Association; CDM Smith Florida Representative for WateReuse Association

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Central District Wastewater Treatment Plant Oxygen Production, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2015 | 2015 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Manager/Task Manager.** The oxygen production facility is part of the activated sludge process at the CDWWTP. Oxygen for the oxygenation trains is generated on-site by three 70-tpd cryogenic oxygen production units. Ms. Llewelyn led a team through completion of the Design-Build Criteria package for the design and construction of a new oxygen production system that will provide full redundancy, as existing units are near the end of their useful life and are prone to failure. Tasks included the evaluation of the oxygen delivery needs for the CDWWTP, including identifying different alternatives for addressing the oxygen delivery system deficiencies, identifying alternative oxygen generation technologies, preparing a Basis of Design Report, Design Criteria Package Specification for Design-Build Procurement, and assistance during procurement.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Alternative Route Analysis and Preparation of Design-Build Criteria for the Installation of a 48-inch Diameter Water Main for "Area N', Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2017 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Task Manager.** As the task manager for the completion of alternative route analysis for the Area N improvements for the MDWASD, as originally recommended in the Department's Water Facilities Master Plan Update, Ms. Llewelyn lead and coordinated the field visits, the initial environmental investigations, and the analysis and assessments of route alternatives of approximate 9 miles of proposed 48-inch diameter and 36-inch diameter water transmission main needed to improve water delivery to southern portions of Miami-Dade County.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Replacement of Large Diameter Process Pipe Preliminary Design, George T. Lohmeyer RWWTP, City of Fort Lauderdale, FL** | 2012 | 2012 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Technical Review.** CDM Smith was selected to address several large diameter process pipe failures at the George T. Lohmeyer Regional Wastewater Treatment Plant. The design team performed hydraulic evaluations at current design flows to confirm pipe diameters needed to gravity ow from the pretreatment building to both reactors and from both reactors to clarier battery 3. The construction team determined how long a process pipe component can be taken offline, determined best replacement techniques, identified strategic flow by-passing with temporary jumper pipes, provided budget costs and provided a replacement schedule. The preliminary design identified the phased replacement of large diameter process pipe with ductile iron pipe beginning with approximately 2,460 linear feet of critical-duty prestressed concrete cylinder pipe consisting of 660 feet of 66-inch pipe; 180 feet of 54-inch pipe; 780 feet of 48-inch pipe, and 840 feet of 42-inch pipe. Ms. Llewelyn provided technical review.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Melissa X. Cairo** | Pre-Construction Phase – Jurisdiction Engagement, Preliminary Budgets; Post Construction Phase – Final Documentation and Retention | a. TOTAL | 5 | b. WITH CURRENT FIRM | 5 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Boca Raton, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Environmental Engineering | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Member, Society of Hispanic Professional Engineers

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **North District Miami Dade Secondary Clarifiers, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2016 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Engineer.** Ms. Cairo assisted in the completion of various tasks such as identifying total pipe length of pipeline in need of rehabilitation. She strategized and suggested a construction sequence for the rehabilitation of the existing effluent pipeline, taking into consideration clarifier capacity and bypass connections to keep the system running efficiently while under construction. She created drawings and figures to be incorporated into the Report from CAD files using DWG TrueView software. Portrayed construction sequencing for pipeline rehabilitation using different color codes and legends.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Master Pump Stations (MPS) No. 450 and No. 456 Improvements, Broward County, FL** | 2019 | 2019 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**General Engineer.** CDM Smith was retained by Broward County to provide professional engineering services, including construction administration services during construction, for rehabilitation and upgrades of wastewater MPS No. 450 and MPS No. 456, a septage receiving facility pump station, and related metering and telemetry systems. Work involves architectural, structural, electrical, mechanical, instrumentation, and heating, ventilating, and air conditioning (HVAC) repairs and/or upgrades. Ms. Cairo successfully completes permits online for the County, provides detailed instructions and orientation for online submission process, and performs quality checks for specs and drawings before submitting to the County. She also reviews comments from Broward County making sure they were all addressed. Ms. Cairo effectively corrects errors and typos found on specs (footers, headers, titles, etc., while preparing final project submittals. She was also responsible for printing five set of specs and burned CDs with drawings and specifications to be delivered to the client.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Annual Renewal and Replacement Report, City of Fort Lauderdale, FL** | 2020 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Engineer.** The City of Fort Lauderdale's contract with the Large Users of the Central Regional Wastewater System (Regional System) requires CDM Smith to prepare an annual schedule that projects facility renewal and replacement costs over a 20-year span. This analysis estimates the amount of funding to be set aside by the City for anticipated renewal and replacement expenditures for the Central Regional wastewater System. We were responsible for identifying areas of improvement to regional wastewater facilities through a review of accounting records, system operation and maintenance manuals, and construction contract documents. Estimating the remaining useful life of major equipment and facilities on the basis of age and observed condition. Developing a schedule for anticipated future equipment replacement. Estimating the anticipated equipment replacement expenditures. Determining the balance of the Replacement and Improvement Reserve Account and determining the amount of additional funding needed for the planned renewal and replacement expenditures over the next 20-years. Calculating annual equipment replacement funding requirements for FY 2019-20. Summarizing the results of the analysis in a written report.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Stephen M. Solters** | Pre-Construction Phase - Feasibility of Construction Methods | a. TOTAL | 44 | b. WITH CURRENT FIRM | 16 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Tampa, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| Coursework, Business Administration and Life Sciences; Coursework, Allegheny County Community College; NYU School of Real Estate and Construction Technology | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

N/A

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Engineering and Construction Management Services for Design-Build-Operate (DBO) Surface Water Treatment Plant (WTP) Project, Tampa Bay Water, FL** | 2004 | 2004 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Construction Project Manager.** Mr. Solters, as a construction project manager, providing engineering and construction services for a $144M, 66-mgd Surface WTP and Alkalinity Adjustment Facility in Hillsborough County, FL. In addition to construction and design management, he provided operations coordination and client relations. For this $87M DBO facility, he developed and maintained a $6.3M positive cash flow position. CDM Smith was chief design partner and the engineer of record for the engineering and construction of the DBO surface water treatment project, as well as being in charge of all the permitting aspects of the project. CDM Smith coordinated and worked closely and successfully with all state and local regulators to ensure a smooth permitting transition from construction to operations. Mr. Solters worked closely with CDM Smith personnel and management at all levels and on every aspect of the project for over three years from the initial design through the start up and successful completion of the final acceptance test. CDM Smith was instrumental and indispensable in contributing to the projects and the team's goal-oriented work ethic and worked closely with Mr. Solters and the project team to successfully resolve every challenge to maintain schedule and budget with no sacrifice of quality and performance. This project won the American Academy of Environmental Engineer's Grand Award in Design in 2003. Notably, the project's design and construction value was $87M and was successfully completed on time and within the contract value with no unsolicited change orders being asserted against or paid for by the public client Tampa Bay Water. In addition, unsuitable soil conditions were encountered early in the project that constituted an uncontrollable circumstance to the team. This $100,000 claim was settled with Tampa Bay Water for no cost and no schedule delay to the client in exchange for a reduction in retainage and the acceleration of cash flow due to the project team's attainment of early finish schedule milestones.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Design-Build-Operation of a Mass Burn Waste-to-Energy (WTE) Facility, Solid Waste Authority of Palm Beach County (SWA), FL** | 2015 | 2015 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Construction Project Manager.** Mr. Solters was the construction manager of this $12M, waste-to-energy facility for the Solid Waste Authority. This project consists of sitework, utilities, construction of LEED® Platinum Visitor's Center building, tipping building, maintenance building, ash building, and air pollution control (APC) building. CDM Smith was also responsible for the HVAC, low voltage electrical, fire protection system, and architectural features throughout the entire project.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Arbennie Pritchett WRF Expansion, Okaloosa County, FL** | 2016 | 2016 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Design-Build Project Manager.** Mr. Solters provided design-build project management and construction services for the construction of a $13.9M, 5-mgd wastewater reclamation facility and septage receiving facility expansion for Okaloosa County Water and Sewer Department in Fort Walton Beach, FL.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Douglas M. Sutter, CCM** | Pre-Construction Phase - Schedule Review Analysis; Construction Phase - Schedule Review and Analysis | a. TOTAL | 24 | b. WITH CURRENT FIRM | 3 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Tampa, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| MS – Construction Management; BS – Architectural Design | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Certified Construction Manager (CCM), CMAA; Six-Sigma; 10-Hour OSHA Safety

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **Rehabilitation and Replacement Project, Shady Hills Wastewater Treatment Plant (WWTP), Pasco County, FL**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES 2017; CONSTRUCTION *(If Applicable)* 2019

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Controls Specialist.** Mr. Sutter served as the project controls specialist during the construction phase of improvements at the Shady Hills WWTP. The improvements included a new, 17-mgd internal recycle pump station and piping, effluent flow metering, headworks odor control, improved process control for the activated sludge process, and new storage and mixing systems for the Grease/Septage Receiving Facility.

b.

(1) TITLE AND LOCATION *(City and State)*: **South and Central Wastewater Expansion Study, Hillsborough County, FL**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES 2019; CONSTRUCTION *(If Applicable)* N/A

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Controls Specialist.** CDM Smith has been working closely with County planning and engineering, as well as the assistant County administrator and director level staff to validate County proposed solutions to provide water and wastewater utilities to a growing population. We assisted in feasibility analysis of developing pipeline routes, flow requirements, plant capacity requirements, and other strategies for addressing the County's capacity needs. We leveraged our considerable knowledge to inform this project's implications for Southern Hillsborough County. Mr. Sutter provided project controls insight into the proposed alternatives, including scheduling reviews.

c.

(1) TITLE AND LOCATION *(City and State)*: **Industrial Wastewater Treatment Plant Upgrades Project, Naval Air Station, Jacksonville, FL**

(2) YEAR COMPLETED: PROFESSIONAL SERVICES N/A; CONSTRUCTION *(If Applicable)* Ongoing

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Controls Specialist.** Mr. Sutter is the project controls specialist for this $15M+ Lump Sum Construction project to rehabilitate and improve two existing wastewater treatment plants and four ancillary buildings servicing the Fleet Readiness Center of Naval Air Station Jacksonville. Industrial wastewater is generated from aircraft and component chemical paint stripping, cleaning operations and plating/conversion coating rinse tank equipment. The project included installing several waste surge transfer systems; several oil/grease filter systems; several sulfuric acid tank and pump systems; several sodium hydroxide tank and pump systems; three fenton batch reactors; deep bed filters; several sludge transfer systems; equalization pump systems; various bag filters; sodium hypochlorite systems; non-potable water pumping systems; one ferrous sulfate system; one lime system; one polymer system; several hydrogen peroxide tank and pump systems; one acid/alkaline treatment system; one chrome transfer system; one carbon filter unit; one reverse osmosis system; several sodium bisulfate pumping systems; CPS supernatant tank and pumping system; solids dewatering unit with storage tank and pumping system; low hex chrome system with filter, tank, and pumping system; and sodium hypochlorite tank and pump system. Both treatment plants were in operation during construction and CDM Smith had to perform all work while maintaining plant operations on a very fast 9-month on-site construction schedule. This included very close coordination and planning with the government to minimize outages as much as possible and schedule them in advance during off-peak periods.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Alexander G. Chinnery** | Construction Phase – Construction Manager | a. TOTAL | 25 | b. WITH CURRENT FIRM | 25 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Boca Raton, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Civil Engineering | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

N/A

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED: PROFESSIONAL SERVICES | (2) YEAR COMPLETED: CONSTRUCTION *(If Applicable)* |
|---|---|---|---|
| a. | **North District Miami Dade Primary Clarifiers, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2018 | 2018 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | ☑ PERFORMED WITH CDM SMITH | |
| | **Construction Coordinator.** Mr. Chinnery was the construction coordinator on this construction project. Mr. Chinnery coordinates all the documentation of RFIs and shop drawings between the PM/CM and the design engineers and the other subconsultants. Coordinating all the site visit meetings between the contractor and field engineers. | | |
| b. | **Master Pump Station (MPS) 456, Broward County, FL** | 2019 | 2019 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | ☑ PERFORMED WITH CDM SMITH | |
| | **Construction Coordinator.** Broward renovated the existing MPS 4560 and Mr. Chinnery was the construction coordinator on this project. Mr. Chinnery oversaw some of the construction work on the project. Mr. Chinnery reviewed RFIs, pay applications, claims, and shop drawings. Coordinated correspondence between the design engineers, client, and the contractor. Coordinated monthly progress meetings between the client and contractor. | | |
| c. | **MPS 450, Broward County, FL** | 2019 | 2019 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | ☑ PERFORMED WITH CDM SMITH | |
| | **Construction Coordinator.** Broward renovated the existing MPS 450 and Mr. Chinnery was the construction coordinator on this project. Mr. Chinnery oversaw some of the construction work on the project. He reviewed RFIs, pay applications, claims, and shop drawings. Coordinated correspondence between the design engineers, client, and the contractor. Coordinated monthly progress meetings between the client and contractor. Mr. Chinnery conducted startup testing of primary and jockey pumps. Conducted coordination of closeout documentation for finalizing the construction project. | | |
| d. | **Booster Station 3A, Broward County, FL** | 2018 | 2018 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | ☑ PERFORMED WITH CDM SMITH | |
| | **Construction Coordinator.** Broward County constructed a new Booster Station in the linear park of the Fort Lauderdale International Airport and Mr. Chinnery was the construction coordinator on this project. Mr. Chinnery oversaw some of the construction work on the project. Mr. Chinnery reviewed requests for information (RFIs), pay applications, claims and shop drawings. Coordinated correspondence between the design engineers, client, and the contractor. Coordinated monthly progress meetings between the client and contractor. | | |
| e. | **Electrical Load Center 5 and 6 Replacement Services During Construction, North Regional WWTP, Broward County, FL** | 2016 | 2016 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | ☑ PERFORMED WITH CDM SMITH | |
| | **Construction Coordinator.** Broward renovated the existing MPS 456 and Mr. Chinnery was the construction coordinator on this project. Mr. Chinnery oversaw some of the construction work on the project. Mr. Chinnery reviewed RFIs, pay applications, claims, and shop drawings. Coordinated correspondence between the design engineers, client, and the contractor. Coordinated monthly progress meetings between the client and contractor. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **David M. Mastran** | Construction Phase – Senior Field Inspection | a. TOTAL | 50 | b. WITH CURRENT FIRM | 6 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Boca Raton, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| N/A | N/A |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| N/A |

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED: PROFESSIONAL SERVICES | (2) YEAR COMPLETED: CONSTRUCTION *(If Applicable)* |
|---|---|---|---|
| a. | **Master Pump Station 450, Broward County, FL** | 2018 | 2018 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Senior Construction Representative.** CDM Smith performed hydraulic calculations of the system, developed the operational envelopes for the pump systems, applied hydraulic institute standards for suction and discharge piping, surge analysis, designed the temporary station bypass systems, and developed the new control telemetry, flow metering. The design included by-pass pumping of the entre flow during construction. The design included converting from a wet well into an inline station. The design team in replaced pumps, valves, flow meter, standby power generator, above ground bulk fuel tank, electrical and controls to meet conditions as stated in our basis of design report. | | |
| b. | **Design-Build Criteria Professional Services for Fire Station No. 113, City of Delray Beach, FL** | 2018 | N/A |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Senior Construction Representative.** CDM Smith prepared the Design Criteria Package (DCP) to include a detailed scope, establish the design criteria, performance requirements, and bid and contract parameters for the Project. The Design Criteria Package included details for a new, 28,300 square foot facility to replace the existing 6,000 square foot facility. The programmed space is split over three floors and the DCP includes facility room data sheets for each space within the building, outlining City requirements for room sizes, materials, finish selections, hardware, furniture, special equipment, telecommunication systems, and also criteria for mechanical, electrical and plumbing (MEP) systems, site development, landscaping, utilities services and stormwater management. Conceptual floor plans were developed with the Owner for the entire facility to validate the facility size and to ensure proper functional relationships met the Owner's requirements. | | |
| c. | **South Florida Water Management District (SFWMD) – L-8 Divide Structure, SFWMD, FL** | 2018 | 2018 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Senior Construction Representative.** Mr. Mastran served as the senior project representative for the construction of a new $4.5M fully-automated, three-gate water control structure designed by SFWMD. He monitored the construction for compliance with the contract documents and assists the engineers with identification and resolution of field issues. In addition, he coordinated and scheduled all laboratory field testing and specialty inspections with the contractor and the owner. | | |
| | **Public Works Department – Fire Station Bond Program, City of Fort Lauderdale, FL** | 2009 | 2009 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☐ PERFORMED WITH CDM SMITH |
| | **Senior Project Manager.** As part of the $43M bond program, Mr. Mastran was the senior project manager during construction of the first two fire stations, valued at $10.5M, while with a previous firm. When the project was expanded by the City of Fort Lauderdale, he assumed responsibility for program and construction management of the entire bond program. He also created a "Construction Management Project Manual" for the City's construction department, and assisted City consultants with visual and functional design and construction documents related to fire department facilities. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Beth E. McArdle** | Construction Phase – Administration, , Project Files, and Document Control | a. TOTAL | 33 | b. WITH CURRENT FIRM | 8 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Boca Raton, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BA – Sociology | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Professional Notary – National Notary Association Commission #FF237189; Member, International Association of Administrative Professionals

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| a. | **CDM Smith – Southeast Region, Boca Raton, FL** | Ongoing | N/A |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Administrative Assistant.** Ms. McArdle provides project support for engineering and marketing staff within CDM Smith's Southeast region of the US. She has setup, reviewed, and edited technical specification reports for public and private clients in South Florida based on in-house document format procedures, guidelines, and requirements. She is also responsible for tracking payment schedules to ensure original schedule completion. She is currently providing submittal tracking for Miami-Dade County projects. | | |

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| b. | **Design-Build-Operate of a Mass Burn Waste-to-Energy (WTE) Facility, Solid Waste Authority of Palm Beach County (SWA), FL** | 2015 | 2015 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Project Coordinator.** Ms. McArdle served as construction project admininstrator for SWA's WTE facility project. She was responsible for tracking subcontractor payroll information for monthly manpower reports and living wage reports. She processed vendor invoices and AIA subcontract pay applications. She also coordinated with vendors regarding pay application procedures and payment schedules being met in a timely manner. Ms. McArdle assisted the safety manager with tracking new employee orientation information as well as maintained files and index of Certificates of Insurance and bond documentation of all subcontractors on site. | | |

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| c. | **MPS No. 450 and No. 456 Improvements, Broward County, FL** | 2019 | 2019 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Administrative Coordinator.** CDM Smith was retained by Broward County to provide professional engineering services, including construction administration services during construction, for rehabilitation and upgrades of wastewater MPS No. 450 and No. 456, a septage receiving facility pump station, and related metering and telemetry systems. Work involves architectural, structural, electrical, mechanical, instrumentation, and HVAC repairs and/or upgrades. | | |

