CH2M

Bid Contact **Gloria Booth**
boothgf@yahoo.com
Ph 813-676-2036

Address **550 W, Cypress Creek Rd**
Fort Lauderdale, FL 33309

Item #	Line Item	Notes	Unit Price	Qty/Unit	Attch.	Docs
PSUT-18-03--01-01	Please submit documents here.	**Supplier Product Code:**	**First Offer -**	1 / each	**Y**	**Y**

Supplier Total $0.00

CH2M

Item: **Please submit documents here.**

Attachments

00 CH2M Pem Pines MP PSUT-18-03_7-10-18_final.pdf

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

Subject: RFQ # PSUT-18-03

July 10, 2018

CH2M HILL Engineers, Inc.
GJ Schers, PMP, Project Manager
954.513.1540
gj.schers@jacobs.com

ch2m

395 W. Cypress Creek Road | Suite 400 | Fort Lauderdale, FL 33309

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Letter of Interest

CH2M HILL
550 W. Cypress Creek Road
Fort Lauderdale, FL 33309
Tel 954.513.1540

July 10, 2018

City of Pembroke Pines
City Clerk's Office
City Hall Administration Building
601 City Center Way
Pembroke Pines, Florida 33025

Subject: Utilities Comprehensive Master Plan Services
PSUT-18-03

Dear Evaluation Committee Member:

Thank you for the opportunity to propose on this important planning project. The Utilities Comprehensive Master Plan will provide you with the best path forward to meet the goals of the City's Economic Development Strategic Plan. The City wants to position for and promote economic development within its boundaries and improve the quality of life for its residents. To accomplish these goals, the City plans to develop the utility infrastructure for a balanced growth and continue to provide sustainable, high quality water and wastewater services at affordable rates. The Utilities Comprehensive Master Plan will cover the planning period 2020 through 2040 (buildout) and will identify and prioritize capital improvements necessary to continue to provide excellent water and wastewater services to your customers.

We are excited to offer our services to the City. In December 2017, CH2M HILL Engineers, Inc. (CH2M) became a wholly owned subsidiary of Jacobs Engineering Group Inc. resulting in a talent force of 74,000 including scientific, technical professional and construction and program management for industrial, commercial, government and infrastructure sectors. In Florida, our resources include over 2,000 multi-disciplinary staff in 12 offices providing a full spectrum of services. CH2M has been ranked as a top Design, Program Management and Environmental firm by Engineering News Record (ENR) for over a decade and have been ranked among the top 3 in water and wastewater for years. We have also been ranked among Ethisphere's World's Most Ethical Companies, have been recognized as a sustainability leader in the world and have received many water and wastewater awards, including the 2015 Stockholm Industry Water Award (SIWA).

Besides our exceptional qualifications and experience, CH2M brings specific value to the City's Utilities Comprehensive Master Plan effort in the following ways:

a) Assignment of the well-experienced GJ Schers as our suggested Project Manager – He is located in our Broward County office, has an excellent working relationship with utility management and City's engineers, knows the City's supply and treatment system very well and has similar master plan work experience.

b) Excellent understanding of current system Operations – This will facilitate and improve data transfer and cooperation to ensure the project is quickly ramped up and kept on schedule. During the evaluation of alternatives, Operations will have important input and a voice in decision making.

c) Knowledge of current design configuration of facilities - Through recent work assignments the team gained specific knowledge about your system. Assignments include a raw water transmission hydraulic assessment to eliminate bottle-necks, initial SCADA assessment, bench and full-scale testing to improve clarifier performance, feasibility of achieving 4-log virus treatment, support for ion exchange treatment optimization and evaluation of residuals management to rectify existing deficiencies.

d) Similar and recent experience of the suggested project team – This includes recent master plan assignments, utilizing a very similar project approach and prioritization method, for the cities of North Miami

Beach, Melbourne, Cocoa, and Marco Island, Bonita Springs Utility and Seminole Tribe of Florida. Core team members and most support staff are located in our South Florida offices.

As mentioned in Tab 5 under 'Current Workload', our team is excited and ready to start the work for the City of Pembroke Pines immediately. Our core team members are available for assignments for the duration of this important Master Plan project. Our Principal-in-Charge Didier Menard has the authority to commit state and national resources to this project.

An initial project schedule is included in Tab 5 under 'Schedule for Completion of Scope of Services' and shows the Utilities Comprehensive Master Plan completion after 10 months. However, this time frame can be adjusted based on specific needs of the City.

As referenced in Tab 6 under Client References, we have performed similar services to other utilities in the last few years to the full satisfaction of our clients as evidenced by the perfect scores we received.

It has been my personal pleasure to work with the City for the last few years. It is important projects such as this, for an important client, that I look forward to the most. I will take an active role in the project both as the Project Manager and as part of the Water Supply and Treatment team. Thank you and please call me with any questions related to this proposal. I am the firm's single, professionally licensed point of contact for this project.

Sincerely,

CH2M HILL

Francois Didier Menard, PE
Assistant Vice President

GJ Schers, PMP
Project Manager

TAB 3

Firm's Qualifications and Experience in Similar Projects

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Tab 3 – Firm's Qualifications and Experience in Similar Projects

A) Firm Overview

CH2M is a leading professional services firm delivering sustainable solutions to clients in Florida and worldwide, providing consulting, design, engineering, program/project management, and construction services for vital infrastructure and resources.

Among the achievements of which we are most proud, CH2M ranks among Ethisphere's World's Most Ethical Companies. CH2M has been ranked as a top Design, Program Management, and Environmental firm by Engineering News-Record (ENR) for over a decade and have been recognized as a sustainability leader by independent analyst Verdantix.

CH2M was founded in 1946 and registered as a Florida corporation since 1951. Our Florida offices have provided planning, designing and construction of much of the water and wastewater infrastructure that has made Florida's fast-paced growth possible. Our regional offices, located in Pembroke Pines, Fort Lauderdale, Palm Beach Gardens, and Miami, are within a short drive to City offices, allowing us to successfully implement the City's Utilities Master Plan project in the most technically superior, highly responsive, and cost-effective manner possible.

On December 15, 2017, CH2M HILL Companies Ltd. (CH2M) was acquired by Jacobs Engineering Group Inc. (Jacobs). CH2M is now a wholly owned direct subsidiary of Jacobs. CH2M presently remains a separate legal entity and will continue to operate and conduct business.

B) Management, Technical, and Support Staff

The City's project will be delivered and managed from CH2M's Fort Lauderdale office. We understand the importance of providing fast, complete responses to the City's needs. For this reason, the majority of our team members, including Project Manager, GJ Schers, are located in our full-service South Florida offices in Fort Lauderdale and Miami. Our proximity provides you the benefit of immediate responsiveness and increased accessibility, as well as local presence, commitment, and familiarity. It also ensures full access to the facilities, equipment, and resources to cost-effectively complete the Utilities Master Plan project, while ensuring the highest levels of quality. This on-the-spot service offers the flexibility, depth, mix of technical skills, and resources to meet all the various skillsets needed to complete his project. In addition, our Principal-in-Charge, Didier Menard, has the authority to commit CH2M's state, national, and global resources as needed to the City's project.

CH2M will service the City's project largely from our regional offices in Southeast Florida, resulting in a team that is highly responsive and well-versed in regional conditions, stakeholders, and regulatory agencies.

C) Ability to Satisfy Qualification Requirements

As an industry leading water supply and wastewater firm (as ranked by Engineering News Record, 2017) with a strong foot-print in Florida, CH2M can provide the City will the wide range of services required for development and preparation of the Utilities Comprehensive Master Plan.

Brief overviews of CH2M's qualifications to meet and exceed the City's requirements are noted below. Further documentation of our firm's and team members' qualifications and experience is provided in Tabs 4 and 6 of this submittal. These capabilities include:

Master Planning

CH2M has worked with clients throughout the world to plan for the full water cycle — from source to tap. Through our 72 years of experience, we have developed industry-leading tools and processes to evaluate multiple projects and factors to develop comprehensive master plans that focus on the key infrastructure issues facing each specific client. For some clients, the focus is on planning for water availability and supply. For others, the challenge is planning and prioritizing investments in the buried infrastructure. We have successfully completed work similar to the project the City is proposing—for very small communities with less than 10,000 residents to large communities with populations more than 1 million people.

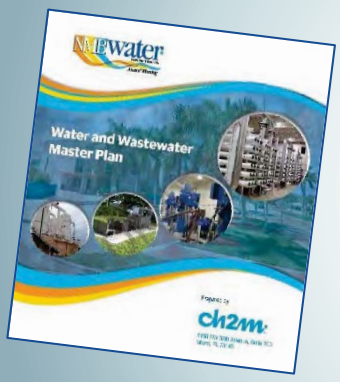
CH2M has helped clients improve the processes and tools used to identify, prioritize, and implement capital projects. This includes defining decision processes to prioritize the most urgent capital projects, appropriately ranking and scoring rehabilitation and replacement projects, and defining the relationships between strategic capital planning, system master planning, capital budgeting, and financial tracking systems.

We are known throughout the industry as an organization that can provide thoughtful leadership and practical vision to balance infrastructure lifecycle needs, reliability, and robustness while at the same time providing politically acceptable solutions.

Asset Management Services

CH2M has spurred and led asset management (AM) practice improvements in engineering, operations and management (O&M), and consulting to optimize processes, performance, and sustainability practices in water and wastewater, and other industries worldwide. CH2M offers clients advanced tools and approaches to meet asset monitoring, reporting, and performance improvement needs. Our experience with performing hundreds of AM assessments and developing implementation programs is closely aligned with the practical experience of successful client-side implementations and the 200 water and wastewater systems that we serve as contract operators.

CH2M has led in development of standards ranging from creating such works as the Water Research Foundation's



Since 2015, CH2M has worked with NMB Water to develop a Water Master Plan that includes improvements at the the Norwood WTP to increase capacity and redundancy, enhance the operations and long-term viability of the water supply, treatment and distribution facilities. Since summer 2017, CH2M has begun implementing the projects identified in the Master Plan in a phased approach addressing urgent R&R work, short-term capacity and redundancy improvements focusing on membrane trains and long-term improvements to mainly the lime softening train.

Effective Utility Management self-assessment tool, serving on the team that drafted the recently published ISO 55000 Asset Management International Standard, and writing the industry guidance document Implementing Asset Management: A Practical Guide. We also led the development of works, dating back more than a decade, such as Avoiding Rate Shock, the Capital Planning Tool, and Water Decision Support System.

Water Distribution Systems and Wastewater Collection and Transmission Systems

CH2M has extensive experience in designing water distribution and wastewater collection and transmission facilities, ranging from the simplest to the most complex transmission systems throughout Florida and the U.S.

Our analyses and designs have accommodated operating pressures ranging from 50 to 250 pounds per square inch, pipelines ranging from 6 to more than 100 inches in diameter, and a variety of pipe materials. We have expertise with numerous hydraulic modeling software packages, including Innovyze InforWater, H2OMAP, AFT Fathom, EXTEND, EPANET, WaterCAD, and KYPIPE. We also use specialized propriety modeling tools, such as Voyage™ and Replica™ to conduct sophisticated dynamic modeling and optimization analyses to evaluate the most cost-effective solution. For example, *CH2M recently worked with Bonita Springs Utilities using Innovyze InforWater to model its water distribution system as part of a 15-year master plan project. Using this software allows for BSU to optimally plan for new services while minimizing water age and hydraulic restrictions.*

For the City of Key West, different technologies for sewer and manhole rehabilitation were tested to determine the most cost-effective solution to the overall project, which ultimately resulted in a combination of rehabilitation and new construction to repair and/or replace the City's entire collection system. *We also developed a hydraulic model for the conveyance system and developed a plan to take advantage of the need to upgrade pump stations to redirect forcemains and improve the overall efficiency and system capacity.*

CH2M also specializes in providing innovative construction techniques. In particular, we have utilized

trenchless technologies for economical solutions for installing transmission mains within heavily congested areas or for crossing sensitive areas, such as wetlands, highways, and railroad undercrossings.

Reuse Water Distribution System

As regulations change and water supplies reach their limits regionally, the need to reuse water becomes more and more important. CH2M has been a long-time consultant delivering reuse services and understands the dynamic of behaviors between the reclaimed water supply and demand patterns and behavior of the interconnected storage systems. We have delivered numerous successful reclaimed water projects including Pasco County Master Reuse System Master Plan Ave Maria master planning. Through these projects, CH2M provided reuse system planning, hydraulic distribution system modelers, groundwater modelers and regulatory assistance.

Hydraulic Modeling of Water Distribution Systems

> CH2M has performed more than 50 water distribution system models within the past 5 years. These models have been used for capital improvement and master planning, water quality analysis, operations analysis, and regulatory compliance.

CH2M's hydraulic modeling experts understand the data requirements, field testing procedures, demand allocation methodologies, and calibration techniques for building accurate models that provide utilities with a sound engineering tool for complex analysis. For each of our modeling projects, we require that our modelers spend time with the utility operations staff to gain an understanding of the intricacies of the system operation.

Also, our modelers conduct field testing programs to thoroughly understand the performance of the systems being modeled. This approach to modeling results in a high degree of accuracy in model calibration.

Our team of modeling experts is uniquely qualified to apply models to solve operating and planning challenges associated with the City's water distribution system and to incorporate these solutions in the system-wide water master plan.

We have the local resources to support the City in its hydraulic modeling needs. *We have recently completed, or are currently working on, several Master Plans in Florida, including North Miami Beach, Cocoa, JEA, and Seminole Tribe of Florida, which have included comprehensive analysis of water transmission and wastewater collection system piping networks.* CH2M is prepared to support the City in its modeling needs to support system optimization, energy efficiency, new capacity requirements, future scenarios analysis, and any other issues facing the City.

Drinking Water

CH2M has designed more than 500 WTPs (from under 1 mgd to 500 mgd capacity) and more than 2,500 water distribution systems.

CH2M is a leader in water treatment technology. Water managers rightfully expect treatment processes to be effective for the present, yet flexible enough to accommodate changes in source water quality and increasingly stringent regulations and higher customer expectations. Our goal is to minimize costs while maximizing future potential.

CH2M has a history of helping clients to provide safe, reliable, and potable water supplies regardless of technical, regulatory, or economic challenges. In addition, CH2M assumes responsibility for investment in research and innovation to continuously expand knowledge in treatment technology. The advanced technologies that CH2M brings into full-scale application have demonstrated proven performance through extensive research, pilot, and demonstration projects.

Our ability to innovate is grounded on the lessons learned from seven decades of experience designing, building, and operating water treatment facilities. Each project we take on incorporates the efficiency and innovation of previous experience. This continuous improvement assures the City that the CH2M team will be able to address all project requirements efficiently, effectively, and creatively — those requirements common to master planning efforts and those that might arise from changes in regulations, requirements, or stakeholder values.