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| d. | **Energy Smart Florida Project, Florida Power & Light, Jupiter, FL** | 2012 | 2012 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☐ PERFORMED WITH CDM SMITH |
| | **Junior Project Coordinator.** Ms. McArdle worked with vendors on the Energy Smart Florida Project to verify contractual agreements. She followed up with outstanding invoices, contract administration, and billing issues as well as processed vendor financial statements and maintained statements using SAP. In addition, she prepared reports to maintain vendor encumbrance balance sheets for project managers. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Craig A. Gadberry, PE** | Construction Phase - Project Budget vs Cost Review and Tracking | a. TOTAL | 27 | b. WITH CURRENT FIRM | 18 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Maitland, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Civil Engineering | Professional Engineer (FL) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

First Aid and CPR Training; OSHA 10-hour Occupational Safety and Health Training Certification; Primavera Planning and Scheduling; Member, Florida Engineering Society; Member, National Society of Professional Engineers; Member, American Society of Professional Estimators; Member, Association for the Advancement of Cost Engineering International

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Ion Exchange Resin Plant and East WTP Improvements, City of Boynton Beach, FL** | 2017 | 2017 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Chief Estimator.** Mr. Gadberry was the chief estimator for the $30.8M through a progressive design-build method to install an Ion Exchange Resin Plant at the West WTP site for pretreatment of the water supply to the East WTP from the western wellfield while upgrading of the East WTP to a capacity of 24 mgd.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **UEP North 2 Facilities Design and Construction Services, City of Cape Coral, FL** | 2017 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Chief Estimator.** The North 2 Utility Extension Project area consists of adding potable water, wastewater, and irrigation services to an approximately 6.2 square miles residential area. Craig provided cost estimating services for the design of 13 new sanitary pump stations and two sanitary master pump stations, two canal pump stations for transmitting surface water for irrigation purposes, and approximately 25 miles of force mains to transmit the wastewater collected in the project area to the City's existing water reclamation facilities.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Dania Beach Nanofiltration WTP Addition Design-Build, Dania Beach, FL** | 2012 | 2012 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Chief Estimator.** Mr. Gadberry worked with the design team to provide a $8.9M nanofiltration award-winning design-build project. This project included design, permitting, construction and six months of on-site operation. The work, funded by the American Recovery and Reinvestment Act (ARRA) through the Florida Department of Environmental Protection (FDEP) State Revolving Fund, is the expansion of the city's existing three mgd lime softening plant with an additional two mgd of nanofiltration treatment. The work included two new one mgd nanofiltration skids operating in a new 6,000-square-foot LEED®-certified membrane building, new degassifier, and new chemical storage and pumping facilities. The work also included the demolition of the existing operations center and the incorporation of the existing lime softening electrical and control systems into the new nanofiltration system. This project was recognized by the US Environmental Protection Agency (US EPA) for its outstanding use of ARRA funds to benefit the community, and won both a 2012 Engineering Excellence Awards Grand Award from the FICE and a National Recognition Award from the ACEC.

d.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Design-Build-Operation of a Mass Burn Waste-to-Energy (WTE) Facility, Solid Waste Authority of Palm Beach County (SWA), FL** | 2015 | 2015 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Chief Estimator.** Mr. Gadberry served as CDM Smith's regional chief estimator for the $120M portion of the design andconstruction of the new $672M, 3,000 tons per day mass burn WTE facility. CDM Smith's scope of work included design and constructionof the Tipping Building, Air Pollution Control Building, Ash Management Building, Maintenance Building, Sky Bridge, and a LEED® Platinum Certified Visitor Center. Additional scope includes cladding and roofing of the Refuse Handling Building, Boiler Building, Water Treatment Building, and Turbine Generator Building. The project also included the design and construction of one of the largest rain water harvest systems in the US comprising of a rainwater collection system from seven acres of roof area. The design and construction of onsite roadways, drainage, utilities, water storage tank, landscaping, grading, and fencing was also part of CDM Smith's scope of work.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Richard K. Newberg** | Start-up, Testing and Commissioning, City Staff Training | a. TOTAL | 41 | b. WITH CURRENT FIRM | 12 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Maitland, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Business Science; AA – Computer Science | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Class A Drinking WTP Operator: FL; Class A WWTP Operator: FL, SC; Class B WTP Operator: SC; Class A Chemical-Physical License: SC; Grade 4 WWTP Operator: AZ; Grade 2 WTP Operator: AZ; National Association of Sewer Service Companies (NASSCO) Certified: Pipeline Assessment Certification Program (PACP); Manhole Assessment and Certification Program (MACP); Lateral Assessment and Certification Program (LACP); AWWA Utility Risk and Resilience Certificate Program

### 19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Annual Renewal and Replacement Report, City of Fort Lauderdale, FL** | 2020 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Role.** The City of Fort Lauderdale's contract with the Large Users of the Central Regional Wastewater System (Regional System) requires CDM Smith to prepare an annual schedule that projects facility renewal and replacement costs over a 20-year span. This analysis estimates the amount of funding to be set aside by the City for anticipated renewal and replacement expenditures for the Central Regional wastewater System. We were responsible for identifying areas of improvement to regional wastewater facilities through a review of accounting records, system operation and maintenance manuals, and construction contract documents. Estimating the remaining useful life of major equipment and facilities on the basis of age and observed condition. Developing a schedule for anticipated future equipment replacement. Estimating the anticipated equipment replacement expenditures. Determining the balance of the Replacement and Improvement Reserve Account and determining the amount of additional funding needed for the planned renewal and replacement expenditures over the next 20-years. Calculating annual equipment replacement funding requirements for FY 2019-20. Summarizing the results of the analysis in a written report.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Computerized Maintenance Management System, City of Fort Myers, FL** | 2019 | 2015 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Technical Lead.** The City of Ft. Myers owns two advanced wastewater treatment facilities (AWWTF) that are currently being renovated. The City selected CDM Smith to install a computerized maintenance management system (CMMS) as part of their asset management program. The work included populating the program with 300 assets, developing preventative maintenance plans and a tablet-based system. Mr. Newberg oversaw the asset data collection, the database development of the CMMS, creation of the preventative job plans for 300 assets, onsite training of the staff, and worked seamlessly with City staff during the execution of this project.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Utility Study and Evaluation, Naval Submarine Base, Kings Bay, GA** | 2019 | 2019 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Site Manager/O&M Specialist.** Mr. Newberg oversaw technical teams that conducted detailed condition assessments of the hydraulic, water, wastewater, drinking water distribution system, sanitary sewer system, and electrical systems at the Kings Bay submarine base. The work included geographic information system (GIS) mapping of all the utility assets, using camera, smoke, Smart Ball© and visual assessments of the sanitary sewer system including manholes and lift stations, evaluating the water distribution system using SAHARA technology along with system modeling. NAVSUBASE Kings Bay operates and maintains a 2.4 mgd capacity Nano-filtration water plant. The water is sourced from three 900-foot-deep wells and uses Nanofiltration for processing. The water distribution system consists of approximately 93 miles (490,000 LF) of pipe. The potable and fire protection water systems are combined. There are approximately 650 hydrants, and two elevated water towers. There are two WWTPs at NAVSUBASE Kings Bay: An Upper Base facility with 1.5 mgd capacity (aerobic and anaerobic lagoons) and a Lower Base facility with 0.5 mgd capacity (activated sludge). There are approximately 70 sewage lift stations,640 manholes and 54 miles (285,000 total LF consisting of roughly 120,000 LF force mains and 165,000 LF of gravity mains) of sanitary sewer lines.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Yanice I. Mercado, PE, PMP** | Post Construction Phase – Lead | a. TOTAL | 19 | b. WITH CURRENT FIRM | 18 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Boca Raton, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| ME – Environmental Engineering; BS – Chemical Engineering | Professional Engineer (FL, PR) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Project Management Professional (PMP), 2019; 2010 CIAPR Emerging Leader; Member, CIAPR; Sub-Secretary, SWANA Caribbean – Puerto Rico Chapter (2009 to 2010) – Solid Waste Association of North America; Secretary, SWANA Caribbean – Puerto Rico Chapter (2008-2009) – Solid Waste Association of North America

### 19. RELEVANT PROJECTS

**a.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Program Management Consulting Services, City of West Palm Beach, FL** | 2016 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Project Manager.** Ms. Mercado served as senior project manager and provided services as an extension of City of West Palm Beach's Public Utilities staff. Ms. Mercado supported the management and administration of multiple existing capital improvement projects. Overall responsibilities included preparation of scope of services, negotiating fees, schedules and deliverables in order to contract design services, administering design contracts and tracking project expenditures, overseeing and coordinating design consultant activities, conducting and attending project meetings, reviewing invoices and recommending progress payments. Ms. Mercado actively participated and supported initiatives related to project scheduling and progress reporting. Ms. Mercado provided assistance in the development of a Capital Improvements Program (CIP) prioritization process for the City. Additionally, Ms. Mercado was actively involved in the construction management for the City's 48-inch force main renewal project, the development of the project's emergency response procedures and the public outreach initiatives before and during construction.

**b.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **City-Wide Program Management Services, City of Delray Beach, FL** | 2018 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Engineering Management.** The City of Delray Beach retained CDM Smith to provide program and project management consulting services to act as an extension of City staff with the primary role of assiting with special projects and managing and administering multiple capital improvement projects (CIPs) on an as-needed basis. Ms. Mercado provided engineering management services for projects under this contact.

**c.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Technology Integration Program, Puerto Rico Aqueduct and Sewer Authority (PRASA), Puerto Rico** | 2015 | 2015 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Manager.** Ms. Mercado managed the Technology Integration Program for PRASA. This multi-phase program was designed to gear PRASA toward a higher level of success in the use of technology and becoming a modern utility that leverages its investments in technology. With this Program, PRASA was able to develop and implement a geographic information system (GIS) enterprise database and a custom web-based portal named AquaWeb. This user friendly portal has over 500 registered PRASA users and it integrates the enterprise GIS database with layers of information, real-time telemetry data and document management to provide a strong business intelligence tool for the Agency. As project manager, Ms. Mercado ensured that all seven project phases were delivered on schedule and within budget. Her responsibilities included: developing, negotiating and managing the scope of work, schedule and budget, coordinating and managing subcontracted work, reviewing and approving invoices, conducting application testing and ensuring CDM Smith's quality standards were applied to all deliverables, conducting progress meetings and providing project training, education and outreach for internal PRASA application users.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Allyson L. Nunes** | Post Construction Phase – CADD City Standards Compliance | a. TOTAL | 38 | b. WITH CURRENT FIRM | 38 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Boca Raton, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| AS – Civil Engineering Technology; Society of Industrial Artists and Designers (SIAD) Degree | N/A |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| Basic Drafting; AutoCAD 12 to 14 Upgrade |

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| a. | **Central District Wastewater Treatment Plant Oxygen Production, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2015 | 2015 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Advanced Designer.** Evaluation of the oxygen delivery needs, alternatives for addressing the oxygen delivery system deficiencies, and construction of a new oxygen production system. The oxygen production facility is part of the activated sludge process at the CDWWTP. Oxygen for the oxygenation trains is generated on-site by three 70-tpd cryogenic oxygen production units. Tasks included the evaluation of the oxygen delivery needs for the CDWWTP, including identifying different alternatives for addressing the oxygen delivery system deficiencies, identifying alternative oxygen generation technologies, preparing a Basis of Design Report, Design Criteria Package Specification for Design-Build Procurement, and assistance during procurement. Ms. Nunes was responsible for preparing the computer-aided design (CAD) drawings. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| b. | **Alternative Route Analysis and Preparation of Design-Build Criteria for the Installation of a 48-inch Diameter Water Main for "Area N', Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2017 | N/A |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Advanced Designer.** This project traversed local ROW, Florida Department of Transportation (FDOT) ROW, CSX, and Florida East Coast (FEC) railroad ROW, canal crossings under the jurisdiction of the South Florida Water Management District (SFWMD). The following agencies have jurisdiction over this project: SFWMD, US Army Corps of Engineers (USACE), FDOT, Miami-Dade Public Works and Waste Management Department, Division of Environmental Resources Management, MDWASD, Fire Rescue, Florida Department of Environmental Protection (FDEP), Florida Department of Health, FEC Railway, CSX, and Miami-Dade Expressway Authority (MDX). The Department requested CDM Smith to provide professional services for the development of a design-build criteria package and contract procurement documents for the proposed 48-inch diameter transmission main based on the recommended route, including permitting services, procurement support services, and limited services during the design-build contract phase. Ms. Nunes was responsible for preparing the computer-aided design (CAD) drawings. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| c. | **Master Pump Station 450, Broward County, FL** | 2019 | 2019 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Advanced Designer.** CDM Smith performed hydraulic calculations of the system, developed the operational envelopes for the pump systems, applied hydraulic institute standards for suction and discharge piping, surge analysis, designed the temporary station bypass systems, and developed the new control telemetry, flow metering. The design included by-pass pumping of the entre flow during construction. The design included converting from a wet well into an inline station. The design team in replaced pumps, valves, flow meter, standby power generator, above ground bulk fuel tank, electrical and controls to meet conditions as stated in our basis of design report. Ms. Nunes was responsible for preparing the computer-aided design (CAD) drawings. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Pooja H. Kalaria, PE** | Support Services – Lead Structural | a. TOTAL | 10 | b. WITH CURRENT FIRM | 9 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Maitland, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| MS – Civil Engineering; BS – Civil Engineering | Professional Engineer (FL) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Confined Space Entry

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| a. | **Master Pump Station (MPS) 456, Broward County, FL** | 2019 | 2019 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Structural Engineer.** Ms. Kalaria provided the structural design of the fuel tank slab and screen wall. The screen wall was a cantilevered CMU wall with concrete foundation. The wall was a request by the client to protect the fuel tank from view outside of the pump station site. Ms. Kalaria coordinated with the fuel tank designer to ensure the client requests were met while still meeting all fuel tank clearance requirements. Wind was the governing factor in the design of this screen wall and slab. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| b. | **Retail Master Pump Station 221 Rehabilitation, Water and Wastewater Services, Broward County, FL** | Ongoing | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Lead Structural Engineer.** Provided structural investigation and design services for this existing master pump station site. Following the visit to the existing site, Ms. Kalaria provided the structural scope of services, as well as the structural design criteria, in the basis of design report for the County. Ms. Kalaria coordinated with the process mechanical discipline to design the new top slab retrofit for the existing wet well, as the existing elevated slab had severe concrete loss from exposure to the sulfuric gases. The new top slab had to take into account the existing wet well designs, as well as new piping and access hatches for the pumps. Ms. Kalaria also designed the slab on grade foundations for the odor control system, the diesel fuel tank, and the generator, as well as the aluminum plate roof cover over where an existing fan was removed at the existing building on site. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| c. | **Canal Pump Station Design North 2 Utilities Extension Project, City of Cape Coral, FL** | 2018 | 2018 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Structural Engineer.** Ms. Kalaria provided structural design calculations for the CMU-structure Canal Pump Station building, inter-disciplinary coordination during design, and drafting and specification assistance for the project. Design calculations included concrete stem wall and footings, CMU walls, pre-cast concrete lintels, anchorage to CMU for preengineered cold-formed steel trusses, steel deck and composite metal deck diaphragm, as well as steel and concrete frame. The building had a unique structure to match the architecture of the neighborhood it was located in. The pump station was designed to look like a house with numerous hipped roofs, and also had a hidden flat roof for roof hatches that the pumps could be lifted out of. A cold-formed steel truss manufacturer was contacted during design to provide assistance on practical truss-layouts and connections for the unique roof. Wind governed the design of this building. Design calculations were performed in Mathcad, Enercalc, RAM Elements, Excel, and Hilti Profis. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| d. | **CD 1.09 Fog Removal Facility, Miami-Dade Water and Sewer Department, South District Wastewater Treatment Plant, Miami-Dade County, FL** | 2019 | 2019 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Structural Engineer and Reviewer During Construction Services.** Ms. Kalaria reviewed construction submittals (shop drawings and RFIs) for this project, as well as facilitated submittals of addendums during the construction phase. The project included concrete additions to existing structures, as well as the addition of an exterior bridge crane steel frame structure, and pile supported foundations. Reviews were required to be detailed for the high wind requirements, as well as adhering to WASD and PM/CM standards. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Michael T. Alford, AIA, LEED® AP BD+C** | Support Services – Lead Architect | a. TOTAL | 22 | b. WITH CURRENT FIRM | 20 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Maitland, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| MA – Architecture; BS – Architectural Studies | Registered Architect (FL, SC, NC, GA, TN, AL, KY, VA, WA, LA) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

National Council of Architectural Registration Boards (NCARB); Leadership in Energy and Environmental Design Accredited Professional – Building Design & Construction (LEED® AP BD+C); 2006 AIA Orlando Young Architects Forum Achievement Award, 2004; AIA National Associates Committee Certificate of Appreciation

### 19. RELEVANT PROJECTS

**a.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Master Pump Station Projects, Broward County, FL** | Ongoing | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Architect-of-Record and Senior Architect.** Mr. Alford is the architect of record or Senior Architect for multiple Broward County Master Pump Station projects including MPS 450, MPS 456, MPS 221, and MPS 454. Architectural improvements include flooring replacement, door, louver and window replacement, new conditioned electrical rooms and roofing. MPS 450 included exterior building aesthetic improvements to remove dated faux stone elements and replace with a clean line contemporary aesthetic to blend with surrounding community buildings.

**b.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Central Monitoring Facility, Palm Beach County, FL** | 2013 | 2013 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Architect/Architect-of-Record.** Mr. Alford assisted with the preliminary design, final design, permitting, bidding, and construction services for the $3M Central Monitoring Facility (CMF). Mr. Alford collaborated with county staff during preliminary design evaluating three options for the CMF: option 1 – interior renovation of the document storage area on the first floor of the existing Central Regional Operations Center (CROC) Administration and Engineering Building; option 2 – addition to the southeast side of the existing CROC building; and option 3 – a new standalone facility located on the CROC complex site. After evaluating each of the options with the county for construction costs, site modifications, impact to future operations, and impact to current staff, it was decided that option 2 was the most viable option.
The CMF is an approximately 3,000 square foot secure command and control facility serving dual functions. The primary function, the communications control area serves as the central command and control center, operating on a 24/7/365 basis to monitor SCADA, security video, and real time data as part of their emergency identification and management protocol. The secondary function, the emergency command center will house critical county staff before, during, and after disaster events.

**c.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Ion Exchange Resin Plant and East WTP Improvements, City of Boynton Beach, FL** | 2017 | 2017 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Architect.** Mr. Alford was the senior architect for design, permitting, and construction phases of the Progressive Design-Build Ion Exchange East Water Treatment Plant Improvements. The project includes a Repump Station Electrical Building and a renovated area of approximately 22,300 square feet in an existing two-story Control Building. The Existing Control Building is renovated to provide a new independent out-patient Clinic Area with its own entrance area. The remaining renovations pertain to the general facilities, lab and office spaces within the two-story building for plant staff, equipment, and controls.

**d.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **George T. Lohmeyer Regional WWTP Improvements, City of Fort Lauderdale, FL** | 2010 | 2010 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Architect and Architect-of-Record.** Mr. Alford's responsibilities for this project have included architectural design and coordination of plant-wide interior building improvements, including painting, flooring, and ceiling replacements. In addition, he designed and coordinated the removal and replacement of numerous building roofs throughout the plant.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Amanda R. Culp, Assoc. AIA** | Support Services – Architect | a. TOTAL | 5 | b. WITH CURRENT FIRM | 5 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Maitland, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| MA – Architecture; BA – Design: Focus in Architecture | Archetictural Intern |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| N/A |

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| a. | **Master Pump Station 450 and 456, Broward County, FL** | 2018 | 2018 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Architectural Intern.** Ms. Culp assisted the architect-of-record with the architectural services related to design, permitting, bidding and construction of the rehabilitating and upgrading of wastewater MPS No. 456. The main exterior elevations of PS 456 was stripped of its outdated architectural features and redesigned to echo the architectural spirit of the similar updated Broward County Pump Stations. | | |

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| b. | **Administration Building No. 1 Roofing Replacement, Broward County , FL** | 2016 | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Architectural Intern.** Ms. Culp assisted the architect-of-record with the architectural services related to design, permitting, bidding, and construction of the Broward County Administration Building No. 1 Roof Replacement project. The project included the design of approximately 30,000 square foot of roof replacement on three different roof levels. | | |

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| c. | **Brush Creek Wastewater Treatment Plant (WWTP) and Knob Creek WWTP Improvements, City of Johnson City, TN** | Ongoing | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Architectural Intern.** Ms. Culp is assisting the architect-of-record with the architectural services related to design, permitting, bidding, and construction of the Johnson City Brush and Knob Creek WWTP Improvements. Plant buildings include a disinfection building, solids building, and electrical building. The cavity wall construction with brick veneer buildings are designed to complement the architecture of the existing plants while providing the client with a low maintenance and durable construction. | | |

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| d. | **Osprey WRF Nutrient Removal Upgrade Project, City of Titusville, FL** | 2018 | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Project Architect and BIM Coordinator.** Ms. Culp is the architectural discipline lead and project architect for this multi-disciplinary WWTP modification project to enhance nutrient removal through construction of new step feed treatment basins, electrical building, and alum dosing system. She is responsible for the design development of the new electrical building and the design intent for the weather canopy over the blower pump pad associated with the new step feed basins. As the BIM Coordinator, Ms. Culp was responsible for the development and maintenance of the process revit families, shared coordinates file and the required QP Navisworks models and clash tests and distributing to the team for incorporation. | | |

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| e. | **Canova Beach Pump Station Improvements, City of Melbourne, FL** | Ongoing | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Project Architect and Architect-of-Record and BIM Coordinator.** Ms. Culp is the architect-or-record and the project architect for the final design, permitting, and bidding of the Conova Beach Pump Station Improvements project. She is responsible for the design of the new electrical building and the design intent of the chemical feed and storage structure canopy and the overseeing of the construction document development. The electrical building construction and aesthetics are to be similar in style to the existing electrical building located at the City owned Pineda Booster Pump Station. As the BIM Coordinator, Ms. Culp was responsible for the development and maintenance of the process revit families, shared coordinates file and the required QP Navisworks models and clash tests and distributing to the team for incorporation. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Emilio H. Gacharich, PE** | Support Services – Lead Electrical | a. TOTAL | 24 | b. WITH CURRENT FIRM | 24 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Boca Raton, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| MA – Environmental Studies and Analysis;<br>BA – Environmental Sciences | Professional Engineer (FL, AL, KY) |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| Member, Institute of Electronic and Electrical Engineers (IEEE) |

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|---|
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| a. | **Central District Wastewater Treatment Plant Oxygen Production, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | Ongoing | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Electrical Design Lead.** To address the need for Biogas H2S treatment the design team evaluated the H2S concentrations present in the biogas during regular loading periods, as well as peak loads. Ultimately the client chose the short-term alternative, with installation of biological H2S treatment, replacement of biogas pipelines, construction of a new electrical building to power the new biogas treatment system components, and construction of a new Switchgear Building for the Co-Gen facility including replacements for substations 17 and 18. Mr. Gacharich served as electrical lead for the project. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| b. | **Ion Exchange Resin Plant and East WTP Improvements, City of Boynton Beach, FL** | 2017 | 2017 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Electrical Engineer.** The City of Boynton Beach authorized CDM Smith to proceed with the progressive design-build of the East WTP Ion Exchange and Upgrades Project, which included completion of design, procurement of services and equipment, and construction services resulting in a turn-key facility. The plant now processes 24 mgd and is equipped with a state-of-the-art MIEX® pretreatment system. Other improvements include filter valve replacements; modifications to the disinfection system; replacement of the existing high service pumps; and a new 3.0-MG finished water storage tank. The project achieved a Bronze Envision Certification from the Institute of Sustainable Infrastructure. Mr. Gacharich served as electrical engineer for this project. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| c. | **Master Pump Stations 450 and 456 Rehabilitation and Improvements Projects, Broward County, FL** | 2018 | 20xx |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Electrical Engineer.** For pump stations 450 and 456, CDM Smith provided final design, permitting, and bid support for major equipment to be replaced, including the pumps, motors, liquid rheostats, valves, controls, seal water system, HVAC equipment, lighting, and SCADA/RTU. The CDM Smith team also performed the upgrade and rehabilitation of MPS 221 and MPS 454 site civil, process pumps, cosmetic architecture/structural, air conditioning, ventilation, backup generator, MCC, and instrumentation. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
| | | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| d. | **George T. Lohmeyer Regional Wastewater Treatment Plant Switchgear Building Upgrade, City of Fort Lauderdale, FL** | 2018 | 2018 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Electrical Engineer.** The City, in conjunction with CDM Smith, upgraded the GTLRWWTP feeder system and installed a permanent means of connection. The replacement of service points on this project included six 4,160-volt feeder breakers in the generator building, 4,160- to 480-volt substations in the generator building, 480-volt MCCs, 4,160-volt cable, and 4,160-volt motor starters. Other upgrades included replacement of front doors in the generator building room, new insulated louver covers, new suspended ceilings, new air handling units, removal of interior walls, interior finishes and painting, and replacement of seamless flooring. We also assisted with permit application submittals and bidding services. Mr. Gacharich served as the electrical engineer for this project. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Adrian Streng** | Support Services – Lead Programming SCADA | a. TOTAL | 25 | b. WITH CURRENT FIRM | 7 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Boca Raton, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Electrical Engineering Technology | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Allen Bradley Panel View and Panel Builder32 Application Software; Allen Bradley FactoryTalk View SE Programming; Allen Bradley FactoryTalk RSLogix5000 Project Develop Programming; Siemens Simatic S7 Advanced Programming and Maintenance; Siemens Simatic WinCC SCADA Programming

### 19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Master Pump Stations 450 and 456 Rehabilitation and Improvements Projects, Broward County, FL** | 2018 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Automation Engineer.** CDM Smith was retained by Broward County to provide professional engineering services, including construction administration services during construction, for rehabilitation and upgrades of wastewater MPS No. 450 and No. 456, a septage receiving facility pump station, and related metering and telemetry systems. Work involves architectural, structural, electrical, mechanical, instrumentation, and HVAC repairs and/or upgrades. Mr. Streng is responsible for automation design for the pump stations on this project.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **George T. Lohmeyer Regional Wastewater Treatment Plant Process Pipe Replacement, City of Fort Lauderdale, FL** | 2019 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**I&C Engineer.** CDM Smith is providing engineering services during construction to replace the process pipe lines critical to the treatment of wastewater between the pretreatment building and one of the bioreactors. The GTLRWWTP has previously experienced several large diameter process pipe failures. This project replacing the pre-stressed concrete cylinder pipe (PCCP) conveying pretreated raw sewage from the pretreatment building to reactor two inlet box, as well as the PCCP from reactor on outlet box conveying clarifier influent wastewater to the battery 3 clarifier splitter box. The PCCP will be replaced with ductile iron pipe (DIP). Some of the PCCP will be removed, but not replaced. There are approximately 1,245 lf of 42-inch and 48-inch diameter PCCP which will be removed and replaced with approximately 410 linear feet of new DIP, and approximately 400 lf of DIP replacement that will result from the disassembling of an existing temporary above ground 48-inch DIP, and re-installing it in the ground.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Pump Station 692 Improvements, Miami-Dade Water and Sewer Department (WASD), Miami-Dade County, FL** | Ongoing | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Lead I&C Design Engineer.** This project consists of design services for rehabilitation and replacement of the existing Pump Station 692. The improvements adhere to applicable codes and regulatory requirements and incorporate Miami-Dade standard specifications and details for design and construction. Design of the pumps station consists of improvement of the control system for the wet well pumps and booster pump station including design of the additional instrumentation and replacement of the existing ones to increase the complexity of the operation. Mr. Streng's responsibilities included the designing of SCADA system architecture, developing specifications, coordinating with process, electrical, HVAC, architecture, and mechanical disciplines to identify and resolve major design issues, developing P&IDs, and overseeing other CDM Smith automation staff involved in this project.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Jane E. Madden, PE, BCEE** | Support Services – WW Process | a. TOTAL | 37 | b. WITH CURRENT FIRM | 37 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Boston, MA |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Civil Engineering | Professional Engineer (MA) |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| Board Certified Environmental Engineer (BCEE) |

### 19. RELEVANT PROJECTS

**a.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Design Services for the Central District Wastewater Treatment Plant for the Ocean Outfall Legislation (OOL) Program, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2018 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Lead Practioner.** Ms. Madden is serving as the lead practitioner for the design of expansion and improvements to the Miami Water and Sewer Divisions (WASD) 143 mgd Central District WWTP. The project includes the design of a new headworks facility, upgrade and expansion to the secondary treatment system and effluent pumping system to discharge treated effluent into a system of groundwater recharge wells.

**b.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Comprehensive Regional Wastewater Master Plan, Detroit, MI** | Ongoing | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Technical Advisor.** Ms. Madden is the Water Resource and Recovery (WRRF) Technical Advisor for the 40-year wastewater master plan for the Great Lakes Water Authority's wastewater service area that covers 944 square miles and three million residents in Southeast Michigan. Her role includes evaluation of the WRRF capacity and future flows and loads, and recommended upgrades to the liquid and solids treatment train to progressively improve the treatment system. The master planning process includes active customer participation, new collection system and receiving water quality models, as well as WWTP models, and the development of a 40-year capital improvement plan.

**c.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Facilities Planning, Design and Construction of Wastewater Treatment Facility Improvements, Upper Blackstone Water Pollution Abatement District, MA** | 2012 | 2012 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Manager/Officer-in-Charge.** Beginning in 1999 and through 2012, Ms. Madden managed the planning, design and construction of the $180 million wastewater treatment facilities improvement program for the Upper Blackstone Water Pollution Abatement District's 45-mgd facility serving the Greater Worcester, MA area. She served as officer-in-charge for all work performed by CDM Smith for the District during this period. Initially, Ms. Madden managed the preparation of the District's Facilities Plan which recommended upgrades and improvements to the existing wastewater treatment facilities to achieve compliance with the plant's most recent national pollutant discharge and elimination system (NPDES) permit. Critical to the plan is a phased implementation plan to minimize cost impacts on the ratepayers. Management of high flows at the facility through the incorporation of a secondary treatment bypass was also recommended for this facility.

**d.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Design-Build Wastewater Treatment Plant, Joint Base Lewis McChord, Tacoma, WA** | 2016 | 2016 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Technical Advisor.** Ms. Madden served as the senior technical advisor for this new greenfield wastewater treatment facility for the Army Corps of Engineers, designed to achieve stringent nitrogen limits with a 4-stage Bardenpho process, followed by pressure membranes for ultimate reuse. The project also included anaerobic digesters to generate Class B biosolids and heat and power to serve the facility. CDM Smith delivered the project as an integrated design-builder. Design and construction of this new 4.4 mgd facility was completed in two years.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Jonathan Z. Goldman, PE, PMP, BCEE** | Support Services – Hydraulic and Pumps | a. TOTAL | 33 | b. WITH CURRENT FIRM | 33 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Boca Raton, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| ME – Environmental Engineering; BS – Environmental Engineering | Professional Engineer (FL) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Project Management Professional; Board Certified Environmental Engineer; Member, Society of Environmental Engineers; Member American Society of Civil Engineers; Member, American Water Works Association; Member, Water Environment Federation; Member, Florida Engineering Society; Member, Greater Miami Chamber of Commerce Environmental Awareness Committee

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **George T. Lohmeyer Regional Wastewater Treatment Plant, City of Fort Lauderdale, FL** | 2017 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Engineer.** Mr. Goldman was responsible for the design and implementation of a large 80 mgd plant flow by-pass pumping system while the underground process piping between treatment basins was replaced. Mr. Goldman developed the by-pass system hydraulics using WaterGEMS software and worked with the contractor's pump vendor to create the pump system capacity and flow regimes expected, create control strategies to mirror existing sluice gate operations with flow splits to process basins without overloading or underloading the existing biome, and developing piping layouts and contingency plans for the bypass operation.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Design-Build Services for the 2.0-mgd Nanofiltration, Water Treatment Plant, City Dania Beach, FL** | 2012 | 2012 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Program Director.** Mr. Goldman oversaw design and permitting services for the new 2.0-mgd nanofiltration DB process at the City's existing lime softening water treatment plant. CDM Smith completed the design in 12-weeks and obtained the six regulatory permits in the subsequent 12-weeks. The project involved surveying, site plan approval, on-site piping, pretreatment, two 1-mgd nanofiltration skids/frames/treatment system, 6,000 sf (150 feet by 40 feet) with 20 foot eave height building, chemicals, chemical storage, cleaning system, post treatment, HVAC, electrical connections, parking improvements, connections to the wet well, and other ancillary items. The new building provided operator office and laboratory space, and the connection of all instrumentation to one central control center in the new building. Parking, landscaping, and other required services were included. The improvements integrated the new nanofiltration water treatment plant facilities with the then current lime softening facilities and coordinated construction to minimize disruption to current activities. Wiring for computers and other communication needs were included. Construction was in full conformance with the high velocity hurricane zone regulations in the most recent version of the Florida Building Code. The new building obtained LEED® Gold. Since available stimulus funding was on a fast track basis, the City recognized that a DB approach would be needed to meet the funding application deadline. The shovel ready project was recognized by the USEPA for using ARRA funding to benefit the community by providing much needed water treatment infrastructure and creating desperately needed jobs. The project won an Honor Award from the Florida Design-Build Institute of America (DBIA) and the FICE Engineering Excellence Grand Award in 2012.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Retail Potable Water and Wastewater Master Plan, Broward County, FL** | 2016 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Manager/Engineer-of-Record.** Mr. Goldman was responsible for developing a Retail Potable Water and Wastewater Master Plan for a future forecast year of 2040 to address retail facilities within the County's four service areas (known as Districts 1, 2, 3A, and 3BC). As part of this effort, our team developed the hydraulic model of the County's retail potable water, water, and wastewater systems, utilizing ESRI ArcGIS, InfoWater, and InfoSWMM, respectively, to develop a detailed and accurate model. In addition, our team was also responsible for data collection and cataloging.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Timothy A. Verwey, PE** | Support Services – Laser Scan, Drone, and 3D | a. TOTAL | 33 | b. WITH CURRENT FIRM | 29 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Maitland, FL |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Civil Engineering | Professional Engineer (FL, GA, KY, MS, NC, TN, TX, VA) |

| 18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.): |
|---|
| Confined Space Entry |

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED: PROFESSIONAL SERVICES | (2) YEAR COMPLETED: CONSTRUCTION *(If Applicable)* |
|---|---|---|---|
| a. | **Central District Wastewater Treatment Plant Oxygen Production, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2015 | 2015 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Structural Reviewer.** To address the need for Biogas H2S treatment the design team evaluated the H2S concentrations present in the biogas during regular loading periods, as well as peak loads. Ultimately the client chose the short-term alternative, with installation of biological H2S treatment, replacement of biogas pipelines, construction of a new electrical building to power the new biogas treatment system components, and construction of a new Switchgear Building for the Co-Gen facility including replacements for substations 17 and 18. Mr. Verwey provided structural review of the project. | | |
| b. | **North District Miami Dade Secondary Clarifiers, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2016 | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Techincal Reviewer.** Most of the secondary clarifiers (SCs) at NDWWTP developed significant corrosion problems and were well beyond their useful life. Mechanisms in SCs 3, 6, and 8 failed and became inoperable in early 2015 due to significant corrosion and erosion through their center columns. The electrical equipment and the control equipment associated with the secondary clarifiers also reached the end of their service life. An emergency replacement project was implemented to address these failed units. The proposed upgrades for these facilities included upgrades to the mixed liquor flow splitting, secondary clarifier, and secondary effluent concrete piping rehabilitation. Mr. Verwey provided structural review of the project. | | |
| c. | **North District Miami Dade Primary Clarifiers, Miami-Dade Water and Sewer Department (WASD), Miami, FL** | 2017 | Ongoing |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Techincal Reviewer.** The NDWWTP was originally constructed in 1978. This plant has a permitted capacity of 120 mgd and is a secondary level treatment facility. This project included the rehabilitation and/or replacement of system components associated with the primary sludge pump stations, primary clarifiers, odor control systems, yard piping, and air ducts. Mr. Verwey provided structural review of the project. | | |
| d. | **Anastasia Island 5.0 mgd WWTP Expansion, St. Johns County, FL** | 2013 | 2013 |
| | (3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE | | ☑ PERFORMED WITH CDM SMITH |
| | **Engineer-of-Record.** For this $17.9M wastewater treatment plant expansion project, Mr. Verwey served as the engineer-of-record. Project components included modifications to existing structures (influent pump station, chlorine contact tank, and clarifier head house), headworks structure, aeration basins, secondary clarifiers, new chlorine contact basins, masonry buildings (blower/electrical/generator, dewatering), splitter boxes, and chemical containment structures. | | |

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Stewart J. Magenheimer, PG, PMP** | Support Services – Soils | a. TOTAL | 34 | b. WITH CURRENT FIRM | 31 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Boca Raton, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| MSc – Geology; MBA – Business Administration; BSc – Geology | Professional Geologist (FL) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Project Management Professional (PMP)

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*: **George T. Lohmeyer Regional Wastewater Treatment Plant Deep Injection Wells (DIWs) 1 through 5, City of Fort Lauderdale, FL**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2015; CONSTRUCTION *(If Applicable)*: 2015

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Manager and Senior Hydrogeologist.** The City's five DIWs (in service for 40 years) were experiencing reduction in efficiency of 20%. After evaluation, we recommended the City brush the well casing and acidize the well bore hole to increase production back to the original peak performance, saving the City multiple millions of dollars from having to drill a new well. Over the years, CDM Smith has also conducted MITs every five years to satisfy regulatory requirements. Mr. Magenheimer managed the design of surface facilities for injection wellheads and associated monitor wells.

b.

(1) TITLE AND LOCATION *(City and State)*: **South Miami Heights (SMH) Water Treatment Plant (WTP) Injection Well System and Upper Floridan Aquifer Test Production Well Program, Miami Dade Water and Sewer Department (WASD), Miami-Dade County, FL**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2017; CONSTRUCTION *(If Applicable)*: 2017

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Technical Reviewer/Technical Support.** Mr. Magenheimer provided hydrogeological review services associated with the construction of three Upper Floridan Aquifer (UFA) test production wells and one continuous core well for the evaluation of potential yield and quality of groundwater from the UFA at the proposed South Miami Heights wellfield. The project also included the construction of a Class V deep exploratory well with an associated dual zone monitoring well, intended to be converted to a Class I Industrial injection well for the disposal of reverse osmosis concentrate.

c.