CH2M's successful application of technologies is recognized by colleagues who have bestowed numerous honors through the Engineering Excellence Awards Program of the American Consulting Engineers Council. In 2015, the Stockholm International Water Institute (SIWI) selected CH2M as the recipient of the 2015 Stockholm Industry Water Award (SIWA) — an extremely prestigious award that honors outstanding and transformative water achievements by companies that contribute to sustainable water management. CH2M is the first and only engineering consulting firm to win this award, which was presented for the firm's dedication to water reuse for more than 50 years.

SIWI STOCKHOLM INDUSTRY WATER AWARD

CH2M is able to deliver the high-quality services required to plan and design improvements to any facility need that may arise. With our unparalleled expertise, we can help take projects from early planning stages to detailed design, through construction to full operation. For our drinking water clients, changing regulations, aging distribution systems, security concerns, rising costs, and increasing public demands pose new and complex challenges. From system master planning, to treatment plant design, to distribution systems, CH2M's clients around the world benefit from our industry-leading expertise.

Wastewater

CH2M has designed more than 400 WWTPs and reclaimed water treatment systems within the past 10 years.

CH2M's success in the wastewater treatment field is founded on the consistent ability to recommend treatment technologies, process optimization, and training based the nature of the wastewater to be treated, client needs, and the level of treatment required. When client needs exceed

conventional technologies, we implement proven technologies to provide solutions such as our design and construction of Bonita Springs Utilities' East Water Reclamation Facility which uses membrane bioreactors to provide high quality reuse at a conventional treatment process cost.

CH2M's involvement in innovative wastewater treatment technology began in the 1960s with the development of the first advanced wastewater treatment facility in North America. Subsequent pioneering work in biological, physical, and chemical treatment processes has resulted in many improved process options, as has our research in combined trickling filter and activated solids processes and the bioselector process. As leaders in wastewater treatment, we have been responsible for a broad range of wastewater facility expansions and upgrades, as well as new treatment plants.

We have delivered benchmark wastewater facilities across the U.S. and South Florida—ranging from small 1-mgd plants to 100-mgd or greater WWTPs. We have technologists with expertise in every technical area: processing; stabilization; resource recovery and beneficial reuse; odor control and air quality; and developing master and facilities plans.

CH2M has been delivering successful wastewater treatment projects that include residuals processing and management for decades, providing residuals management solutions to clients around the corner and around the world. Our wastewater reuse experts offer a full range of services from studying the feasibility of implementing reuse in an area through the design and operation of a facility.

Wastewater Collection System

CH2M applies modeling principles and tools developed from more than 30 years of supporting and evolving collection system planning models, including InfoWorks® CS, InfoSewer®, and InfoWater®. Our Conveyance Practice maintains several network licenses for this software, and our team members have extensive experience in applying the Innovyze® suite of tools for master planning purposes.

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

We can also prepare a model development and update plan that prioritizes the development of detailed models for City's wastewater service area, such as areas with projected high growth. We will use techniques honed through our experience developing and merging piecemeal models from multiple consultants to define interface points and assumptions that are sufficiently robust to ensure that basin models developed independently will merge efficiently without jeopardizing the initial calibration.

Financial Management

CH2M has in-house expertise in a wide range of financial management services including capital improvements financing, rate making and bond services, as well as performing economic and financial analyses of alternatives, identifying sources of financing, and preparing applications for funding.

Team member, David Green, based in CH2M's Fort Lauderdale office, manages and provides senior consulting services to both public and private clients in the areas of economic and financial analysis. He is a regional economist with a wide range of experience performing economic and financial studies, including conducting cost of service analyses and setting rates for utilities, utility regionalization and valuation studies, marketing and demand studies, economic impact analyses, and economic and financial feasibility studies, as well as other types of economic and financial services.

Representative Southeast Florida clients include the Cities of Fort Lauderdale, Boca Raton, Miami Beach, North Miami Beach, Fort Pierce, Boynton Beach, Margate, Cooper City, and West Palm Beach, and the Counties of Miami-Dade, Palm Beach, Indian River, and Monroe. *Through his work on the City of Fort Lauderdale WaterWorks 2011 Water and Wastewater Capital Improvements Program (CIP), the City achieved higher bond ratings and reduced commercial interest rates, resulting in $50 million in savings.*

Mr. Green has in-depth knowledge and experienc in the development of computerized financial planning, cost allocation, rate design, system development charge or impact fee, and/or demand forecasting models for many of these clients. He has also assisted in negotiation of contracts with wholesale suppliers, users, industries, and

state and federal regulatory agencies, and in the preparation of revenue bond feasibility reports and grant and loan applications.

World Leader in Sustainable Practices

At CH2M, we embed sustainable principles into everything we do, developing solutions that respond to critical global issues, our clients' business realities, and the values important to stakeholders. We apply our whole systems approach and technical expertise to turn sustainability strategy at the corporate board level into action. By integrating sustainability principles into each step of the project, we help clients develop creative ways to solve complex challenges, maximize shareholder value, and benefit communities for the long term. Because our firm works throughout the entire project lifecycle, from initial conception and planning through design, construction, operation, management, and eventual decommissioning, we understand how each input affects the whole project. This knowledge helps clients tie the disparate pieces together to deliver lasting, holistic solutions.

D) CH2M's Proven Track Record of Implementing Projects Similar in Scope to the City's Utilities Comprehensive Master Plan

For nearly 70 years, CH2M has been providing the full range of water and wastewater services to clients in Southeast Florida (our first area office was established in West Palm Beach in 1953). We are confident that our team brings to the City an unmatched depth of knowledge, experience and technical excellence, as well as a firm, long standing commitment to the Southeast Florida community.

In this section, we have highlighted a number of representative projects that we have completed, or that are in progress, and that include tasks and goals similar to those outlined in the City's Solicitation. Past Performance references are included in Tab 6 of this submittal.

Similar Projects

Extensive experience in planning and modeling for water and wastewater master plans ensures that best practices are applied to the City of Pembroke Pines' project. The table below summarizes the scope elements relevant to the City's Utilities Comprehensive Master Plan Services contract and provides numerous CH2M HILL projects where we have performed these services. Project descriptions that follow the table provide additional details on many of the projects listed.

WATER AND WASTEWATER MASTER PLANNING PROJECTS (Client/Project Name)	Master Planning	Historical Verification	Water Demand Forecasting	Hydraulic Modeling	Water Quality Modeling	Inflow/Infiltration Evaluation	Systems Evaluation	Permits Status Evaluation	Water Conservation Evaluation	Energy Conservation Evaluation	Capital Projects Prioritization	Asset Management	Financial/Bond/Rate Study
Water & Wastewater Master Plan, City of Bonita Springs, FL	♦		♦	♦	♦		♦				♦		
Water Master Plan, City of Cocoa, FL	♦		♦	♦			♦				♦	♦	
Water Master Plan, Key West, FL	♦	♦	♦	♦			♦		♦		♦		♦
Ocean Outfall Legislation Program, Miami-Dade County, FL	♦	♦		♦			♦	♦			♦		♦
Sewer System Management Plan and Master Reuse System Master Plan Update, Pasco County, FL	♦		♦	♦	♦		♦	♦			♦		
Water and Wastewater Capital Improvement Plan Seminole County, FL	♦							♦			♦	♦	♦
Wet Weather Overflow Mitigation Program - Phase I & II City of St. Petersburg, FL		♦		♦		♦	♦						
Seminole Tribe Master Plans, Hollywood, FL	♦	♦	♦					♦	♦		♦		
Water Master Plan, North Miami Beach, FL	♦		♦	♦			♦						
WaterWorks 2011 Water and Wastewater Improvements Program Ft. Lauderdale, FL	♦	♦	♦				♦	♦			♦		♦
South District WWTP Renewal and Replacement Upgrades Miami, FL		♦	♦			♦	♦				♦		♦
WTP Evaluation & Master Plan, City of Melbourne, FL	♦	♦	♦				♦	♦				♦	
WTP Evaluation & Expansion Planning, Ave Maria, FL	♦		♦				♦				♦		
WTP Expansion, City of Marco Island, FL	♦		♦				♦	♦					
Green Meadows WTP Expansion Pilot Study & Master Plan Lee County, FL	♦	♦	♦				♦						

Water and Wastewater Master Plan, City of Bonita Springs, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Master planning - water and wastewater treatment and conveyance systems
- ✓ System evaluations
- ✓ Water demand forecasting
- ✓ Hydraulic modeling
- ✓ Project prioritization

Completed on time and under budget in 2017

Key Team Members:
Joe Elarde, PE – WTP Evaluation

Bonita Springs Utilities manages a 60-square-mile water and wastewater franchise that includes all of the City of Bonita Springs as well as some surrounding areas of unincorporated Lee County.

Because of recent and forecasted growth BSU required an updated utility master plan to continue to provide sustainable, high quality water and wastewater services without over, or underbuilding. *This water and wastewater master plan provided a comprehensive evaluation of the water and wastewater treatment and conveyance systems and presented recommended improvements to address current and future needs.* It included development of future water demands and wastewater flows to 2030, discussion of specific projects needed to meet those flows, and an updated, 15-year capital improvement plan (CIP).

The master plan detailed *water demand projections* using a parcel based approach to determine demands on existing development areas and then applying those demands to new areas based on similar existing commercial or residential types and densities. Once new and existing water supplies were evaluated, new water demands were established, CH2M developed a plan that would best meet future needs from a cost, environmental, sustainability, and permitting perspective.

After establishing demands and source water, water treatment expansion alternatives were compared to meet BSU's *water quality objectives* and which would provide the lowest net present value. Similarly, wastewater treatment expansion alternatives where compared to meet BSU's reuse *water quality criteria,* operability requirements, at the lowest net present value.

In addition to water source and treatment evaluations, CH2M performed *hydraulic modeling of both the water distribution and wastewater forcemain* system using Innovyze InforWater, a GIS based software system that used BSU's well implemented ArcGIS information.

The modeling including fire flow evaluation on existing and future systems along with field evaluations and data collection to calibrate the model. Once completed, *CH2M provided model training to BSU staff so that BSU can maintain and update the model as needed.*

Water Master Plan
City of Cocoa, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Water master planning
- ✓ Condition assessment
- ✓ Water demand projections
- ✓ Hydraulic modeling
- ✓ Long-term capital planning

Completed on time and under budget in 2013

Key Team Members:

Mike Witwer, PE – Master Planning/Process Options Review
Didier Menard, PE – Public Involvement Task Lead, CIP
Brian Skeens, PE – Quality Control, Districution/Collection
Steve Riley, PE – Hydraulic Modeling, Water Transmission

In 2010, the City of Cocoa retained CH2M to develop a Fixed Asset Inventory and Condition Assessment for the utility's assets. Having identified the need for a more robust capital planning process, CH2M was tasked with developing a long-term capital plan and pipeline renewal and replacement (R&R) framework that would address water system capacity, reliability, and O&M needs. CH2M worked closely with utility personnel to develop the *capital plan for the supply, treatment, and distribution components of the water system.*

An asset management framework was also developed to identify and track overall system performance criteria to identify capital needs in a robust, risk-based approach. This approach to managing, improving, and expanding the utility's assets was based on the risk of failure posed by the assets to the City and its customers. It is helping the City prioritize improvements to the highest risk assets while balancing the financial impacts to its customers to fund the required projects.

CH2M's master planning tasks included an evaluation of facilities, development of a capital improvement plan, and a pipeline renewal program that addresses both hydraulic capacity and physical condition deficiencies. The capital plan focuses not only on the capital needs for the existing system, but also incorporates anticipated growth within the service area and potential future regional partners.

The capital plans were developed in partnership with City leadership, key Utilities staff, the Finance Department, and the City's water and sewer rate consultant to include an approved financial strategy and schedule for implementation based on the prioritization of utility assets by their criticality.

A preliminary *condition evaluation* performed on a portion of the City's water and wastewater system's vertical (above ground) assets included visual evaluation of the various unit processes, along with interviews with O&M staff, and a review of facility records. Estimates of useful remaining life for the facilities were made using standard R&R intervals adjusted to reflect the condition evaluation results.

The CH2M team also developed a *hydraulic model* of the Cocoa's water system based on Innovyze's InfoWater® platform. The modeling efforts included data collection, model development, calibration, hydraulic and water quality evaluations, and improvements planning. After construction and calibration of an all-pipes hydraulic model containing over 40,000 pipe segments, the hydraulic model was also used to develop a detailed risk assessment analysis for all pipes in the network.

In 2017, CH2M was awarded a contract to update the Capital Plan for the City's Water System. This project will cover infrastructure related to water supply, treatment, storage, pumping, and transmission. Specific services we will provide include: Project Approach & Information Needs Review; Water Demand Projections; Planning Criteria Development; Risk Prioritization of Assets; Supply System; Water Treatment Evaluation; Water Storage, Pumping and Transmission/Distribution System Evaluation; and Capital Plan Development.

Water Master Plan
Key West, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Water master planning
- ✓ Water demand projections
- ✓ Financial analysis
- ✓ Hydraulic modeling
- ✓ Conservation measures
- ✓ Long-term capital planning

Completed on time and under budget in 2006

Key Team Members:
Diana Francois, PE – Assistant Construction Manager

CH2M developed a 20-year master plan for potable water facilities for the Florida Keys Aqueduct Authority's (FKAA) service area. *The purpose of the master plan was to provide FKAA with guidance and recommendations for prioritization of its $30 million water system capital improvements and expansion programs during the 20-year period from 2006 through 2025.* The master plan included a financial analysis to help prioritize and sequence the improvements so that they will have a minimal impact on water rates.

Using population and water demand projections that CH2M developed for the Initial Capacity Analysis Report and the latest LEC Regional Water Supply Plan flow projections and historical water use records, we *updated population and water demand projections* for FKAA's service area.

Population projections included permanent and seasonal population forecasts in 5-year increments through year 2025.

CH2M *evaluated the water supply, water treatment, and water transmission and distribution systems.* Water quality data from the Biscayne aquifer—FKAA's current water source—and the Floridan aquifer—its potential future water source—was evaluated. Also, raw water supply and water treatment facilities at the J. Robert Dean Water Treatment Plant (WTP) and the emergency desalination facilities at Stock Island and Marathon Keys were assessed.

As part of the water system evaluation, CH2M evaluated alternative water supply sources, including a proposed timeline for implementation of aquifer storage recovery (ASR) and reverse osmosis (RO). The cost and benefits of augmenting existing WTP capacity through ASR or by using Floridan aquifer blending wells was part of this analysis.

CH2M also *assessed the condition and performance of FKAA's transmission and distribution system based on existing maintenance information, site visits, and interviews with FKAA staff.* This information was input to a database and a condition assessment was made in terms of equipment reliability, age, and condition. Using the information developed during these studies, CH2M identified the new and improved water system facilities and their associated capital and O&M costs for the upgrading and timing of upgrades to meet FKAA's near-term and long-term needs.