(1) TITLE AND LOCATION *(City and State)*: **South Beaches Water Reclamation Facility (WRF) Injection Well Services, Brevard County, FL**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2017; CONSTRUCTION *(If Applicable)*: 2017

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Technical Reviewer.** CDM Smith inspected the wellhead for the DIW at Brevard County's South Beaches WRF, determining that corrosion of the injection casing had occurred. Our team oversaw repair of the wellhead during a scheduled MIT on the well. We also obtained the applicable permits for this project. Mr. Magenheimer provided technical review and technical support services during the lifecycle of this project.

d.

(1) TITLE AND LOCATION *(City and State)*: **Grant Street WRF Hydrogeological Services, City of Melbourne, FL**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2017; CONSTRUCTION *(If Applicable)*: 2017

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Technical Reviewer.** For the City's Grant Street WRF, CDM Smith has been providing as-needed hydrogeological services for the DIW system. We have assisted with design of replacement monitoring wells (saving more than $10M in WWTP upgrades), DIW monitor well data trending analyses, DIW permit compliance and annual EOR summary reports, and MITs. Mr. Magenheimer provided technical review and technical support services during the lifecycle of this project.

e.

(1) TITLE AND LOCATION *(City and State)*: **Stormwater Improvements Preliminary Study, City of Fort Lauderdale, FL**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: 2013; CONSTRUCTION *(If Applicable)*: N/A

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Hydrogeologist.** Mr. Magenheimer designed a hydrogeologic technical evaluation plan and test well program prior to theimplementation of a regional stormwater drainage well construction program.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Stephen L. Whiteside, PE** | Support Services – Auger Cast Piles | a. TOTAL | 44 | b. WITH CURRENT FIRM | 20 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Raleigh, NC |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| Engineer Degree – Geotechnical Engineering; MS – Geotechnical Engineering; BS – Civil Engineering | Professional Engineer (MA, NC, SC, VA, GA, FL, AL, TN, KY, LA, AR) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

Member, Association of State Dam Safety Officials; Member, U. S. Society on Dams; Member, USSD Levee Committee and Dam Decommissioning Committee; Life Member, American Society of Civil Engineers; Member, American Water Works Association

### 19. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED: PROFESSIONAL SERVICES | (2) YEAR COMPLETED: CONSTRUCTION *(If Applicable)* |
|---|---|---|---|
| a. | **Bay County Resource Recovery Facility (RRF), Bay County, FL** | 2005 | 2007 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Geotechnical Engineer.** Mr. Whiteside was the project geotechnical engineer for the geotechnical investigation and design of foundations for the proposed air pollution control structures at the Bay County RRF.

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED: PROFESSIONAL SERVICES | (2) YEAR COMPLETED: CONSTRUCTION *(If Applicable)* |
|---|---|---|---|
| b. | **Raw Water Intake Modifications, Neuse Regional Water and Sewer Authority, La Grange, NC** | Ongoing | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Geotechnical Engineer.** Mr. Whiteside served as the technical consultant for the design and construction of a 400-foot-long, 36-inch diameter pipeline to depths up to 30 feet below grade and an intake structure in the Neuse River. The project included a subsurface investigation program with land and barge drilling. Stephen reviewed driven pile calculations for the deep foundation design (steel pipe piles) for the intake structure and bollards as well as the slope stability analyses for the riverbank re-stabilization. He reviewed the geotechnical design report, geotechnical-related specifications and contract drawings.

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED: PROFESSIONAL SERVICES | (2) YEAR COMPLETED: CONSTRUCTION *(If Applicable)* |
|---|---|---|---|
| c. | **East Lake Park Water Quality Improvement, City of Chattanooga, TN** | 2017 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Geotechnical Engineer.** Mr. Whiteside served as the geotechnical technical consultant for the project that included the construction of a wooden boardwalk as well as two fishing piers in the pond at East Lake Park in Chattanooga, TN. He reviewed the geotechnical recommendations memorandum, geotechnical specifications, and geotechnical-related contract drawings and provided consultation during construction.

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED: PROFESSIONAL SERVICES | (2) YEAR COMPLETED: CONSTRUCTION *(If Applicable)* |
|---|---|---|---|
| d. | **New Steam Tunnel, Chapel Hill, NC** | 2010 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Geotechnical Engineer.** Mr. Whiteside was the geotechnical engineer for the design of a new steam tunnel to replace an existing tunnel at the University of NC in Chapel Hill. The tunnel is 14 feet wide and tall and houses several steam and condensate lines for heating the university buildings. The project included a geotechnical investigation, development of conceptual alternatives, and design and construction of the selected alternative.

| | (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED: PROFESSIONAL SERVICES | (2) YEAR COMPLETED: CONSTRUCTION *(If Applicable)* |
|---|---|---|---|
| e. | **Neuse River WWTP, Raleigh, NC** | 2004 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Geotechnical Engineer.** Mr. Whiteside was the geotechnical engineer for the design of a new headworks and solids handling facility at the Neuse River WWTP in Raleigh, North Carolina.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Gordon H. Miller** | Support Services – Construction Costs | a. TOTAL | 30 | b. WITH CURRENT FIRM | 2 |

15. FIRM NAME AND LOCATION *(City and State)*

CDM Smith – Maitland, FL

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Civil Engineering | N/A |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

N/A

19. RELEVANT PROJECTS

a.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Design-Build Criteria Professional Services for Fire Station No. 113, City of Delray Beach, FL** | 2018 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Estimator.** CDM Smith prepared the Design Criteria Package (DCP) to include a detailed scope, establish the design criteria, performance requirements, and bid and contract parameters for the Project. The Design Criteria Package included details for a new, 28,300 square foot facility to replace the existing 6,000 square foot facility. The programmed space is split over three floors and the DCP includes facility room data sheets for each space within the building, outlining City requirements for room sizes, materials, finish selections, hardware, furniture, special equipment, telecommunication systems, and also criteria for mechanical, electrical and plumbing (MEP) systems, site development, landscaping, utilities services and stormwater management. Conceptual floor plans were developed with the Owner for the entire facility to validate the facility size and to ensure proper functional relationships met the Owner's requirements.

b.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Annual Renewal and Replacement Report, City of Fort Lauderdale, FL** | 2020 | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Estimator.** The City of Fort Lauderdale's contract with the Large Users of the Central Regional Wastewater System (Regional System) requires CDM Smith to prepare an annual schedule that projects facility renewal and replacement costs over a 20-year span. This analysis estimates the amount of funding to be set aside by the City for anticipated renewal and replacement expenditures for the Central Regional wastewater System. We were responsible for identifying areas of improvement to regional wastewater facilities through a review of accounting records, system operation and maintenance manuals, and construction contract documents. Estimating the remaining useful life of major equipment and facilities on the basis of age and observed condition. Developing a schedule for anticipated future equipment replacement. Estimating the anticipated equipment replacement expenditures. Determining the balance of the Replacement and Improvement Reserve Account and determining the amount of additional funding needed for the planned renewal and replacement expenditures over the next 20-years. Calculating annual equipment replacement funding requirements for FY 2019-20. Summarizing the results of the analysis in a written report.

c.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Osprey WRF Nutrient Removal Upgrade Project, City of Titusville, FL** | 2018 | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Estimator.** Multi-disciplinary WWTP modification project to enhance nutrient removal through construction of new step feed treatment basins, electrical building, and alum dosing system.

d.

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Industrial Wastewater Treatment Facility, Pinellas County, FL** | Ongoing | N/A |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Senior Estimator.** The 2.5-mgd industrial water treatment plant (IWTP) located at Pinellas County's Bridgeway Acres Landfill (BWA) utilizes alum clarification, microfiltration (MF), and reverse osmosis (RO) to treat pond water for use by the Waste-to- Energy (WTE) facility on site. However, performance constraints with the existing solids contact clarifier system have restricted the IWTP MF system from attaining its full design production capacity, resulting in issuance of a Consent Order (CO) requiring the facility attain its full capacity in fewer than 24 months. Pinellas County retained CDM Smith to identify a solution to help the County comply with the CO.

# Resumes of Key Personnel Proposed for this Contract

## PART I – CONTRACT-SPECIFIC QUALIFICATIONS

| 12. NAME | 13. ROLE IN THIS CONTRACT | 14. TOTAL YEARS EXPERIENCE | | | |
|---|---|---|---|---|---|
| **Michael P. Picard** | Support Services – Project Delivery Analysis and Recommendations | a. TOTAL | 30 | b. WITH CURRENT FIRM | 30 |

| 15. FIRM NAME AND LOCATION *(City and State)* |
|---|
| CDM Smith – Hartford, CT |

| 16. EDUCATION *(degree and specialization)* | 17. CURRENT PROFESSIONAL REGISTRATION *(state and discipline)* |
|---|---|
| BS – Civil Engineering | Licensed Environmental Professional (CT) |

18. OTHER PROFESSIONAL QUALIFICATIONS (PUBLICATIONS, ORGANIZATIONS, TRAINING, AWARDS, ETC.):

OSHA Hazardous Waste Training; OSHA Supervisor Training; OSHA Confined Space Training

### 19. RELEVANT PROJECTS

**a.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Stuarts Draft WWTP Expansion and Upgrade, Stuarts Draft, VA** | 2010 | 2010 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Construction Director.** Mr. Picard served as the construction director for this $11.7M Design-Build with GMP project, upgrading a 2.4-mgd WTP to an increased capacity of 4 mgd. CDM Smith provided design and construction services for a project for the ACSA in response to a deadline imposed by the State of Virginia DEQ to increase capacity. In addition to increased hydraulic capacity, the upgrade added additional nutrient removal capabilities to meet the nutrient allocations imposed by the Chesapeake Bay Program. The project elements included upgrades and expansion to screening, pumping stations, aeration basins, denitrifying filters, ultraviolet (UV) disifnection, post-aeration, and chemical feed systems. The project notably met all regulatory deadlines two months early, and achieved final completion six months ahead of schedule.

**b.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Tunnel Dewatering and Enhanced Clarification Facility, DC Water, Washington, DC** | 2018 | 2018 |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Executive/Constructability Reviewer.** Mr. Picard served as a Joint-Venture Board of Control Member for a $208M greenfield 225-mgd Combined Sewer Overflow Pump Station and Wet Weather Treatment Facility. CDM Smith, as an equal joint-venture partner, was selected to provide design-build services to implement the TDPS/ECF project, which involves the design, construction, and commissioning of a 170-foot deep by 132-foot-diameter pumping station and a wet-weather treatment facility to convey and treat CSOs. The treatment system has an initial treatment capacity of 250 mgd (Phase 1) and include provisions for future expansion to 500 mgd (Phase 2). The treatment process includes fine screening, vortex grit removal, Actiflo® ballasted flocculation, and disinfection with sodium hypochlorite and dechlorination—the largest Actiflo installation in the United States for wet weather treatment. Serving in this role, Mr. Picard provided executive-level oversight and performed constructability reviews throughout the design and construction phases of this design-build project. Through coordinated scheduling, with the construction team and the quality control team, the required system testing was accelerated to save six weeks of time. The project met the EPA consent decree date and was successfully put into operation ahead of schedule.

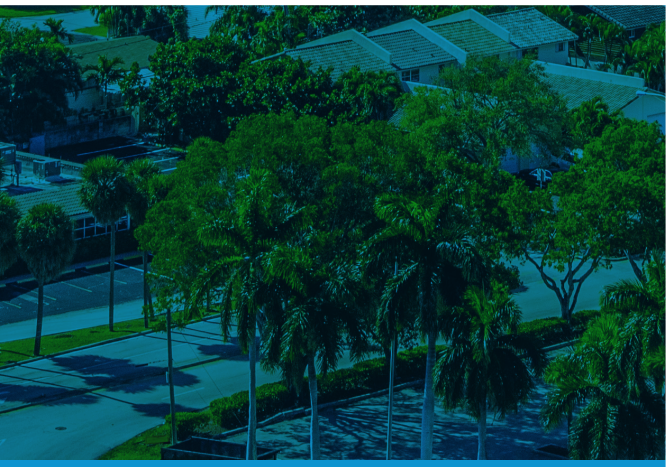
**c.**

| (1) TITLE AND LOCATION *(City and State)* | (2) YEAR COMPLETED | |
|---|---|---|
| | PROFESSIONAL SERVICES | CONSTRUCTION *(If Applicable)* |
| **Industrial WWTP Upgrades, Naval Air Station, Jacksonville, FL** | N/A | Ongoing |

(3) BRIEF DESCRIPTION *(Brief Scope, Size, Cost, etc.)* AND SPECIFIC ROLE — ☑ PERFORMED WITH CDM SMITH

**Project Executive/Constructability Reviewer.** Mr. Picard served as QA/QC for this $16M lump sum construction project to rehabilitate and improve two existing WWTPs and four ancillary buildings servicing the Fleet Readiness Center of Naval Air Station in Jacksonville. Industrial wastewater is generated from aircraft and component chemical paint stripping, cleaning operations and plating/conversion coating rinse tank equipment. Mike has been responsible for providing constructability reviews for the plans and specs. Both treatment plants were in operation during construction and CDM Smith had to perform all work while maintaining plant operations on a very fast nine-month on-site construction schedule. This included very close coordination and planning with the government to minimize outages as much as possible and schedule them in advance during off-peak periods. Ultimately, 20 major outages were executed on schedule without impact to operations.

# SECTION 5



## Approach to Scope of Work

# Section 5: Approach to Scope of Work

## Understanding of City's Needs, Goals, and Objectives

The City of Fort Lauderdale (City) is seeking a qualified, experienced, and licensed firm to provide Construction Engineering and Inspection (CEI) Services for the GT Lohmeyer Wastewater Treatment Plant (GTL WWTP) Replacement of Oxygen System. In our role as CEI, CDM Smith will coordinate our scope of services with the awarded design-build firm (DBF), PCL Construction, on behalf of the City.

The GTL WWTP was constructed in the late 1970s. The facility includes pretreatment (screening and grit removal), two biological reactors (four trains), 11 secondary clarifiers, two chlorine contact chambers, an effluent screen, two sludge holding tanks, and seven belt filter presses for dewatering of solids. Solids are hauled to an offsite facility or to a landfill and treated effluent is pumped by an effluent pump station to five deep injection wells. The site is constrained in an urban environment with development on all sides of the facility which requires compliance with strict noise and vibration abatement requirements.

The GTL WWTP utilizes a high purity oxygen activated sludge (HPOAS) process that generates high purity oxygen onsite via a cryogenic oxygen production plant. The generated oxygen is stored as liquid oxygen (LOX) and fed to the oxygenation trains as a gas. The existing oxygen production facility dates to the original construction and is at the end of its useful service life, inefficient, and difficult to maintain.

A new VPSA facility, to be constructed west of the pretreatment building, consists of the VPSA (process equipment, switchgear, and control) rooms to house two 40-Tons Per Day (TPD) trains. The buffer tank for Train 1 will be located outside adjacent to the VPSA building. Additional space for a second buffer tank shall be allocated to accommodate future expansion and installation of a second 40-TPD train. The existing main air compressor space will be replaced with a new LOX electrical building. The DBF has proposed dual-package approach to expedite the project: Package 1: a foundation package and Package 2: a process package for permitting and construction. The foundation package will be comprised of soil work, underground electrical and plumbing, the building foundation and superstructure, and the architectural finishes. The process package will include all the equipment, HVAC, remaining underground conduit and piping, and the demolition plans of the existing oxygen system. The total contract duration is 808 calendar days plus a one-year warranty period.

The City has selected the DBF which will hold complete responsibility for the design, permitting, and construction of all aspects of that project. Completed construction documents are to be developed by the selected DBF and follow each criterion. Additionally, the selected DBF will carry out each aspect of construction requirements and as regulated by each permit.

CDM Smith is the CEI firm best suited to serve you and represent the best value for the City. With 19 years of experience at the GTL WWTP as the City's general wastewater consultant for electrical, controls, and existing oxygen production facility. CDM Smith recently completed the pre-construction phase for process equipment, electrical, and controls with your same DBF on a larger and new 180-ton per day (TPD) contained oxygen VPSA Facility at the Miami Dade Water and Sewer 143 mgd Central District WWTP. CDM Smith, on our own, is also a DBF firm and CEI firm with extensive policy and procedures to smoothly transition our knowledge into this important effort by the City. We know this business and we know it well.

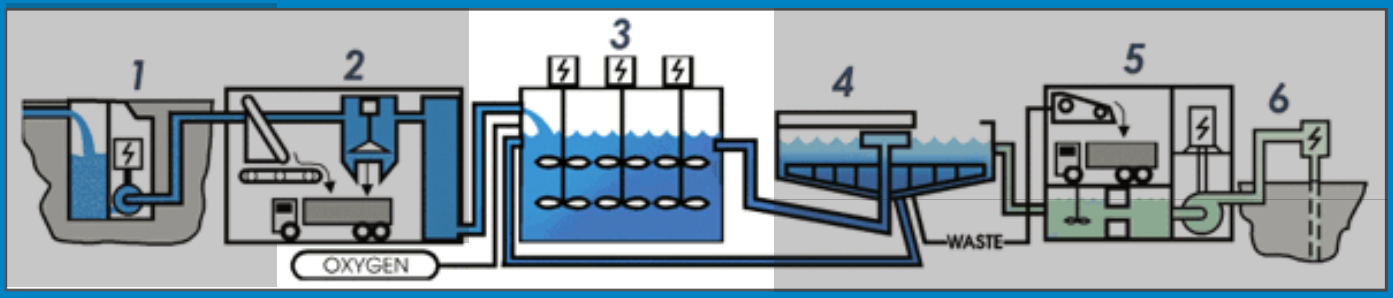
## CDM Smith's Experience with GTL WWTP's Existing Oxygen System

In 1978, CDM Smith designed the original HPO system as well as recent improvements at the GTL WWTP. The WWTP provides secondary treatment using high-purity oxygen activated sludge followed by deep-well injection, through the application of five injection wells located approximately one-mile south of the WWTP. We will be able to use what we learned from the original project for the CEI of this new project.

### **The GTL WWTP High-Purity Oxygen System:** Adapting to Stringent Space Limitations at the GTL WWTP, CDM Smith Designed a High-Purity Oxygen System that Generates Pure Oxygen On-Site

While many WWTPs have been constructed on extremely large land areas designed to accommodate the installation of many wastewater treatment tanks and vessels to utilize air as the oxygen source, the GTL WWTP has limited space available to it. As such, CDM Smith designed cryogenic oxygen generators that generate high-purity oxygen. By installing generation equipment designed to create an environment of air that is over 95 percent oxygen, significantly fewer tanks were required since the microorganisms would be living in a highly oxygen-rich environment. By using high-purity oxygen, as opposed to conventional aeration, the WWTP needed to construct only two concrete reactors, as opposed to numerous open-air tanks.

Following pretreatment, the wastewater undergoes biological oxygen-activated treatment (3), which occurs when it is combined with cultured microorganisms and pure oxygen at the head of the reactor. The microorganisms ingest organics and grow within the reactor when vigorously mixed. This water is then delivered to a clarifier.