Using the results of the water master plan as the basis, CH2M provided planning, design, and construction phase services for FKAA's CIP projects.

Ocean Outfall Legislation Program, Miami-Dade County, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Water master planning
- ✓ Water demand projections
- ✓ Financial analysis
- ✓ Hydraulic modeling
- ✓ Regulatory compliance
- ✓ Conservation measures
- ✓ Long-term capital planning

Program Ongoing: 2014 to 2026

Key Team Members:
Randy Boe, PE – Process Engineer
Cristina Ortega-Castineiras, PE – Project Engineer
Susan Moisio, PE – Conveyance Leader
David Green – Senior Economist

The Miami-Dade Water and Sewer Department is the largest water and sewer utility in the southeastern United States and serves nearly 2.3 million residents and thousands of visitors on a daily basis. Staff works 24/7 providing high- quality water and wastewater services, protecting public health, and acting in the best interest of the environment.

In 2008, the Florida Legislature approved and the Governor signed a law requiring all wastewater utilities in southeast Florida that use ocean outfalls to dispose of treated wastewater to reduce nutrient discharges by 2018, cease the use of outfalls by 2025, and reuse 60 percent of the wastewater flows by 2025. As a result of this mandate, WASD is implementing systemwide wastewater facility upgrades through the OOL program.

As Owner's Representative, CH2M is *responsible for system master planning,* as well as managing the overall delivery of a comprehensive, technically sound, long-term program that encompasses the design, procurement, construction, and commissioning of an estimated 60 major capital projects.

In preparation for this effort, the CH2M team gathered available information for the existing wastewater treatment plants (North District WWTP, South District WWTP, Central District WWTP), including record drawings, operational data, and site visits. The team also performed field inspections and assessments by multiple engineering disciplines at each of the facilities to update previously *prepared condition assessment reports, providing a firm foundation on which to base evaluations and make planning decisions.*

A Preliminary Engineering Report (PER) was prepared for a baseline approach to fulfilling OOL requirements, which encompassed improvements at all three WWTPs (alternative was selected as part of the original OOL Compliance Plan). In parallel with this effort, flow projections were validated and updated considering the impacts of the climate change and sea level rise.

Conveyance tasks to support the rerouting of wastewater flows include the validation of the hydraulic model inputs and validation of the pump station and force main projects. CH2M used WASD's InfoWorks *hydraulic model* to plan and design the conveyance rerouting projects. First, we validated the inputs into the model, which was achieved by development of a template to plot the system response to multiple storms. The results of the validation of these flows found that the process for developing the inputs was sound, but the data itself was not reliable.

The CH2M team also evaluated the impact of climate change on the selected design storm and SLR on groundwater infiltration. The result of this analysis is more confidence in the flows that will be used to design the projects that will meet the goals of the OOL. *CH2M's conveyance team also validated the sizing, route, configuration, and impacts to the conveyance system* of the planned new West District WWTP and other OOL projects.

Sewer System Management Plan and Master Reuse System Master Plan Update, Pasco County, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Wastewater and reclaimed water master planning
- ✓ Alternatives analysis for improvements for the next 20 years
- ✓ Hydraulic modeling
- ✓ Regulatory compliance
- ✓ Conservation measures
- ✓ Long-term capital planning

Completed on time and under budget in 2013

Key Team Members:
Rafael Vazquez-Burney – Environmental Engineer & Permitting

Pasco County is one of the fastest growing counties in the U.S. The rapid growth in both residential and commercial development has placed a significant strain on the County's water and wastewater utility, which provides service throughout an approximately 745-square-mile area.

Over the past 10 years, *CH2M has assisted the County with the development of a Sewer System Management Plan (SSMP) and an update to the Master Reuse System Master Plan.*

CH2M worked with Pasco County to prepare and submit wastewater treatment facility capacity analysis reports (CAR) for its active wastewater treatment facilities. The reports required data collection and evaluation of the existing flow condition and future flow conditions, project dates for incremental expansions to facilities, and preparation of baseline schedule for compliance with activities stipulated in FAC 62-600.405.

Building on the information obtained from the annual CAR updates, CH2M worked with Pasco County to prepare the SSMP (Sewer System Management Plan). The SSMP provides a plan and schedule for continuous improvements to management, operations, and maintenance of the County's wastewater collection system. The SSMP tracks continued improvement of the wastewater collection system, including the documentation of maintenance and updates.

CH2M recently updated the County's Master Reuse System (PCMRS) Master Plan to provide the operating strategy and associated capital projects to allow the PCRMS to remain viable as a non-surface water discharge permitted regional reuse system for the next 20 years.

The PCMRS is a complex system consisting of approximately 26 mgd of slow-rate public access reuse systems and 12 mgd of disposal capacity through rapid rate infiltration basin systems (RRIBS). Seven wastewater facilities discharge public access quality reclaimed water into the PCMRS, six of which are owned by the County and one that the County co-owns with the City of New Port Richey.

This project included an alternatives analysis and recommendations on how to expand and operate the system for the next 20 years. We provided cost, policy, and a hydraulic model analysis for three alternatives, as well as a recommended implementation plan. The recommended plan included development of an additional 10 mgd of wet weather disposal and groundwater recharge via a new regional RRIBS, integration of a new 500-MG reservoir to increase the utilization of reclaimed water, and *installation of new transmission systems* to optimize the movement of reclaimed water through the system.

Water and Wastewater Capital Improvement Plan, Seminole County, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Water and wastewater master planning
- ✓ Financial analysis
- ✓ Regulatory compliance
- ✓ Asset Management
- ✓ Long-term capital planning

Completed on time and under budget in 2014

Key Team Members:
Didier Menard, PE – Public Involvement Task Lead
Brian Skeens, PE – Technical Lead, Water Quality Master Plan
Steve Riley, PE – Engineering Manager
JD Solomon, PE, CRMP – Project Director

The Seminole County CIP consisted of 200 projects more than $300 million entailing the modernization and expansion of potable water, sanitary and reclaimed water infrastructure using a program management approach implemented by a dedicated team led by CH2M. *CIP delivery services provided included: master planning, permitting, design management, procurement support, construction management, schedule and cost control, document controls, asset management, funding strategy development, cost benefit analysis, cost estimating, public outreach, and data management systems.* The program management processes, tools, and skills developed during execution of the program set the stage for Seminole County to continue with implementation of additional capital improvements beyond the first 8 years of the program.

CH2M assisted Seminole County with development of a long-term integrated water resource plan that includes future alternative water supply and implementation of recommended components of a water quality master plan.

Seminole County's continued growth required expansion of the County's existing wastewater facilities that includes reclaimed water projects. A new surface water treatment plant drawing up to 45-mgd of water from the St. Johns River is initially being used to supply reclaimed water to Seminole County and has the capability to convert to a potable water plant in the future. This plant was planned, designed and permitted by CH2M. Other projects managed and executed in the program included water reclamation facility improvements, wastewater collection and distribution projects, pump station replacements and residential reclaimed retrofits.

Seminole County's asset management program is being implemented at the back-end of its major capital program to streamline business processes and develop proactive engineering and O&M approaches.

CH2M has been responsible for a broad range of tasks, including asset management technology assessments, evaluation of current maintenance processes, providing maintenance and reliability best practices training, development of new facility maintenance plans, enterprise reevaluation of levels of service and performance measurements, development of a new CIP prioritization system, development of 20-year asset renewal and replacement (R&R) model, business case evaluation program, and integrated financial plan.

To sustain the asset management program, CH2M worked with the County to establish a culture of asset management within the organization. This included establishing a Maintenance Council, which involved management and non-management personnel, to develop, review, and improve the current maintenance strategy to be deployed throughout the organization.

Wet Weather Overflow Mitigation Program - Phase I & II, City of St. Petersburg FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Systems evaluation
- ✓ Infiltration/Inflow evaluation
- ✓ Hydraulic modeling

Ongoing Program: 2017 to 2022

Key Team Members:

Susan Moisio, PE – Conveyance lead; Hydraulic Modeling lead

In early August 2015, the City of St. Petersburg experienced sewer overflows in response to a significant wet weather event. Under the City's Wet Weather Overflow Mitigation Program (WWOMP) that was established to address future overflows, CH2M was contracted to identify the most cost-effective solution to mitigate potential future wet weather overflows from the City's collection system and from the City's three Water Reclamation Facilities (WRFs). This program has been implemented in two phases, both of which have been performed by CH2M.

Phase I. Under Phase I, CH2M used the data available at the time to perform a holistic assessment of the City's wastewater infrastructure and to develop and compare infrastructure alternatives to achieve overflow mitigation. *Alternatives included removal of infiltration and inflow (I/I) from the collection system, improvements at the WRFs, such as expansion of hydraulic capacity implementation of wet weather treatment at the WRFs or an increase in storage and injection well disposal capacity, or some combination of these alternatives.* To support the alternatives analysis, current levels of I/I in the collection system were estimated using WRF inflow data, and budgetary cost curves were developed for increasing levels of I/I removal compared to increasing levels of conveyance and treatment capacity. The Phase I study concluded that improvements to the WRFs are the most cost-effective solution to mitigating potential future overflows and that collection system rehabilitation for I/I removal should be performed system-wide to reduce wet weather flows, ensuring wet weather flows do not increase over time.

Under Phase I, CH2M performed the following key services:

- Data collection and analysis to support a comprehensive system evaluation.
- Assessment of existing *collection system hydraulic model* for suitability in supporting a system wide I/I and capacity analysis.
- Evaluation of WRF hydraulic restrictions.
- Alternatives analysis to determine the most cost-effective means to mitigate future overflows.
- Development of *long term and short-term action plans* to address both WRF improvements and I/I mitigation as well as to develop associated costs.

Phase II. Under Phase II, CH2M is developing the tools to assist the City in targeting sewer rehabilitation efforts for the purposes of I/I mitigation. Phase II consists of a large-scale flow monitoring effort, *update of the collection system model, a capacity analysis of the collection system,* and prioritization of sewer basins for removal of I/I.

Under Phase II, CH2M has completed the following key services to date:

- Design and implementation of a major flow monitoring program to collect data to support the *calibration of the collection system model.* The program consisted of the deployment of 91 flow monitors, groundwater monitoring at 12 wells, and the collection of rainfall data at 8 rain gauges.
- I/I characterization of the flow data and identification of the areas of the collection system that generate the most significant I/I.
- Analysis of groundwater data and evaluation of impacts of tide/sea level rise on groundwater levels.
- Update, calibration, and validation of the City's InfoWorks ICM SE *hydraulic model.* Once the model update is complete, a capacity analysis of the collection system will be performed. This analysis will include estimation of the impact of future conditions such as sea level rise and climate-adjusted rainfall.

Seminole Tribe Master Plans
Hollywood, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Master planning
- ✓ Systems evaluation
- ✓ Facility evaluation
- ✓ Capital projects prioritization

Ongoing Program: 2013-present

Key Team Members:

GJ Schers, PMP – Project Manager
Diana Francois, PE – Task Lead
Mark Lucas, PG - Hydrogeologist
Raul Alfaro, EIT - Engineer
Steve Riley, PE – Design Engineer
Mike Witwer, PE – Lead Technologist - Water

The Seminole Tribe of Florida's Capital Improvement Program (CIP) includes projects to increase capacity, correct major deficiencies in the water and wastewater systems, and improve water quality. CH2M, as Program Manager, is tasked with implementation of water and wastewater CIP projects, staff augmentation, processes and tools development, and master planning to support the Public Works Department (PWD).

The program started with the initiation of several Immediate Action projects. The immediate action projects were selected to address safety issues, streamline operations, improve water quality, increase treatment capacity to support future growth, define future improvements at key facilities, and provide Master Planning. In addition to the immediate-action projects that were initiated to address high-priority operational needs, the PWD has conducted yearly department-wide needs assessment of plants and facilities.

Several master plans were developed in FY 2013 for the water (WTP) and wastewater treatment plants (WWTP), solid waste management, and SCADA controls systems. These master plans provide information and analysis necessary for the Tribal Community's infrastructure long-term planning using a phased approach. This planning methodology ensures that operational and capital costs are commensurate with the forecasted Tribal growth and needs. The CIP and master plans will be regularly updated to reflect changes in service demands, infrastructure condition, emerging goals, and priorities.

Water Master Plan
North Miami Beach, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Master planning
- ✓ Systems evaluation
- ✓ Facility evaluation
- ✓ Hydraulic modeling

Ongoing Program: 2015 - present

Key Team Members:

GJ Schers, PMP – Project Manager
Mark Lucas, PG – Lead Hydrogeologist
Raul Alfaro, EIT – Engineer
Juan Aceituno, PE – Deputy PM
Steve Riley, PE – Transmission/Collection
Diana Francois, PE – Modeler
Cristina Ortega- Castineiras, PE – Process Engineer

Since 2015, CH2M has worked with NMB Water to develop a Water Master Plan that includes improvements to increase capacity and redundancy, enhance the operations and long-term viability of the water supply, treatment, and distribution facilities. The work covered the Norwood WTP Condition Assessment and Strategic Site Layout Report, which identified and prioritized several additional multi-faceted projects. Furthermore, CH2M has provided Operations and Maintenance oversight at the WTP, supporting the City's water production team in addressing critical day-to-day operational concerns. The finished water is a blend from lime softening, NF and reverse osmosis (RO) treatment trains, and membrane bypass streams and, dependent upon operations, can vary based on flows from each train.

Since summer 2017, CH2M has begun implementing the projects identified in the Master Plan in a phased approach, addressing urgent R&R work, short-term capacity, and redundancy improvements focusing on membrane trains and long-term improvements to mainly the lime softening train. Improvements to membrane trains include the addition of sand separators, feed pumps, a NF train and expansion of existing NF and RO skids.

Improvements to the lime softening train include the addition of a new treatment units, filters and chemical building and modernizing the electrical supply and distribution system and control system.

WaterWorks 2011 Water and Wastewater Improvements Program Ft. Lauderdale, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Capital improvement program
- ✓ Systems evaluation
- ✓ Facility evaluation
- ✓ Financial/Bond/Rate Study

Completed 2010 (delivered 1 year ahead of schedule)
Key Team Members:
David Green – Financial Lead
Gerrit Bulman, PG – Hydrogeologist
Diana Francois, PE – Engineer
Randy Boe, PE – Process engineer

The City of Ft. Lauderdale selected CH2M as its water and wastewater CIP and construction management delivery partner and developed an innovative delivery process to compress the 20- year CIP into the 10-year, $690 million WaterWorks 2011 program. The program included $212 million in improvements to the water system and $354 million for improvements to the wastewater system. As a result of the magnitude of the work to be accomplished under the program, the City partnered with CH2M for program management and construction management services for various finished water, wastewater transmission, and treatment projects.