## Overall Approach to Accomplishing the Project

The GTL WWTP project needs a CEI team led by a project manager and construction manager with broad and extensive experience at the GTL WWTP supported by local resources who will provide responsive, supplemental assistance for specialty inspections and technical assistance. Uniquely, the CEI team needs engineering design resources that understands your existing cryogenic oxygen production facility and technology; and understands the new VPSA technology to assign and recognize importance of critical milestones. As such, this project also requires a ***CEI team that offers engineering design and inspection resources locally, which will deliver added value from direct access and greater familiarity with GTL WWTP facilities, policies, preferences, and procedures;*** and enhanced responsiveness to provide CEI services during general, pre-construction, construction, and post-construction phases.

In our role as CEI, we will evaluate the merits of the DBF's proposition, determine their benefit to the City while always protecting the City's interest. Specifically, PCL Construction described value added ideas and recommended sea level rise hardening that they want the City to consider during the pre-construction phase. We have done our homework and fully reviewed the PCL Construction's submittal to the City and ***our approach will quickly synch with the DBF to save time and money for the City for a seamless integration and collaboration of CEI services*** during general, pre-construction, construction, post-construction phases execution approach. In our role as CEI, we are the two-way bridge between City and DBF.

**Experience that Matters –** Our strongest asset to the City is our entire team's unmatched experience with local design-build and facilities projects, including most recently the VPSA for CDWWTP with Miami-Dade Water and Sewer Department and the City of Boynton Beach East Water Treatment Plant Project. CDM Smith has experience as both design criteria package firm,

design build firm, and CEI firm providing value to our clients in each and every role we perform.

**Dynamic Cost Modeling/Tracking –** Our experience serving several municipalities on projects has allowed us to develop an in-depth understanding of not only the documentation required for design-build projects but also the compliance requirements with pricing and how the cost is developed and tracked throughout the project. Our understanding will provide the City with cost control and best value. CDM Smith will focus on the DBF's adherence to City design criteria and building department compliance through project close-out.

**Contractor's Perspective –** CDM Smith brings to the City a contractor's perspective and tools through our construction arm, CCI. CCI is a wholly owned subsidiary of CDM Smith that executes construction throughout the United States, with more than $1.1B in construction in the past 10 years. This construction expertise means CCI will bring a contractor's perspective to the review of the DBF cost estimates and constructability reviews of the plans and specifications' key aspects of the design-build approach include a requirement to "design to budget" at several intermediate milestone points in the design process, a schedule driven process, and the integration of a contractor's perspective into the design process. Our CEI approach to design-build takes proactive steps through a collaborative effort between the us, City, and the DBF to control costs and schedule while minimizing risk through the following actions:

- Integrate design and construction through pre-construction services during design development by providing constructability input throughout the design process.
- Support the DBF to "design to budget" as the plans and specifications are further developed beyond the current design-criteria package level.
- Provide independent contractor-developed (CCI) cost estimates at 60, 90, and 100 percent designs to compare with DBF developed cost estimates.
- Conduct independent constructability reviews at 60, 90, and 100 percent completion points to lower the risk of constructability problems with the final design.
- Include, as appropriate, owner-controlled contingency so that the City is able to maximize the project value and reduce uncertainty and risk during construction.
- Collaborate between the City and the DBF to deliver the design through pre-activity meetings and collaboration between all stakeholders.

## Minimizing Workflow Disruptions Caused by COVID-19 Pandemic

Our team has proactively anticipated project complexities surrounded by the COVID-19 pandemic, and our approach presents our team's strategies to work through these challenges so that the project is not impacted.

CDM Smith is well equipped to perform in this environment. The processes and tools we have in place allow us to continue to deliver excellence for you while maintaining the health and safety of your staff, our staff, and the communities we serve.

### Health and Safety During a Pandemic

We have implemented mandatory work requirements consistent with state and local guidelines for working safely in this COVID-19 environment. We have asked every employee to exercise vigilance in personal activities, follow client and partner recommended health and safety procedures at their offices or on job sites, comply with all government issued directives and take appropriate work and personal risk reduction measures.

### Field-Based Services

On-site social/physical distancing is critically important for compliance with shelter-in-place mandates and protecting our field personnel. Best practices we have employed on recent construction projects include:

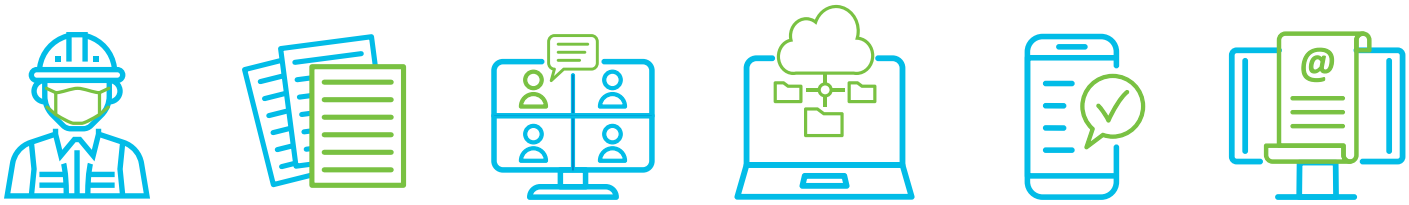
- Defining and communicating to the DBF and the City's essential staff protection protocols
- Requiring Contractor's health and safety plans to address social/physical distancing to protect their staff and avoid contact with other on-site staff

### Meeting in a Virtual Environment

CDM Smith's workforce is highly functional at working remote and our team has virtual conferencing tools and skills to effectively manage meetings, workshops, and trainings. We are prepared to employ these practices for the City:

- Publishing a detailed meeting agenda with stated objectives in advance of the meeting, along with a concise statement of meeting logistics
- Providing a concise briefing, like a "safety minute", at the beginning of each virtual meeting to refresh participants on the virtual environment

## With the unknown circumstances surrounding COVID-19, the CDM Smith team will work with the City to effectively deliver your project through multiple methods of communications, safely and as appropriate.



SAFE WORK PRACTICES | WRITTEN DOCUMENTS | VIDEO CONFERENCING & SCREEN SHARING | INTEGRATED CONTENT AND DOCUMENT MANAGEMENT | TELEPHONE / CONFERENCE CALLS | EMAIL

- Use of annotated documents and graphical representations to convey meeting content and guide discussions
- Assignment of a meeting facilitator, subject/topic lead(s), and note taker to ensure meetings hold to the allotted time, everyone is provided opportunities to contribute, and discussions and decisions are documented
- Sharing of work surfaces including screens and virtual "whiteboard" for engaging meeting participants and promoting collaboration

# Proposed Vision, Ideas, and Methodology

## Vision

Our recent experience as the design criteria professional for the Miami-Dade CD WWTP VPSA and PCL/Wade-Trim as the DBF, which is just now wrapped up the pre-construction (design-package) phase, allows us the "next step" knowledge for the City and the very real sensitivity for the need to take over and follow each minimum requirement from the prior City-consultant efforts, which are now a matter of contract between the City and DBF. Coupled with the City's culture of selecting an independent or third-party to perform CEI services, CDM Smith's experience with VPSA and knowledge of the design-build process will provide the best value to the City

Our vision in the role as CEI is to proactively support and advise the City in project related matters, oversee the work of the DBF, and coordinate and communicate with the City PM. ***We see our role as getting out in front of the next steps with planning and pre-activity meetings, we will not just "witness" what happened last week.*** We will provide a full range of services including construction, engineering, and inspection services; monitoring of the design completion; and oversight of the construction contract process. CDM Smith understands the City's goals under this CEI contract, and our team is available, local, and qualified to provide quality solutions.

## Value-Added Ideas

**Medium voltage conduit runs with horizontal directional drilling –** CDM Smith brings our 19-years of first-hand knowledge of the project site, diameter, and depths of existing underground force mains and medium voltage conduit, storm water, and other utilities in the path of the DBF proposed conduit routes. Although horizontal directional drilling is a good idea, CDM Smith knows that some areas may still need to be open cut. Based on our past experience, well-point dewatering is generally not needed due to the water table level. Localized open-hole dewatering is a less costly option.

**West perimeter wall foundation –** CDM Smith served the City in 2012 with CEI services during an open-cut for a nearby 48-inch diameter, City project P11742, where a wide wall-footer was exposed on this perimeter wall. Our idea is having the DBF spot locate the existing footer-width prior to finalizing in their auger cast lay-out foundation design package thus reducing risk and a better execution of the work.

**Auger cast piles foundation –** We are experienced with auger-cast pile design and construction at GTL WWTP, most recently for two of the existing LOX storage tanks. Our subconsultant, Nutting Engineers, provided pre-construction and post-construction geotechnical reports and observation of auger-cast pile installation during construction for that project. Our idea is to advise the City-DBF team accordingly; with City oversight by our geotechnical sub Nutting Engineers.

**Risk Register –** Potential risks are identified, and action plans are set in place for addressing all concerns at all stages of the project. This allows for all risks to be on the table

and for the various parties to determine who owns the risk. Problem resolution ladders are created to allow for issues to be elevated when necessary to facilitate timely and clear decision making, at the lowest level possible.

**ACTION PLAN**
TO ADDRESS CONCERNS AT CONSTRUCTION KICKOFF MEETINGS

**IDENTIFY**
KEY PERFORMANCE INDICATORS, POTENTIAL RISKS, AND OBJECTIVES

**DEVELOP ROADMAP**
TO ESTABLISH PROJECT SUCCESS

**COMMUNICATE & COORDINATE**
WITH THE CITY OF FORT LAUDERDALE, DBF, AND YOUR CEI TEAM

**Partial DBF Risk Register with CDM Smith as CEI notes:**

| DBF – Risk Impact | DBF – Probability | DBF – Notes | CDM Smith as CEI – Notes |
|---|---|---|---|
| Location of all underground elements; relocation of electrical utilities need to be well documented and located; failure to do so could result in lost time and added cost. | 10% | Significant, or multiple, active utility installations may be encountered and must be considered. | CDM Smith's 19-years of open-cut excavation knowledge at the GTL WTTP will mitigate this risk to the City. |
| Clean up and mitigation process could result in impact on design and construction schedule; contaminated groundwater will likely create a stop work condition and require collection and possible remediation activities, which will create lost time and added cost. | 30% | Presence of historical contamination on the adjoining site was identified in the FDEP database. | CDM Smith has mitigated this issue by not moving contamination when dewatering. Use localized open hole dewatering thus avoiding well-point dewatering. |
| Schedule delays due to extended FTL and Design Criteria Professional reviews may impact design schedule and acceptance. | 90% | Assumes acceptance of the phased submissions requires significant exchange and re-submission for each phase. | As CEI, CDM Smith has recently reviewed 46- VPSA pre-construction shop drawings for Miami-Dade Oxygen Process Mechanical, Electrical and Controls shop drawings. Not once did we delay the DBF. CDM Smith understands the technical intricacies of this project and will greatly mitigate this risk for the City. |

| DBF – Risk Impact | DBF – Probability | DBF – Notes | CDM Smith as CEI – Notes |
|---|---|---|---|
| Failure to reconcile current standards and specifications could result in significant lost time and expense. | 50% | Each VPSA manufacturer is unique in their design and function, so there inevitably will be variances that will need to be resolved. | During the VPSA for Miami-Dade oxygen project we worked and collaborated withyour selected DBF on this task. We are best suited to resolve functionality variances. Not once did we delay the DBF. We will do the same for you on your project. |
| Failure to reconcile current VPSA standards and specifications could result in significant lost time and expense. | 50% | The RFP specified spec and performance criteria that is not universally attainable from all accepted equipment sources, necessitating acceptance of variances from the DCP. | Similar to above item. CDM Smith's up-to-date technical experience and knowhow to review performance criteria variances with a fresh perspective serve the City well.. |
| Design changes can result in delays if they occur out of sequence with the phased approval which can lead to lost time and added expense. | 50% | The intent is to allow for sequential review and acceptance, and understanding that we do not return to design issues after a phased submission has been accepted. | In our role as CEI, we have in-house design-build contractor staff on the team who are very familiar with this "freeze" the design concept, and as such we are uniquely skilled at working within this risk constraint to the benefit of the City. In fact, we fully recommend this approach to control project time and budget. |

**Other factors to consider:**

- DBF recommends "If necessary, a new topo- survey integration will be conducted to identify visible fixed-site features, rim elevations, storm sewer inverts, and trees and other structures that may impact the construction of the proposed facility and pipelines." ***CDM Smith suggest this be performed and not just be a recommendation.***
- Geotechnical investigation is 40 years old and with a history of a release from neighboring petroleum storage site this along with contamination testing is key. DBF addresses replacement of inadequate fill and testing for contamination. This will need to be closely monitored in the field.
- Noise abatement is being addressed, DBF mentions additional acoustical barriers. CDM Smith has applied sound curtains in projects where we have served as the DBF and found this field measure to be highly effective in noise abatement and a good neighbor policy.
- Additional risk factors that could be discussed are Minimizing Workflow Disruptions Caused by COVID-19 Pandemic, staffing disruptions, and minimizing change orders and claims avoidance.

## Methodologies

### Health and Safety

CDM Smith's health and safety (H&S) program is based on the principle that people are our greatest asset, accidents and injuries are preventable, and everyone is responsible for safety.

We take safety very seriously, especially on construction sites close to businesses and residential neighborhoods. CDM Smith's corporate safety program was developed to comply with all OSHA requirements (29 CFR, Park 1910, and 1926) along with the specific needs of the City.

Using our corporate safety program as a guideline, our CEI team will develop a Site-Specific Health and Safety Plan (SSHASP) for each of the projects we are assigned under the City. This plan identifies responsible individuals, communications procedures and safety audit procedures.

It provides communication protocols during times of emergency. It is shared with each of our subconsultants who will provide service on a given project. Each subconsultant is also required to have as their own safety program and plan.

The DBF will be required to submit their own safety plan, which will be reviewed for comprehensiveness and completeness and compliance with the City Health and Safety plan before on-site work can be allowed to commence.

Our field inspectors will monitor and enforce the DBF compliance with safety requirements and will work with the contractor staff to promote a safe overall environment for workers, visitors, residential neighbors, and adjacent businesses.

## Coordinating, Planning for, and Minimizing Downtime of Operating Facilities

This oxygen system project touches a lot of operating facilities and systems that must be kept operational throughout construction or have limited windows of shutdown available. The complexity and scope of the projects emphasize the importance of early planning and following the DBF. CDM Smith recommends regular meetings be held to develop shut-down, tie-in, lock-out/tag-out, job hazard analysis procedures, and detailed work plans. These can be part of the routine progress meetings, but separate startup and commissioning meetings is recommended.

## Managing Change Orders, Claims and Dispute Avoidance

As your CEI team, CDM Smith will work closely with the City's project manager to monitor construction progress and expenditures so cash flow and budget targets are well understood. Change management will be a priority for our CEI team.

A major focus of our change management approach is to use direct and transparent communication with the City and the DBF.

Because the foundation of our partnering approach is collaborative, our focus is not on "disputes". Instead, the focus of the team is on the success of the project. Our experience shows that when these approaches are followed, working relationships remain positive, the project goals can be met, and the potential for claims is greatly reduced.

Specifically, CDM Smith's approach to change management and claim and dispute avoidance follows these best practices:

- Minimize change orders and avoid claims through our collaborative and proactive approach—following project-specific change management procedures and protocols to quickly identify and resolve all issues in a timely manner
- Develop a thorough understanding of contract documents so that changes can be assessed in a timely manner; minimizing delays and associated prospective damages
- Monitor construction activities closely by holding bi-weekly meetings to review progress and tracking the schedule to proactively identify, mitigate, and track potential changes
- Collect and evaluate all facts in an objective manner so that each party's position is fully understood. An unbiased assessment of cost and schedule impacts will allow the City to approach the resolution process from an informed position
- Provide fair and reasonable valuation of changes, including merit and contractor entitlement
- Process change orders quickly, obtain independent estimates, and negotiate in good faith
- Define and execute strategy for dispute or claim resolution
- Document each step thorough detail, including justification of the change and record of negotiation
- Facilitate processes for approval by aiding City's project manger with the preparation of supporting documentation

## Start-up, Testing, and Commissioning

Process equipment factory testing, vendor certifications, commissioning and field performance testing are an essential element of the Project. EVPSA and their ancillary systems are complex and require testing, commissioning, and performance testing.

Process controls must be complete and operational according to well-detailed technical specifications.

CDM Smith takes a proactive role in scheduling pre-submittal meetings, tracking required time-sensitive submittal packages, including I/O lists, loop drawings, process descriptions, performance test procedures, testing checklists, training classes, O&M manuals, etc. A tracking matrix will be developed by the DBF and us to assure that all contract requirements are identified, and testing is completed in a timely manner.

## Management Systems

The City of Fort Lauderdale's Public Works Department mission is committed to providing the highest quality of public services for its neighbors to build community through its strategic management system through its Environmental and Sustainability Management System (ESMS). The standard ISO 14001 is an environmental management certification that is designed to assist the City as they develop in-house environmental management systems. This standard is based on a model of continual improvement (plan-do-check-act), which differentiates it from the fixed criteria that must be met to be awarded ISO 9001 accreditation. The City achieved its renewed certification circa 2019 for ISO 14001 and ISO 9001. This VPSA effort falls under the City's ESMS 14001 umbrella for electricity reduction.

## Quality Management System

### Plan Quality

CDM Smith's quality processes will begin early in the lifecycle of any projects will be tailored to the City's scope of work to meet the project requirements and our quality management system.

### Quality Assurance

CDM Smith's QA process will focus on prevention and reduction of errors and omissions, conformance to standards and expectations, open-mindedness for innovation and creativity, monitoring and controlling quality checks and milestones, and providing value enhancement.

### Quality Control

CDM Smith's QC processes will continuously monitor quality through every phase of the project lifecycle, controlling the quality of our deliverables through quality checks and milestones to ensure they align with the City's needs and expectations.

The CDM Smith Quality Management System (QMS) is a living document that we update as needed to address new technologies, new and changed legislative and regulatory requirements, and evolving industry trends and standards via our Technical Knowledge Management (TKM) system. Each technical service provided by CDM Smith has a Community of Practice (CoP) within the TKM, and each CoP has Senior Technical Advisors (STAs) and Guidance Committee (GC) members responsible to author, review, and accept best-practice documents and standardized forms and logs for efficient and consistent implementation of the QMS by their CoP members. The CDM Smith team assembled for this project includes several STAs and GC members from their respective CoPs, including John S. Chandler (Construction Management CoP Leader) and Tommy Floyd, DBIA (Quality Control, Quality Assurance (CoP Leader), with the experience, know-how, and commitment to deliver exceptional quality management to the project.

CDM Smith will open our QMS toolbox at the outset of the project, conducting our Project Quality Management (PQM) kick-of meeting that we encourage City and DBF to attend. The PQM meeting provides a clear sense of common purpose and understanding among project team members by first establishing a clear understanding of the purpose, objectives, and expectations for the project, then identifying the important factors to ensure a successful project, and finally developing a plan of action with assignments and schedules.