Program successes included:

- Coordinated the efforts of more than 565 projects, including design and construction management of ~300 projects primarily for pipeline construction and street works throughout the City.
- Managed to schedule and budget using rigorous schedule and cost controls, change and risk management strategies, and aggressive change order mitigation—achieving a 1-percent change order rate and program completion 1 year ahead of schedule.
- Value engineering assessments identified more than $12 million savings during construction of the conveyance system; other saving strategies, including low cost financing, aggressive change management, prompt claims negotiations, and work repackaging saved the City more than $92.5 million.
- Provided significant coordination with city departments, and county and state agencies.

South District WWTP Renewal and Replacement Upgrades Miami, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Systems evaluation
- ✓ Collection/distribution
- ✓ Wastewater planning
- ✓ Financial

Ongoing Project: 2007-2022
Key Team Members:
Juan Aceituno, PE – Project Manager
Todd Williams, PE – Senior technologist
Randy Boe, PE – Process engineer

Since 2007, CH2M has partnered with WASD to deliver 26 renewal and replacement (R&R) projects for the existing facilities valued at $30.8 million at the SDWWTP. We have provided project management services; engineering; permitting; cost estimating; financial analysis; and construction management services.

As part of WASD's Environmental Protection Agency (USEPA) Consent Decree, a wastewater transmission improvement project was required to convey flows from South Dade County, the City of Homestead, and Florida City to the SDWWTP.

A field condition assessment of the existing 54-inch-diameter force main by others recommended immediate rehabilitation of the pipeline. CH2M assisted WASD with preliminary planning and engineering for this critical transmission force main, which had no redundancy. CH2M provided engineering design services for the new pipeline and criteria for rehabilitation of the existing force main.

Before beginning the design, our first priority was to conduct an analysis of the force main's current route. Using our proven, successful route analysis approach, CH2M identified four new potential routes before selecting the final route for the new force main.

After completion of the route evaluation and preliminary design, CH2M provided complete engineering design services for the preparation of contract documents for construction of approximately 4 miles of a new 54-inch-diameter PCCP force main. We also developed the 60-percent design for rehabilitation of the existing 54-inch-diameter force main serving the SDWWTP for approximately 2.5 miles.

WTP Evaluation & Master Plan
Melbourne, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Systems evaluation
- ✓ Facility evaluation
- ✓ Master planning
- ✓ Asset management

Ongoing Program: 2017 to 2018 (Phase 1)

Key Team Members:

GJ Schers, PMP – Project Manager
Joe Elarde, PE – Water Treatment

The City of Melbourne has partnered with CH2M to perform a water production evaluation and prepare a Master Plan that includes the following Tasks:

- Project kickoff and management
- Evaluation of regulations
- SCADA systems
- Water demand projections
- Existing facility evaluation

WTP Evaluation & Expansion Planning
Ave Maria, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Planning
- ✓ Water demand projections
- ✓ Systems evaluation
- ✓ Wastewater collection/distribution
- ✓ Financial

Completed December 2015

Key Team Members:

Joe Elarde, PE - Project Manager

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

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

This project evaluated the planned phasing and expansion requirements of the WTP, WWTP, and disposal facilities. Using the updated AMUC demand projections, CH2M reviewed the facility phasing, defined expansion requirements and made recommendations for facility expansion/upgrades based on the new build-out requirements. CH2M also provided planning level costs for all three facilities to assist AMUC in the continued planning of the Ave Maria facilities.

NWTP Expansion
City of Marco Island, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Systems evaluation
- ✓ Facility evaluation

Completed October 2017

Key Team Members:

Joe Elarde, PE – Project Manager

The Marco Island Utilities (MIU) operates the North Water Treatment Plant (NWTP) that is a 6.67 mgd lime softening and microfiltration (MF) membrane filtration facility that that treats raw water from Marco Lakes surface water supply using lime softening and microfiltration.

The original NWTP MF system included four trains installed initially with space and accommodations for two additional trains to be installed in the future. While the existing 4 trains are designed to treat the full 6.7 mgd capacity of the lime softening system, they can do so only by reducing treatment capacity when a train is down for cleaning or maintenance. As the membrane modules have aged and productivity has decreased, this limitation has led to operational challenges.

CH2M provided the design and bidding engineering services to add the additional MF trains to complete the full capacity of the existing MF building. CH2M worked directly with multiple membrane suppliers and local contractors to quickly design and procure the additional MF capacity to meet an accelerated schedule.

Green Meadows WTP Expansion, Pilot Study, and Master Plan, Lee County, FL

Relevance to Pembroke Pines' Contract/ Special Features

- ✓ Master planning
- ✓ Permit evaluation
- ✓ Facility evaluation

Completed October 2017

Key Team Members:

Joe Elarde, PE - Senior Process Reviewer and Commissioning Consultant
Mike Witwer, PE - Lead Project Technologist and Pilot Plant Manager

CH2M conducted pilot studies and master planning of an expansion of the existing 9-mgd WTP. Piloted processes included low-pressure reverse osmosis for softening multiple fresh water sources, reverse osmosis for desalinating brackish well water, ion exchange for organics and iron removal, and strainers for sand and silt reduction. The Master Plan evaluated process options to determine the most robust and cost-effective option for expansion, as well as the expanded facility capacity. CH2M performed a regulatory review and worked with Lee County Health Dept. to allow for a temporary increase in rated capacity until expansion of the facility occurs.

E) Firm Licenses

Copies of our firm's licenses relevant to the scope of work for this project are provided below.

State of Florida

Board of Professional Engineers

Attests that

CH2M Hill Engineers, Inc.

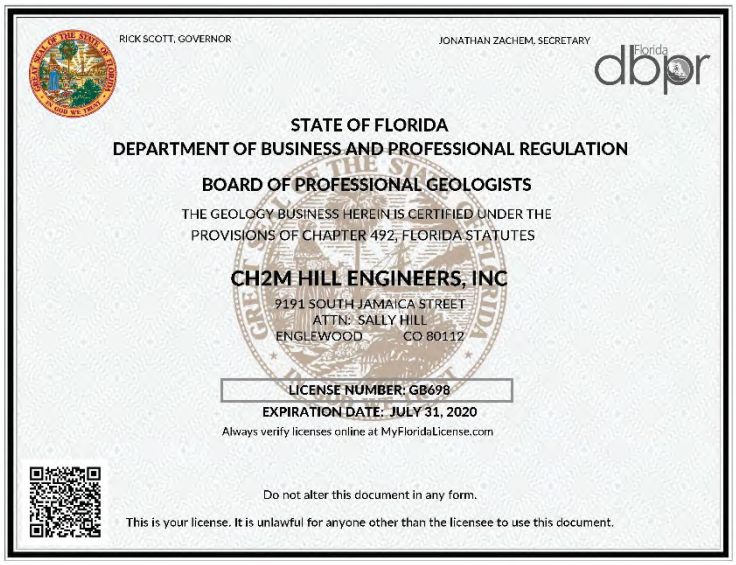
FBPE FLORIDA BOARD OF PROFESSIONAL ENGINEERS

Is authorized under the provisions of Section 471.023, Florida Statutes, to offer engineering services to the public through a Professional Engineer, duly licensed under Chapter 471, Florida Statutes.

Expiration: 2/28/2019

Audit No: 228201902457 R

CA Lic. No: 25861



RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

Florida dbpr

STATE OF FLORIDA

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL GEOLOGISTS

THE GEOLOGY BUSINESS HEREIN IS CERTIFIED UNDER THE PROVISIONS OF CHAPTER 492, FLORIDA STATUTES

CH2M HILL ENGINEERS, INC

9191 SOUTH JAMAICA STREET
ATTN: SALLY HILL
ENGLEWOOD CO 80112

LICENSE NUMBER: GB698

EXPIRATION DATE: JULY 31, 2020

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

State of Florida

Department of State

I certify from the records of this office that CH2M HILL ENGINEERS, INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on January 7, 2004.