Quality procedures we will implement for the CEI services during general, pre-construction, construction, post-construction phases of this project include, but are not limited to:

- Document control and document management
- Pre-construction and progress meetings
- Schedule of values reviews
- Construction schedule reviews
- Contractor payment application reviews
- Submittals processing
- RFI processing
- Inspection procedures specific to relevant trades
- Daily reports and non-conformance reporting
- Change management
- Record drawings and contract close-out documentation
- Substantial completion, project completion, and final payment

## Proposed Approach

Our team has a strong background in the management of construction management contracts and brings expertise in oversight of design-build projects. Our CEI approach is to use management processes, tools, and skills developed and implemented on the first day of the project to set the stage for the City to successfully implement this design-build project through completion of the term of their contract. Our plan to fulfill the requirements of the CEI RFQ is to provide support to the City with various design-build options, assist with execution of the contract and negotiation with the DBF, and to monitor and administer throughout the course of the project. Building collaborative working relationships with City staff and the DBF at the very beginning will help to establish goals and objectives; understand City processes and procedures; provide recommendations for tools, processes, and systems that will support a well-executed project; improve project progress; reduce overall costs; and develop future opportunities for design-build contracts.

We will be a trusted CEI firm for the City to help oversee implementation of the DBF. How the CI services are executed and coordinated is important to delivering the project within budget, and meeting schedule milestones and quality requirements.

Our CEI approach is founded on proven key success factors, which are summarized below:

| Key Success Factor | Proven CDM Smith Best Practices | Benefit to The City of Fort Lauderdale |
|---|---|---|
| Collaborative communication | Utilize direct, clear and unambiguous written, electronic and oral communication; hold partnering sessions at start of construction; hold weekly progress meetings coordinate with other projects on site. | Steady flow of accurate information to maintain project control and to foster collaborative solutions to project challenges. |
| Constructability reviews | Review documents for impact to the plant, completeness, feasibility and work phasing. Identify risks early, potential discrepancies, and ambiguous language. | Comprehensive contract documents that help to provide efficiency, more clarity, and reduced incidence of change orders. |
| Quality oversight | Provide highly qualified resident engineers and inspectors to document and inspect the work as it is constructed; contractor performance, and conformance with requirements; identify and report all deficiencies. | Provides early identification of any defects in construction and allows them to be addressed before impacting system performance, resulting in best product quality. |
| Proactive management of document control | Provide document proven management system and document control protocols for all construction documents. | Ease of document retrieval, assurance that all construction information is available, and provides a verified basis for forensic analysis and audits. |
| Schedule coordination | Review and analyze DBF baseline schedule, review monthly updates to identify delays, resource constraints, or schedule conflicts. Work with contractor to develop recovery plans. Foster collaborative communications between project teams and with plant operating staff. | Early identification of any potential schedule delays, identification of conflicts with proposed system shutdowns and tie-ins, and facilitation of keeping project on schedule. This approach will minimize negative impacts to other concurrent projects and plant performance. |
| Effective submittals and request for information (RFIs) review process | Work with DBF to effectively follow submittal and RFI review processes to ensure timely responses; log and track status of all reviews. | Minimizes chance of delays in the project as a result of submittal delays; identify if any required submittals or RFIs have been missed. |

| Key Success Factor | Proven CDM Smith Best Practices | Benefit to The City of Fort Lauderdale |
|---|---|---|
| Maintenance of plant operations (MOPO) | Project specific requirements of O&M staff are identified in the Bid Documents and discussed at the Pre-Con meeting. Start-up and testing planning early in the project. | No surprises: thoughtful collaborative approach with your O&M to required shutdowns, by-passes and tie-ins. |
| Safety | Specify GTL WWTP safety requirements to DBF and sub's and, review DBF's site safety plan for site-specific concerns, followed by routine observation. | No lost time incidents or accidents that could cause delay or effect employee morale; everyone returns home at the end of each day. |
| Change management | All potential changes are identified in writing by the DBF, and evaluated in a timely manner for merit, cost evaluation to ensure changes are priced and mitigating options fully investigated. | Creates more clarity and reduces-incidence of disputes while reducing the costs and impact from change orders, negative outcome from change orders is mitigated and minimized. |
| Claims and disputes avoidance | Initiate partnering and collaborative environment; resolve issues in a timely manner to enable DBF to execute work in efficient manner. | Reduces costs and schedule risks associated with work arounds or rework. Provides added legal protection to the City. |

### We offer the following approach highlights:

CDM Smith understands the challenges facing the City relative to executing this design-build project with limited staff, hard budget, an aggressive schedule, and critical infrastructure. The two most critical issues that present the greatest risk to the success of the project that we can control are cost and schedule. Cost and schedule are the two factors that typically can be addressed most effectively by this alternative project delivery approach. The critical factors that make for successful oversight and management of the VPSA facility via design-build delivery include:

- Early and frequent coordination with stakeholders to ensure that the design and construction meet the requirements of the City
- Identification of risks and hazards and implementing health and safety measures in the design to mitigate them
- Compliance with applicable OSHA, NFPA, and FDEP regulations
- Compliance with code requirements for sound, vibration, hurricane and tidal surge
- Continually monitoring and administering the design and construction processes to ensure compliance with the City's requirements and with the project schedule and budget
- Continually monitoring for proper documentation and implementation of materials and methods of construction
- Construction monitoring to ensure that the work is in accordance with the approved design
- Coordination of construction activities to maintain access and functionality of existing, operating facilities
- Proper testing and commissioning of each system and thorough training of City personnel prior to acceptance and occupancy by the City
- Being a good neighbor by minimizing impacts to surrounding neighbors, businesses, and traveling public

CDM Smith has assembled an experienced team that will manage these critical factors and deliver a successful project via active communication with the City and the DBF.

Communication is the foundation of and serves a vital role in managing costly conflicts, change orders, and claims. Formal procedures make for an effective and consistent organization. CDM Smith will support the development of robust

communications to provide the City with the foundation for the collaborative environment required to meet or exceed the City's objectives. In order to keep each stakeholder well informed of the status and progress of the projects, routine performance tracking and reporting is planned to allow the City increased control over schedule slippage and knowledge of concurrent projects.

Our management team will:

- Coordinate with our engineering services team to review documents, designs, and deliverables for accuracy, quality, and adherence to the design criteria package.
- Engage YOU in decision making and progress meetings.
- Review, process, and approve in coordination with the CEI staff, RFI's, shop drawings, pay applications, and so forth, within required time limits.
- Maintain a complete and accurate set, in coordination with the City, of deliverables, submittals, meetings, and project documentation.
- Have overall control and management of the project as your representative.

The following summarizes our role as CEI, and our approach to deliver.

# How CDM Smith Delivers

## CEI Senior Constructability Lead

**John S. Chandler** brings to this project substantial experience in the construction and construction management of your wastewater facility, both as a Contractor and Consultant, serving as foreman, superintendent, and project manager during his careers. This diverse experience gives John the unique ability to evaluate the Contractor's methods for compliance with the contract's technical requirements as well as the ability to evaluate the Contractor's allocation of resources and planning and construction administrative efforts to ensure they meet the contract's completion milestones.

As your constructability lead, John prioritizes the two following principles:

1) Ensuring the DBF's materials and workmanship meet or exceed the quality requirements of the Contract

2) Identifying and mitigating impediments that threaten to increase the contract price or the contract times, without compromising quality

Disputes cannot always be avoided in construction and can become impediments to the detriment of all parties if allowed to go unresolved. Our team is committed to minimizing disputes and, if a dispute does arise, are equally committed to facilitating timely, effective solutions and mitigating cost overruns and project delays. Both CDM Smith and our subs have local and nearby inspection and engineering resources needed to successfully deliver this project.

## CEI Lead Architect

**Michael T. Alford, AIA, LEED® AP BD+C** will be the lead architect for the pre-construction and construction phases. He will be supported by our engineering disciplines including civil, structural, HVAC/plumbing, electrical, and instrumentation. During pre-construction, Michael will work with our project manager and will oversee the DBF's architect. Our engineering team will conduct reviews of the plans and specifications at several design stages to ensure compliance with the design criteria package. In addition, this team will be thoroughly involved in the construction phase as well, as there are many critical items specific to the construction of the VPSA building and LOX building that must be verified to ensure it operates smoothly from day one. During cost development, equipment procurement, and construction, our engineering team will work with the City to ensure consistency with the City's overall goals of the project.

## CEI Project Manager

CDM Smith has assigned **Timothy J. O'Neil, PE, CCM, BCEE**, a professional engineer and certified construction manager, as the CEI project manager to oversee supervising engineering and inspection components, working with both the City PM and DBF team. He will oversee compliance with the design criteria package and mobilize the engineering support for RFI responses, shop drawing review, and cost development. Tim's familiarity with the project as project manager during various City project associated with the existing oxygen production facility will ensure that nothing "falls through the cracks". In addition, Tim's experience in this role for other municipalities demonstrates his success at managing the engineering side of a successful design-build project as the City's CEI representative. For the past 19 years, he has served as Project Manager of the City's previous General Wastewater Consulting Contracts. He knows your utility, he knows your preferences and most importantly he knows you.

## CEI Construction Manager

CDM Smith has assigned **Alexander G. Chinnery** as the CEI construction manager. Alex has extensive experience in providing resident compliance services on multiple construction projects. He will be responsible for surveillance of the DBF's compliance with Construction Contract requirements. With backgrounds in engineering and construction, he is familiar with design development, construction documents, various phases of construction,

construction inspection, materials sampling and testing, administrative activities, and compliance documentation requirements. CDM Smith's CEI senior field inspector will work closely with the Alex to maintain the appropriate files, keep all related documents and correspondence accurate and up to date; attend each compliance review and furnish the complete project files for review; and assist the City and DBF project manager's as requested.

## CEI Senior Field Inspection

CDM Smith has designated **David M. Mastran** to be the senior in the field for inspections. He will assist our Construction Manager in carrying out contract administration responsibilities at the site. David is the City's agent in the field. He will act as directed by and under the supervision of Alex and will confer with Alex regarding any actions taken. His 44 years of architectural experience brings attention to detail, quality adherence, and will support quick decision-making. He will:

- Oversee the construction phase process with monitoring and administration
- Check the Contractor's schedule(s) (i.e. baseline(s), revised baseline(s), updates, as-built, etc.) for compliance with the contract documents
- Monitor DBF compliance with specifications and special provisions of the Construction Contract
- Assist the punch list items
- Assist with training and review of systems after occupancy

## CEI Administration

Construction administration services are key for any construction project and work we do on a day-to-day basis. **Beth E. McArdle** will be the project coordinator. Beth served in this role as part of the Solid Waste Authority of Palm Beach County's Mass Burn Waste-to-Energy design-build project. She will report directly to the construction manager, Alex but work daily with the senior field inspector, David, during the construction portion of the work.

## Project Controls

Project controls are a critical operational element central to meeting schedule, quality, and cost requirements. Accurate, realistic schedules will allow for resource planning for both the City and our CEI staff. CDM Smith will work with the City to develop scheduling and tracking systems to enable project-level tracking, visibility, and control. The schedule will be used throughout to plan, deliver, and account for all project activities. **Douglas M. Sutter, CCM** is our project controls specialist and scheduler. He has worked as both an owners' representative as well as part of a design-build team. His experience to see both sides will support a thorough and complete understanding of how to successfully complete the project on schedule. The DBF will use Primavera Project Planner P6 to develop the project baseline schedule and monitor the progress of the schedule for the life of the project. We propose using the Primavera P6 as well for ease of communication and project consistency. In addition, CDM Smith has designated **Craig A. Gadberry, PE** as our project estimator. Craig will review the cost development by the DBF through every phase of the project. CDM Smith is a firm believer that adequate project controls will help minimize project risk and maximize opportunities for successful delivery due to:

- Effective assessment of current project progress vs. baseline
- Forecasting of future project performance and assessment – corrective actions, preventative actions, re-steering
- Improved accountability and credibility – actual vs. planned performance, gives the public and City management confidence about project performance
- Cost and schedule optimization

## Survey Control

Our surveyor, **KEITH** will check the survey control baseline(s) along with sufficient baseline control points and bench marks at appropriate intervals along the project in order to: (1) Back check DBF building placement for quality control, (2) Make and record pre-construction surveys of the building, and (3) Perform incidental engineering surveys.

## Foundation and Materials Testing Control

Our foundation and material testing firm, **Nutting Engineers**, will observe auger cast piling installation and soils compaction's of the building foundation. They will test soil density and concrete breaks for the City and independent of the DBF. Nutting has been one of the premier geotechnical engineering firms in South Florida since its inception in 1967. Their comprehensive range of services include geotechnical exploration and engineering including soil borings, monitoring of auger cast pile installation, groundwork modification and chemical grouting procedures, quality control/quality assurance testing of construction materials, and structural inspections (special/threshold) of structures. Nutting's experience for the City of Fort Lauderdale includes the replacement of two of the three two-story tall GTL WWTP LOX bulk storage tanks project. The two tanks are located in a tight area of the facility. With confidence and extensive knowledge of GTL's soils Nutting Engineers was able to identify the foundation

required to keep these two tall cylindrical tanks standing tall over the test of time; and hurricane seasons.

## Final Documentation Control

CDM Smith has designated **Yanice I. Mercado, PE, PMP**, to manage the final close-out documentation for electronic web-based storage during the post-construction phase.

She will:

- Manage the project close-out
- Manage the warranty books, project related files, final files, reviewed shop drawings, and approved items
- Manage completion report for future City projects
- Manage deficient items and warranty claims

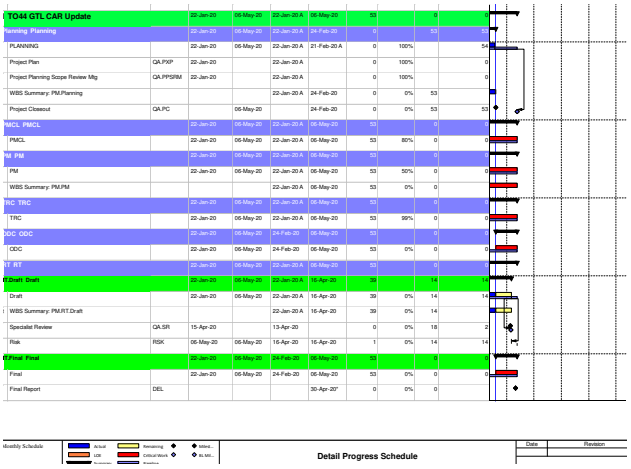
## Scheduling Methodology (Timeline)

Our team understands that project schedule are important for controlling costs, meeting DBF deadlines, and we are committed to partnering with you at the start of each phase to identify budget and schedule constraints. We will review constraints against technical design and construction challenges to ensure schedules match the level of effort required and with efficiency in mind assign the right mix of staff for each task.

At CDM Smith on-time delivery for the CEI team is not only a project requirement it is our management philosophy and commitment to the City.

Our scheduling methodology approach is directly tied to an on-time delivery philosophy. On-time delivery starts at the CEI general phase with a careful development of the baseline schedule. The baseline schedule integrates the tasks and activities defined by the DBF into our Work Breakdown Structure that is simple and clear to both the City and the project team. The Work Breakdown Structure with further definition of the connection and relationship between activities and time by our project controls specialists.

The CDM Smith specialists will support Tim O'Neil and the team in the development of the Primavera P6 Schedule as we did for the GTL 2020 PCCP project, see graphic insert, with clear definition of CEI phases, shop drawing reviews, quality milestones, and with the critical path activities for the DBF proposed dual-design packages. The project schedule is carefully reviewed on a weekly basis with the team during the team calls, and with the project manager on a monthly basis. During these reviews the intent is to look proactively for potential; deviations in the schedule and define workarounds that allows the project to continue on schedule.

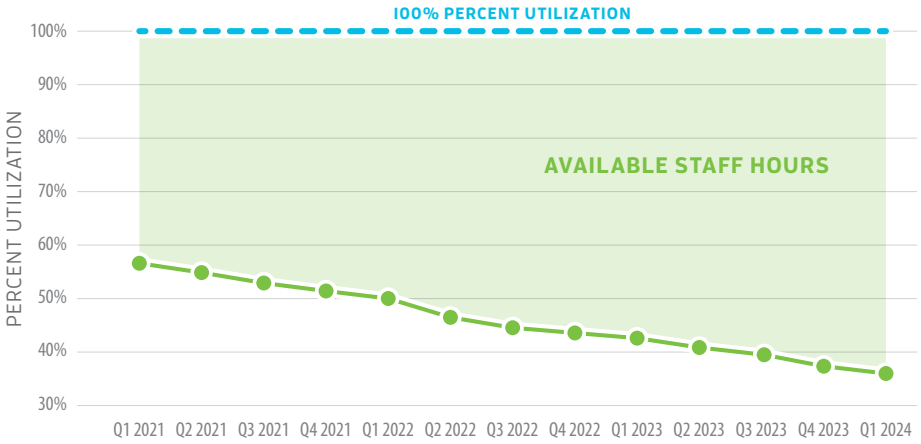



*Primavera P6 Schedule CDM created for the GTL 2020 PCCP project clearly defined CEI phase, reviews, quality milestones, and critical path activities.*

## Current Workload

CDM Smith has ample resource availability to handle acute short-term spikes in workload, and our past track record indicates that we have been successful in effectively handling multiple projects concurrently.

CDM Smith's approach to fit our current workload and this new CEI services project together, is accomplished due to our deep bench of technical engineers and architects whose availability is displayed in our web-based Workload Forecasting Tool so we can select the right-staff to deliver right-sized, cost-effective, and proven technical solutions meeting the City's expectations. Meeting the City's expectations is why we considered current/future workload when selecting our team. The staff identified in the previous sections were selected specifically for their availability,



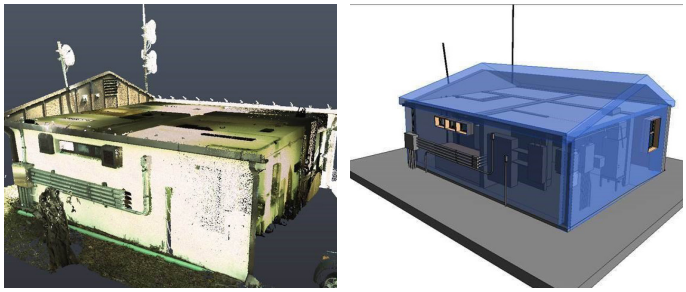
proximity to the City, technical expertise, and diversity in years of experience for cost of-service efficiency. In fact, this is a key advantage of our team—our deep bench of expert staff allows us to assign the right personnel to the right task, which results in cost-effective project deliverables. We also leverage the experience of our senior technical leaders with our skilled engineering task managers in the context of our proven project management procedures.

Our Workload Forecasting Tool was recently used for the ongoing City project, TO46 New Emergency Generator at GTL WWTP Memo, with City PM Axel Rivera.

## Available Resources

**Facilities:** Our subconsultant MBC's office is located within miles of the GTL WWTP and serves as our backup location storage of project documents

**Technological Capabilities:** Our subconsultant KEITH can 3D laser scan a point cloud with pictures of the new VPSA facility and modified existing oxygen production facility during the post-construction phase for very precise "as-builts". The point cloud can then be converted into a Revit 3D Model.



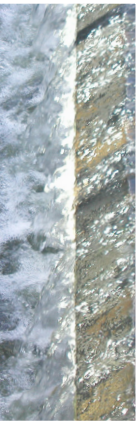
*CDM Smith created a 3D Revit Model of the existing building exterior for Broward County to properly document and solve solutions in real time*

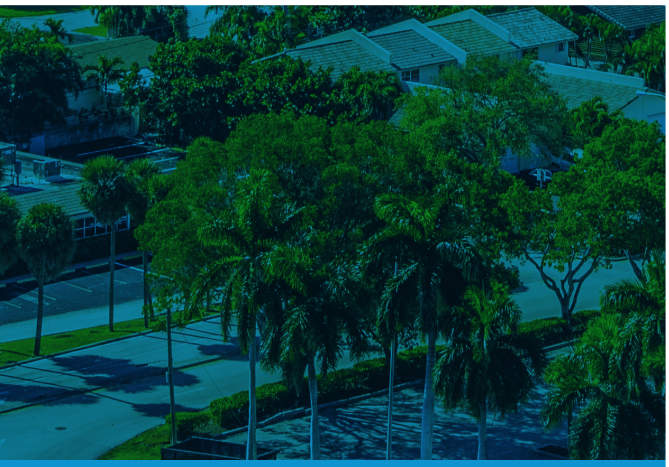
**GIS Integration:** We offer GIS Integration. CDM Smith can use GIS to integrate with BIM, AutoDesk InfraWorks, Civil 3D, and Revit. CDM Smith can integrate these tools and work with the City so that the VPSA building in GIS includes the InfraWorks as-built with all the internal components of the building stored in BIM. Both Survey123 and Collector can be deployed to collect information inside the building and BIM will be updated for use with Maximo Asset Management.

**Unmanned Aerial Vehicles:** CDM Smith is harnessing the power of small unmanned aerial vehicles (UAV) to bring the City a revolutionary, exciting new service. By attaching cameras, sensors, and other equipment to UAVs, we can connect the City to powerful data, backed by solid engineering expertise. This new service, called Real-Time Engineering Aerial Data Inspections (READI), enables the City to complete tasks, like inspections and site monitoring, in an efficient, safe, and reliable manner. READI services include roof equipment inspections, communications tower inspections, mapping/surveying, site monitoring, and repeat inspections before, during, and after construction. CDM Smith was one of the first firms in the US to be granted a waiver from the Federal Aviation Administration (FAA) to use small unmanned aerial vehicles or drones in several aspects of the firm's work. We are one of the leaders in this field of work and have received the FAA UAS Certification which allow us to legally fly drones for City work. CDM Smith has recently flown drones in support of construction site photogrammetry and critical infrastructure assessments of dams after Hurricane Matthew. We recently flew a drone 100-feet above grade for a site "as-built" of Broward County's 2A facility.

*CDM Smith will utilize state-of-the-art technology to properly document and solve solutions in real time.*

# SECTION 6





## References

# Section 6: References

Having served the City for more than 19 years, we know and value your culture, we know the way you like to work, and we understand your expectations. More importantly, for this contract, we know that you want on time and on budget services. Further details on our reference projects can be found in the SF 330 F in **Section 3**.

## Central District Wastewater Treatment Plant Oxygen Production
### Miami, FL

**Client:**
Miami-Dade Water and Sewer Department (WASD); 3989 Rickenbacker Causeway, Key Biscayne, FL 33149
Robert Fergen;786.218.0758; rfergen@miamidade.gov

**Start date:** 2015
**Completion Date:** Design: 2018; Construction: Est. 2022

CDM Smith evaluated the oxygen delivery needs, evaluating alternatives for addressing the oxygen delivery system deficiencies, and constructing a new oxygen production system to provide full redundancy, as existing units are near the end of their useful life and prone to failure. The project description assumed that the oxygen production unit would use the cryogenic air separation technology, similar to the existing units.

**Self-performed Services:** DCP services during design and construction phases

**Added Value/Innovation:** Our proposed oxygen production process was designed to provide WASD with redundancy, comprised of the two 90-tpd VPSA oxygen production units plus the existing Cryogenic Unit No. 3 which has the ability to remain functional to serve as the standby (redundant) unit and provide reliable standby service. We have also designed the facilities for the new system at selected elevations for adequate resiliency considering sea level rise and surge conditions. Our team worked with WASD staff to deliver a cost-saving solution. Our alternatives analysis featured key input from WASD staff, it was decided to construct a new VPSA system with two units. This alternative provides a 30 percent savings in Net Present Value over a 40-year, long-term life cycle.

**Construction Cost Estimated:** $30M **Construction Cost Actual:** $30M

# Alternative Route Analysis and Preparation of Design-Build Criteria for the Installation of a 48-inch Diameter Water Main for "Area N"

## Miami, FL

**Client:**
Miami-Dade Water and Sewer Department (WASD); 3071 S.W. 38th Avenue, Miami, FL 33146
Vincent Morello; Assistant Director, Engineering and Construction Division; 786.552.4420;
Vincent.Morello@miamidade.gov

**Start date:** 2014 **Completion Date:** 2020

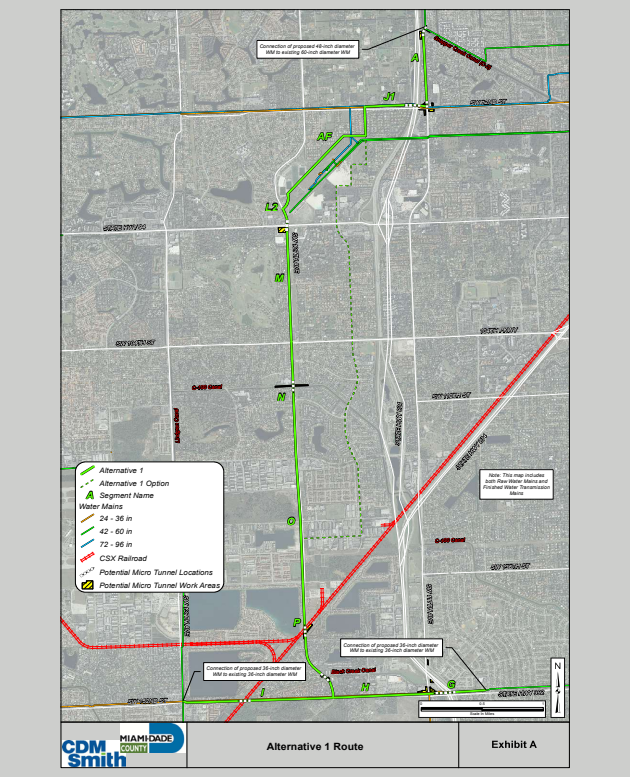
CDM Smith prepared the design-criteria document providing the design-builder with the technical information necessary to define the project scope, design-criteria, and performance requirements for this project. Open cut installation was recommended for areas not requiring a special construction technique. Trenchless construction was considered for crossing with FDOT ROW, railroad crossing, canal crossings, and crossings of Florida's Turnpike using micro tunneling. CDM Smith also serves as the technical advisors during the ongoing project procurement phase. This project was awarded to a design-builder in December 2015 and completion of construction is scheduled for end of 2020.

**Self-performed Services:** prepared the design-criteria document

**Added Value/Innovation:** Conducted a thorough evaluation of an alternate bid submitted by the DBF to the project's base bid to protect the Client's interest and verify adherence to the Contract Documents

**Construction Cost Estimated:** $43.1M

**Construction Cost Actual:** $37.2M



## Master Pump Station 450,
### Broward County, FL

**Client:**
Broward County Water and Wastewater Services (BCWWS),
2555 West Copans Road, Pompano Beach, Fl, 33063
Merle Medina; Project Manager; 954.831.0791;
mmedina@broward.org

**Start date:** 2014 **Completion Date:** 2019

CDM Smith designed, permitted, and bid the replacement of the 300 horsepower primary pumps, converted the wet well into a new pump room for the addition of new 60 horsepower low flow jockey pumps, and replaced pump speed control with variable frequency drives. In addition, our team replaced 24-inch diameter valves, flow meter, electrical, and controls to meet future flow conditions. The design includes by-pass pumping of the entire flow during construction. The design also included converting from a wet well into an inline station.

**Self-performed Services:** Mechanical, process, architectural, structural and controls design; construction contract administration; and start-up and commissioning

**Added Value/Innovation:** The design converted an existing wet well, constant speed booster pump station to a more efficient in-line, variable speed booster pump station. Added branches and valves for future discharge and suction connections to mitigate the risk and cost of future, temporary bypassing.

**Construction Cost Estimated:** $5.60M
**Construction Cost Actual:** $5.99M ($5.5M bid + client requested yard pipe improvements for future use connections)

## Master Pump Station 456,
### Broward County, FL

**Client:**
Broward County Water and Wastewater Services (BCWWS),
2555 West Copans Road, Pompano Beach, Fl, 33063
Merle Medina; Project Manager; 954.831.0791;
mmedina@broward.org

**Start date:** 2014 **Completion Date:** 2019

CDM Smith performed condition survey of each station with our architect, structural, building mechanical, electrical, controls, and pump experts. The capital planning of each station was provided by our construction management and construction costs experts. The condition survey and capital planning included a stakeholder meeting with operations, managers, and engineering to identify critical success factors and vision goals. Outcomes at each station included a sequence of construction, construction scheduling of durations, and opinion of probable construction costs. These outcomes and stakeholder meeting goals were carried through the design phases and into the purchasing bid documentation.

**Self-performed Services:** Mechanical, process, architectural, structural and controls design; construction contract administration; and start-up and commissioning

**Added Value/Innovation:** The design converted an existing wet well, constant speed booster pump station to a more efficient in-line, variable speed booster pump station.

**Construction Cost Estimated:** $3.00M
**Construction Cost Actual:** $3.66M (Client budget + material costs escalation

## North District Miami Dade Primary Clarifiers,
### Miami, FL

**Client:**
Miami-Dade Water and Sewer Department (WASD);
2575 Northeast 156th Street, North Miami Beach, FL 33160
Robert Fergen;786.218.0758; rfergen@miamidade.gov

**Start date:** 2015
**Completion Date:** Design: 2017; Construction: Est. 2022

CDM Smith designed upgrades for replacements to the primary clarifiers and associated odor control facilities to provide increased reliability for operations at the 120-mgd NDWWTP.

**Self-performed Services:** Detailed design and preparation of construction documents with critical MOPO considerations; Engineering services during construction

**Added Value/Innovation:** Given the time-sensitive nature of this project, in an emergency repair effort, our team split the design of this project into two bid packages.

**Construction Cost Estimated:** $50.9M **Construction Cost Actual:** $50.5M

## North District Miami Dade Secondary Clarifiers,
### Miami, FL

**Client:**
Miami-Dade Water and Sewer Department (WASD);
2575 Northeast 156th Street, North Miami Beach, FL 33160
Robert Fergen;786.218.0758; rfergen@miamidade.gov

**Start date:** 2016 **Completion Date:** Design: 2018; Construction: Est. 2023

CDM Smith collaborated with WASD Operations Staff to develop an early MOPO planning that established a sequencing protocol to avoid disruption and maintain a minimum clarifier capacity during wet weather and peak flow considerations. For the NDWWTP Maintenance of Plant Operations (MOPO), our team provided color-coded illustrations showing a sequence of secondary clarifier activities to occur during dry weather, clearly indicating the units "in service" or "out of service" during each activity to help operators determine the impacts to plant operations and the maximum treatment capacity ensuring that units will be not overloaded beyond their safe operational capacity. The project was successfully bid and awarded and is currently under construction.

**Self-performed Services:** Services during pre-construction, construction and post construction phases

**Added Value/Innovation:** CDM Smith collaborated with WASD Operations Staff to develop an early MOPO planning that established a sequencing protocol to avoid disruption and maintain a minimum clarifier capacity during wet weather and peak flow considerations.

**Construction Cost Estimated:** $22.8M

**Construction Cost Actual:** $22.8M

## Lakeside Ranch STA & S-19IA PS,
### Okeechobee, FL

**Client:**
South Florida Water Management District:
3301 Gun Club Road, West Palm Beach, FL 33406
Robert Fitzpatrick, PE; 631.885.0321; rfitzpatrick@sfwmd.gov

**Start date:** 2018 **Completion Date:** Ongoing

CDM Smith to provide final design services, permitting support (state and U.S. Army Corps of Engineers), and procurement package development for the Phase I and Phase II projects. Phase I design and construction are completed. CDM Smith provided engineering services during construction for the Phase I Project. Phase II design is recently completed and is awaiting funding for construction.

**Self-performed Services:** Engineering studies, calculations and analyses, preliminary and final design, preparation of design reports, cost estimates and construction schedules, operation plans, construction plans and specifications, and construction-support services.

**Added Value/Innovation:** CDM Smith evaluated three coffer dam alternatives on the L-47 Canal side of the excavation. The results of the investigation provided a basis for design, as well as performance criteria within the specifications.

**Construction Cost Estimated:** $31M **Construction Cost Actual:** $31M

## Ion Exchange Resin Plant and East WTP Improvements,
### Boynton Beach, FL

**Client:**
City of Boynton Beach, 124 Woolbright Road
Boynton Beach, FL 33435
Michael Low; Deputy Director/Manager, Technical Services;
Tel: 561.742.6403; Email: lowm@bbfl.us

**Start date:** 2015 **Completion Date:** 2017

CDM Smith delivered a progressive design-build installation of an Ion Exchange Resin Plant at the West WTP site for pretreatment of the water supply to the East WTP from the western wellfield while upgrading the WTP to a capacity of 24 mgd. When CDM Smith was engaged, our initial cost estimate of all components was $48M. As this price was 50 percent over the City's budget, we worked with the City to perform cost assessments and value engineering as design continued and provided target estimates at the 10, 30, and 60 percent levels. The final guaranteed maximum price was signed for $30.8M. Using a progressive design-build approach, the team was able to deliver the baseline scope below the initial budget.

**Self-performed Services:** Structural construction, site civil, mechanical construction, electrical, construction management, design

**Added Value/Innovation:** The East Plant had capacity to allow expansion, however, had no water. The West Plant had adequate water, without a permit or the space to expand. The solution: Upgrade the East Plant to focus on magnetic ion exchange (MIEX) technology to allow blending of both surface water and groundwater into an acceptably tasting and compliant potable water. The Design-Build Institute of America (DBIA) awarded this project the 2018 National Merit Award and the 2018 Florida DBIA Best Overall Award

**Construction Cost Estimated:** $48M **Construction Cost Actual:** $25.5M

## Central Monitoring Facility,
### Palm Beach County, FL

**Client:**
Palm Beach County Water Utilities Department (WUD);
8100 Forest Hill Blvd, West Palm Beach, FL 33416
Anthony Longo; Facilities System Project Manager;
Tel: 561.233.2763; Email: alongo@pbcgov.org

**Start date:** 2010 **Completion Date:** 2013

As part of an existing consultant agreement with the Palm Beach County WUD, CDM Smith was retained to provide professional design services associated with preliminary design, final design, permitting, and bidding, and construction management for the 3,000-ft2 Central Monitoring Facility (CMF).

The project was constructed through WUD's existing Construction Management-At-Risk (CMAR) contract with the Contractor. CDM Smith was the owner's representative during construction.

**Self-performed Services:** Reviewed shop drawings, made recommendations on the resolution of issues, and attended construction meetings, and conducted the substantial completion and final completion inspections.

**Added Value/Innovation:** We negotiated the contract price with the CMAR firm, reviewed shop drawings, made recommendations on the resolution of issues, attended construction meetings, and conducted the substantial completion and final completion inspections.

**Construction Cost Estimated:** $1.96M **Construction Cost Actual:** $1.94M

## Design-Build Criteria Professional Services for Fire Station No. 113,
### Delray Beach, FL

**Client:**
City of Delray Beach, 434 S. Swinton Ave.,
Delray Beach, Florida 33444
Isaac Kovner, PE, Principal Engineer; Tel: 561.243.7341
Email: kovner@mydelraybeach.com

**Start date:** 2018 **Completion Date:** 2019

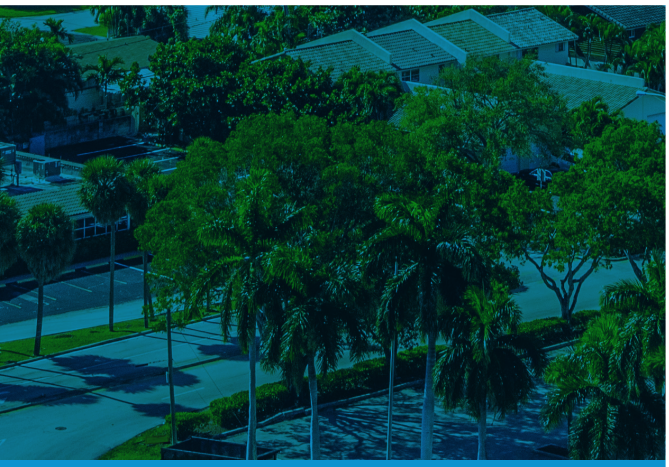
CDM Smith prepared the Design Criteria Package (DCP) to include a detailed scope, establish the design criteria, performance requirements, and bid and contract parameters for the Project. The Design Criteria Package included details for a new, 28,300 square foot facility to replace the existing 6,000 square foot facility. The programmed space is split over three floors and the DCP includes facility room data sheets for each space within the building, outlining City requirements for room sizes, materials, finish selections, hardware, furniture, special equipment, telecommunication systems, and also criteria for mechanical, electrical and plumbing (MEP) systems, site development, landscaping, utilities services and stormwater management. Conceptual floor plans were developed with the Owner for the entire facility to validate the facility size and to ensure proper functional relationships met the Owner's requirements. This project was successfully bid and awarded. The City hired CDM Smith to provide CEI services during the construction, construction and post-construction phases.

**Self-performed Services:** Prepared the DCP, prepared the planning level Opinion of Probable Construction Cost

**Added Value/Innovation:** Modified original city two story building to include third story emergency operation center; preplanning workshops with stakeholders; preferences for inclusion in DCP including room layouts

**Construction Cost Estimated:** $15M **Construction Cost Actual:** TBD

# SECTION 7



## Minority/Women (M/WBE) Participation

# Section 7: Minority/Women (M/WBE) Participation

## Firm's Previous Efforts

CDM Smith is not a minority business enterprise (MBE) firm; however, we are committed to utilizing MBE/small business enterprises (SBE)/disadvantage business enterprise (DBE) firms in meaningful roles on our projects. This way, we enhance the opportunities for DBE/SBE/MBE firms to gain the experience that ensures long-term business viability. On each assignment we are the lead firm, we seek either to complement our in-house skills in specialized engineering areas, or supplement and extend our in-house capabilities with additional resources and local knowledge.

We have a strong history of successfully achieving DBE/SBE/MBE participation on projects. We also have a strong record of partnering across the State of Florida, and successful examples of CDM Smith's DBE/SBE/MBE utilization on projects are showcased in on this page. As such, we are firmly committed to minority and women-owned subconsultant participation and plan to encourage diversity and MBE/WBE participation on this project.

## Firm's Planned Efforts

CDM Smith greatly values the participation of minority firms for our project work. We believe that it aligns well with our core values as well our community stewardship. Our objective is to seek MBE/WBE participation to meet the specific needs of the City for meaningful participation as subconsultants. With that in mind we have included **McCafferty Brinson Consulting, LLC** (MBC) for enginering support services. MBC is a small, woman owned business with the following certifications: State of Florida Office of Supplier Diversity Minority Business, Broward County Business Enterprise (CBE) and Small Business Enterprise (SBE), Miami-Dade County Small Business Enterprise (SBE), and South Florida Water Management District Small Business Enterprise (SBE). Further information on the firms capabilities is included in **Tab 8 Subconsultants**. Below is a copy of MBC's WBE certificate.

State of Florida

Woman Business Certification

McCafferty Brinson Consulting, LLC

Is certified under the provisions of
287 and 295.187, Florida Statutes, for a period from:

11/26/2019 to 11/26/2021

Jonathan R. Satter, Secretary
Florida Department of Management Services

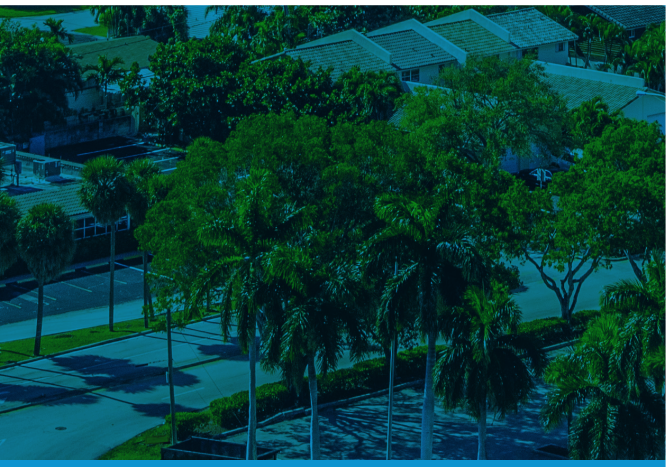
Department of MANAGEMENT SERVICES
Office of Supplier Diversity

Office of Supplier Diversity
4050 Esplanade Way, Suite 380
Tallahassee, FL 32399
850-487-0915
www.dms.myflorida.com/osd

CDM Smith **consistently meets or exceeds** established contract goals for MBE participation for our projects throughout Florida. Here are some of our South Florida Examples.

| PROJECT | GOAL | ACHIEVED |
|---|---|---|
| 3A Facility Lime Process Demolition, Broward County, FL | 13% | 13% |
| 3B and 3C 4-log Inactivation Hydraulic Modeling Report, Broward County, FL | 25% | 40% |
| 2A Water Treatment Plant Corrosion Control Update, Broward County, FL | 25% | 30% |
| 1A Anion Exchange Treatment Update, Broward County, FL | 25% | 35% |
| 3B Facility Chlorination System Improvements, Broward County, FL | 25% | 49% |
| North Regional Wastewater Treatment Pumping System/Septage Receiving Facility, Broward County, FL | 13% | 17% |
| NRWWTP Electrical Load Center and Motor Control Centers Rehabilitation, Broward County, FL | 25% | 25% |
| MDWASD OOL WWTP Design Services, Miami-Dade County, FL | 24% | 33% |
| South District Water Reclamation Project, Miami-Dade County, FL | 20% | 28% |
| South Miami Heights WTP, Miami-Dade County, FL | 10% | 12% |
| Stormwater Master Plan, Miami-Dade County, FL | 5% | 15% |
| Seaport Environmental Services, Miami-Dade County, FL | 30% | 40% |
| Class I Landfill Cells 15 &16 Services During Construction, SWA, FL | 15% | 27% |
| Process Engineering for ECR Board, West Palm Beach, FL | 9% | 26% |
| General Hydrogeological Services, Palm Beach County, FL | 15% | 22% |
| Modeling Services, SFWMD, FL | 25% | 79% |
| Southeast Landfill Biosolids Composting Facility Conceptual Design, Hillsborough County, FL | 10% | 22% |

# SECTION 8



## Subconsultants

# Section 8: Subconsultants

CDM Smith has assembled our team to exceed your goals and objectives identified in the City's Solicitation. To this end, our team is proud to bring three local engineering firm's of to this project. Our team also meets the City's desire to include capable M/WBE participation through the inclusion of the Fort Lauderdale headquartered firm, McCafferty Brinson. Our history of including local M/WBE firm's has introduced new companies into the available pool of engineers and increased South Florida's available resources for future projects.

## Nutting Engineers of Florida, Inc. | Geotechnical - Laboratory; Auger Cast Piles

Nutting has been one of the premier geotechnical engineering firms in South Florida since its inception in 1967. Their comprehensive range of services include geotechnical exploration and engineering including soil borings and groundwater well drilling, monitoring of pile installation, groundwork modification and chemical grouting procedures, quality control/quality assurance testing of construction materials, and structural inspections (special/threshold) of structures.

Nutting's experience for the City of Fort Lauderdale includes the replacement of two of the three two-story tall George T. Lohmeyer Regional Wastewater Treatment Plant LOX bulk storage tanks project The two tanks are located in a tight area of the facility. With confidence and extensive knowledge of GTL's soils Nutting was able to identify the foundation required to keep these two tall calendrical tanks standing tall over the test of time and hurricane seasons.

Nutting has partnered with CDM Smith for the past eight years on projects for Broward County, Miami, and the Solid Waste Authority of Palm Beach County.

## McCafferty Brinson Consulting, LLC | Engineering Support – Technical Review; Inspection

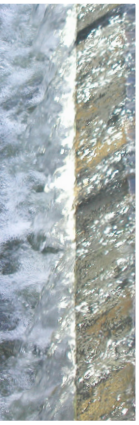
Located in the City of Fort Lauderale, MBC is an engineering consulting firm founded in South Florida in 2006. MBC offers environmental consulting, engineering design, and construction administration services related to potable water, reclaimed water, and wastewater treatment systems, pumping and transmission systems, and utility infrastructure, as well as permitting and regulatory compliance consulting. MBC is certified as a State of Florida Minority, Women and Service-Disabled Veteran Business Enterprise (MBE), and as a County Business Enterprise (CBE) in Broward County. MBC's headquarters are in Fort Lauderdale.

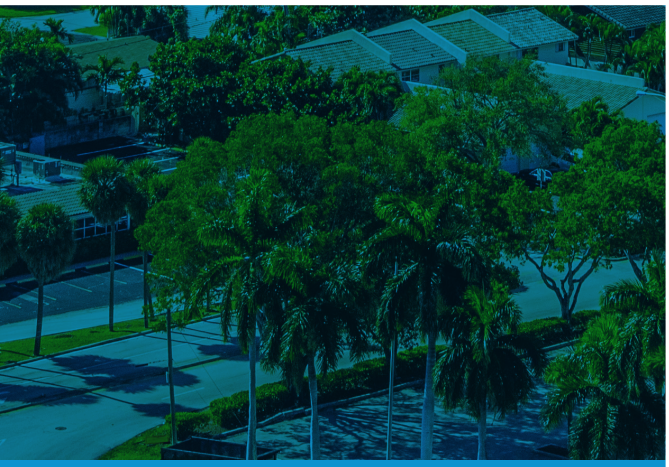
MBC's primary focus is on the wastewater, reclaimed water, and potable water market sector. MBC offers a range of environmental consulting, engineering design, and construction administration services, as well as permitting and regulatory compliance consulting services. MBC is a local family owned business. Audra and Frank live in Fort Lauderdale and their home office is based in Fort Lauderdale.

## Keith and Associates, Inc. (KEITH). | Survey

KEITH is a multi-disciplined consulting engineering firm headquartered in Pompano Beach, FL with additional offices in Broward, Miami-Dade, Palm Beach, St. Lucie Counties, and in the City of Orlando. They provide civil engineering, traffic engineering, comprehensive planning, surveying and mapping, subsurface utility engineering (SUE), landscape architecture, BIM/VDC and construction management services. The firm was founded on the principle of achieving success by combining client oriented business practices with the latest technology and a staff of experienced and talented professionals. They have provided construction services for projects ranging from roadways, water mains, sanitary sewers, storm sewers, lakes, retention areas, driveways, and other civil engineered facilities.

# SECTION 9





## Required Forms

# Section 9: Required Forms

Within this section, we have included the following fully-executed forms:

- Statement of Qualification Certification
- Non-Collusion Statement
- Contract Payment Method
- Sample Insurance Certificate
- Non-Discrimination Certification Form
- E-Verify Affirmation Statement
- Acknowledgment of Addenda – This is included on the Statement of Qualification Certification
- Certificate of Authorization

## STATEMENT OF QUALIFICATION CERTIFICATION

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

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

Company: (Legal Registration) CDM Smith Inc.

Address: 621 NW 53rd Street, Suite 265

City: Boca Raton State: FL Zip: 33487

Telephone No. 786.437.2756 FAX No. 561.247.7084 Email: lizamail@cdmsmith.com

Check box if your firm qualifies for MBE / SBE / WBE: ☐

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

| Addendum No. | Date Issued | Addendum No. | Date Issued |
|---|---|---|---|
| N/A | N/A | | |
| | | | |

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

N/A

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

Submitted by:

Ignacio L. Lizama, PE, ENV SP
Name (printed)

Signature

October 22, 2020
Date:

Vice President
Title

Rev. 7/11/2019

## NON-COLLUSION STATEMENT

By signing this offer, the vendor/contractor certifies that this offer is made independently and free from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3.

> 3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g. ownership of five (5) percent or more).
>
> 3.4. Immediate family members (spouse, parents and children) are also prohibited from contracting with the City subject to the same general rules.

Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.

| NAME | RELATIONSHIPS |
|---|---|
| N/A | |
| | |
| | |
| | |
| | |

In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.

## CONTRACT PAYMENT METHOD

The City of Fort Lauderdale has implemented a Procurement Card (P-Card) program which changes how payments are remitted to its vendors. The City has transitioned from traditional paper checks to credit card payments via MasterCard or Visa as part of this program.

This allows you as a vendor of the City of Fort Lauderdale to receive your payments fast and safely. No more waiting for checks to be printed and mailed.

In accordance with the contract, payments on this contract will be made utilizing the City's P-Card (MasterCard or Visa). Accordingly, bidders must presently have the ability to accept these credit cards or take whatever steps necessary to implement acceptance of a card before the start of the contract term, or contract award by the City.

All costs associated with the Contractor's participation in this purchasing program shall be borne by the Contractor. The City reserves the right to revise this program as necessary.

By signing below you agree with these terms.

Please indicate with which credit card payment you prefer:

☑ _____ Master Card

☑ _____ Visa

Company Name: CDM Smith Inc.

Ignacio L. Lizama, PE, ENV SP
Name (printed)

Signature

October 22, 2020
Date:

Vice President
Title

Rev. 8/27/2018

# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 10/12/2020

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**
Aon Risk Services Northeast, Inc.
Boston MA Office
53 State Street
Suite 2201
Boston MA 02109 USA

**CONTACT NAME:**
**PHONE (A/C. No. Ext):** (866) 283-7122 **FAX (A/C. No.):** 800-363-0105
**E-MAIL ADDRESS:**

| INSURER(S) AFFORDING COVERAGE | | NAIC # |
|---|---|---|
| INSURER A: | LM Insurance Corporation | 33600 |
| INSURER B: | Liberty Insurance Corporation | 42404 |
| INSURER C: | Liberty Mutual Fire Ins Co | 23035 |
| INSURER D: | ACE Property & Casualty Insurance Co. | 20699 |
| INSURER E: | Lloyd's Syndicate No. 2623 | AA1128623 |
| INSURER F: | Commerce & Industry Ins Co | 19410 |

**INSURED**
CDM Smith Inc.
75 State Street Suite 701
Boston MA 02109 USA

**COVERAGES** **CERTIFICATE NUMBER:** 570084486777 **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,

Limits shown are as requested

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| B | X COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE / X OCCUR<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY / X PRO-JECT / X LOC<br>OTHER: | | | TB7611B8T8Z6040 | 01/01/2020 | 01/01/2021 | EACH OCCURRENCE | $2,000,000 |
| | | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | $1,000,000 |
| | | | | | | | MED EXP (Any one person) | $10,000 |
| | | | | | | | PERSONAL & ADV INJURY | $2,000,000 |
| | | | | | | | GENERAL AGGREGATE | $4,000,000 |
| | | | | | | | PRODUCTS - COMP/OP AGG | $4,000,000 |
| C | AUTOMOBILE LIABILITY<br>X ANY AUTO<br>OWNED AUTOS ONLY / SCHEDULED AUTOS<br>HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY | | | AS2-611-B8T8Z6-060 | 01/01/2020 | 01/01/2021 | COMBINED SINGLE LIMIT (Ea accident) | $2,000,000 |
| | | | | | | | BODILY INJURY ( Per person) | |
| | | | | | | | BODILY INJURY (Per accident) | |
| | | | | | | | PROPERTY DAMAGE (Per accident) | |
| D | X UMBRELLA LIAB / X OCCUR<br>EXCESS LIAB / CLAIMS-MADE<br>DED / RETENTION | | | XEUG28194687004 | 01/01/2020 | 01/01/2021 | EACH OCCURRENCE | $5,000,000 |
| | | | | | | | AGGREGATE | $5,000,000 |
| A | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>Y / N | | | WA561DB8T8Z6010<br>AOS | 01/01/2020 | 01/01/2021 | X PER STATUTE / OTH-ER | |
| A | ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER (Mandatory in NH) N | N / A | | WC5611B8T8Z6020<br>WI | 01/01/2020 | 01/01/2021 | E.L. EACH ACCIDENT | $1,000,000 |
| | If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | E.L. DISEASE-EA EMPLOYEE | $1,000,000 |
| | | | | | | | E.L. DISEASE-POLICY LIMIT | $1,000,000 |

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

RE: RFQ # 12401-116, CCNA - Construction Engineering and Inspection (CEI) Services for GT Lohmeyer Wastewater Treatment Plant Replacement of Oxygen System. Certificate Holder is included as Additional Insured in accordance with the policy provisions of the General Liability, Automobile Liability and Umbrella Liability policies.

**CERTIFICATE HOLDER**

City of Fort Lauderdale
Attn: Fausto Vargas
100 N. Andrews Avenue
Fort Lauderdale FL 33301 USA

**CANCELLATION**

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

**AUTHORIZED REPRESENTATIVE**

Aon Risk Services Northeast, Inc.

Holder Identifier :

Certificate No : 570084486777

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

AGENCY CUSTOMER ID: 10518329

LOC #:

# ADDITIONAL REMARKS SCHEDULE



| AGENCY | NAMED INSURED |
|---|---|
| Aon Risk Services Northeast, Inc. | CDM Smith Inc. |
| POLICY NUMBER: See Certificate Numbe 570084486777 | |
| CARRIER: See Certificate Numbe 570084486777 / NAIC CODE: | EFFECTIVE DATE: |

**ADDITIONAL REMARKS**

**THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,**
**FORM NUMBER:** ACORD 25 **FORM TITLE:** Certificate of Liability Insurance

| INSURER(S) AFFORDING COVERAGE | NAIC # |
|---|---|
| INSURER | |
| INSURER | |
| INSURER | |
| INSURER | |

**ADDITIONAL POLICIES** If a policy below does not include limit information, refer to the corresponding policy on the ACORD certificate form for policy limits.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFFECTIVE DATE (MM/DD/YYYY) | POLICY EXPIRATION DATE (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| | WORKERS COMPENSATION | | | | | | | |
| B | | N/A | | WA761DB8T8Z6030 MA & PR | 01/01/2020 | 01/01/2021 | | |
| | OTHER | | | | | | | |
| E | Archit&Eng Prof | | | PSDEF2000033 Professional/Claims Made | 01/01/2020 | 01/01/2021 | Each Claim | $1,000,000 |
| | | | | | | | Aggregate | $2,000,000 |
| | | | | | | | | |
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AGENCY CUSTOMER ID: 10518329

LOC #:

# ADDITIONAL REMARKS SCHEDULE



| AGENCY | NAMED INSURED |
|---|---|
| Aon Risk Services Northeast, Inc. | CDM Smith Inc. |
| POLICY NUMBER: See Certificate Numbe 570084486777 | |
| CARRIER: See Certificate Numbe 570084486777 / NAIC CODE: | EFFECTIVE DATE: |

**ADDITIONAL REMARKS**

**THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,**
**FORM NUMBER:** ACORD 25 **FORM TITLE:** Certificate of Liability Insurance

Professional Liab Policy # PSDEF2000033

Beazley (Syndicates 2623/0623) - 37.5%

BRIT (Syndicate 2987) - 31.25%

Ms Amlin (Syndicate 2001) - 12.5%

Munitus (Syndicate 4242) - 12.5%

Re/Rn (Syndicate 1458) - 6.25%



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**CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH NON-DISCRIMINATION PROVISIONS OF THE CONTRACT**

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to the City of Fort Lauderdale Ordinance Sec. 2-187(c), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

The complete non-discrimination provisions may be found on the City's website at the following link: http://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=CDOR_CH2AD_ARTVFI_DIV2PR_S2-187NSCCD

The Contractor shall not, in any of its activities, discriminate against their employees based on the employee's race, color, religion, gender, gender identity, gender expression, marital status, sexual orientation, national origin, age, disability or any protected classification as defined by applicable law.

1. The Contractor certifies and represents that it will comply with this Section during the entire term of the Contract.

2. The failure of the Contractor to comply with this Section shall be deemed to be a material breach of this Contract, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.

3. The City may terminate this Contract if the Contractor fails to comply with this Section.

4. The City may retain all monies due or to become due until the Contractor complies with this Section.

5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of this Code of Ordinances of the City of Fort Lauderdale, Florida.

Authorized Signature

Ignacio L. Lizama, PE, ENV SP; Vice President
Print Name and Title

October 22, 2020
Date

Rev. 1/29/2018

## E-VERIFY AFFIRMATION STATEMENT

RFQ/RFP/Bid /Contract No: 12401-116

CCNA - Construction Engineering and Inspection (CEI) Services for GT Lohmeyer

Project Description: Wastewater Treatment Plant Replacement of Oxygen System

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

(a) all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida
during the term of the Contract, and,

(b) all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: CDM Smith Inc.

Authorized Company Person's Signature: Ignacio L. Lizama, PE, ENV SP

Authorized Company Person's Title: Vice President

Date: October 22, 2020

Rev. 6/27/2019

CDM Smith
75 State Street, Suite 701
Boston, Massachusetts 02109
tel: 617 452-6000

# CERTIFICATE

I, Paul T. Milligan, Secretary/Clerk of CDM Smith Inc., a Massachusetts corporation, do hereby certify that Ignacio L. Lizama holds the position of Vice President, which entitles Mr. Lizama to execute and deliver proposals, contracts and agreements for the performance of professional services in the name and on behalf of CDM Smith Inc. with a value of up to $1 million. Further, Mr. Lizama has the authority to execute and deliver proposals, contracts and agreements for the performance of professional services specifically for RFQ #12401-116 Construction Engineering and Inspection (CEI) Services for GT Lohmeyer WWTP Replacement of Oxygen System.

I further certify that the foregoing is consistent with the Contract Signing Authority Policy and with the By-laws of the said corporation.

IN WITNESS WHEREOF, I have executed this certificate and have caused the corporate seal of CDM Smith Inc. to be hereunder affixed on this 20th day of October 2020.

Paul T. Milligan- Secretary/Clerk of the Corporation

CDM-LIZAMA, IGNACIO-GT Lohmeyer-FL-10.20.2020

WATER + ENVIRONMENT + TRANSPORTATION + ENERGY + FACILITIES

CDM Smith®
cdmsmith.com