The document number of this corporation is F04000000108.

I further certify that said corporation has paid all fees due this office through December 31, 2018, that its most recent annual report/uniform business report was filed on April 16, 2018, and that its status is active.

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

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Thirteenth day of June, 2018

Secretary of State

Tracking Number: CU8141848606

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

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

TAB 4

Qualifications and Experience of Key Personnel

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Tab 4 -Qualifications and Experience of Key Personnel

A) Qualifications of the Project Team

Team Organization

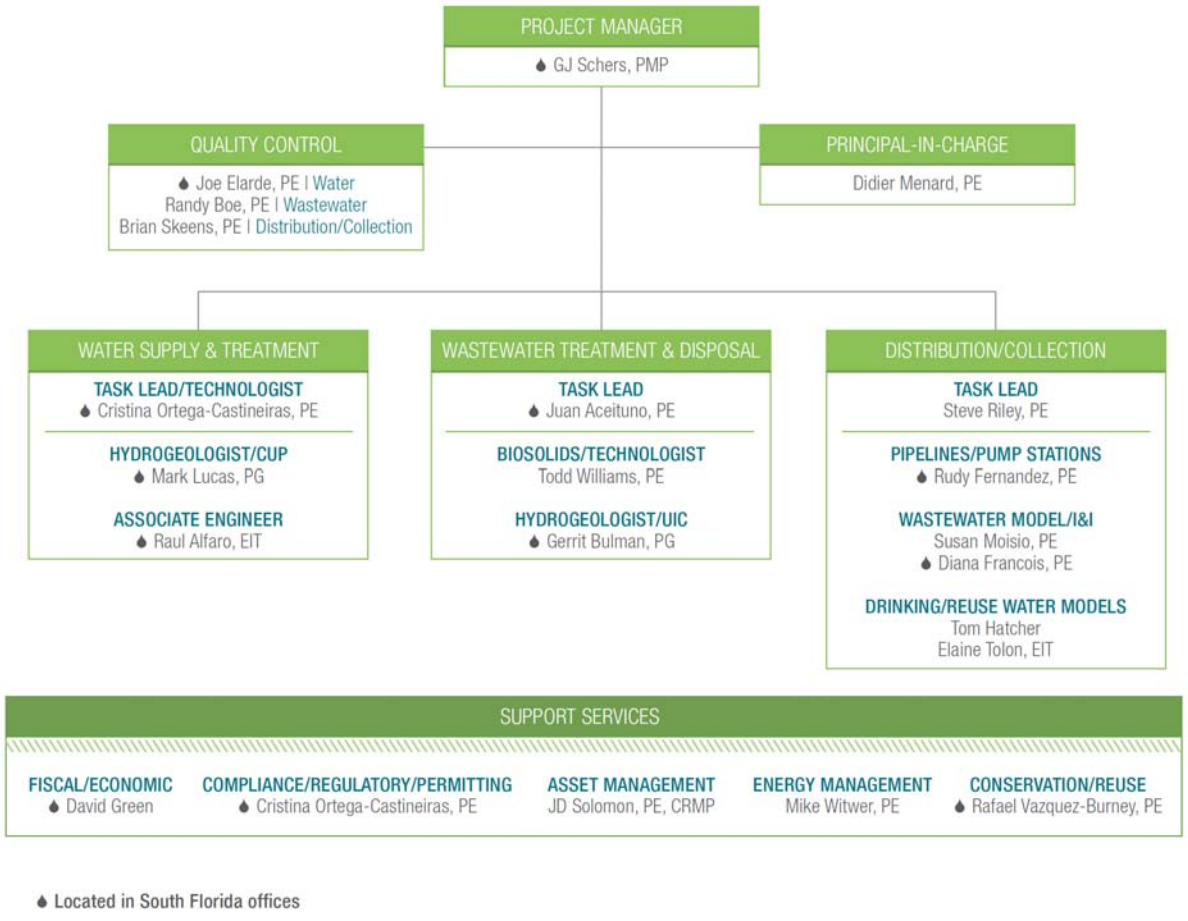
The CH2M team consists of individuals with an understanding of the City's water and wastewater infrastructure, are mostly located in our South Florida offices, as noted on the Organizational Chart below, and are national experts in utility master planning. Their professional credentials and experience will be focused on your short- and long-term goals and identification and prioritization of sustainable improvements that minimize capital and life-cycle costs.

Project Manager GJ Schers, PMP, will be the point of contact with the City for this project. He will coordinate the team efforts, manage budget and schedule and communicate regularly with City staff during the project. GJ will apply his experience and knowledge of master planning and of the City's treatment processes, collection and distribution systems.

Principal-in-Charge Didier Menard, PE, will ensure that GJ has all the resources necessary for delivering the project. Didier is a member of CH2M's Florida leadership team, giving him access to available local, regional and state resources. He will work with GJ to address the City's staffing needs and will meet with you periodically to review project progress.

Quality Control experts Joe Elarde, PE; Randy Boe, PE; and Brian Skeens, PE, are highly experienced water and wastewater engineers with long careers serving Florida clients. With more than 68 years of combined experience, they will be resources to our team during master plan development, providing quality control reviews at key milestones during the project.

Task Leads Cristina Ortega-Castineiras, PE; Juan Aceituno, PE; and Steve Riley, PE, will lead the water supply & treatment, wastewater treatment and disposal, and distribution/collection consulting tasks, respectively. Our task leads will coordinate and manage their work efforts, providing information needed for the City to make wise business decisions regarding its infrastructure.



Team Members' Qualifications and Experience

The following table provides a list of proposed team members and summarizes their qualifications and experience working on similar master plans and providing water and wastewater services to Florida clients.

Team Member/Professional Licenses Project Role	Years' Experience	Similar Project Experience (Role/Project/Location)	Florida Water/Wastewater Experience													
			City of Pembroke Pines	City of Bonita Springs	City of Cocoa	Florida Keys Aqueduct Auth.	Lee County	City of Marco Island	City of Melbourne	Miami-Dade County	N. Miami Beach	Palm Beach County	Pasco County	Seminole County	Seminole Tribe	City of St. Petersburg
Project Management																
GJ Schers, PMP Project Manager	27	• Process Lead, Lime Softening WTP Bench Testing and 4-Log Virus Evaluation, Pembroke Pines • Process Lead, Water Master Plan & Norwood WTP Expansion, N. Miami Beach • Process Lead, RO WTP Expansion, Bonita Springs • Process Lead, Master Plan & RO Membrane Replacement, Melbourne	♦	♦	♦				♦		♦	♦			♦	
Didier Menard, PE Principal-in-Charge	19	• Public Involvement (PI) Task Lead, Miami Outfall Legislation (OOL) Program • PI Task Lead, Water Master Plan, N. Miami Beach • PI Task Lead, Water/WW CIP Program, Reclaimed Water, Seminole Co.			♦				♦	♦	♦			♦		
Joe Elarde, PE Quality Control - Water	20	• Process Lead, Master Plan $ RO WTP Membrane Replacement, Melbourne • PM, NWTP Membrane Expansion Planning/Design, Marco Island • Process Designer, Master Plan & RO WTP Expansion and Lime Softening WTP Improvements DB, Bonita Springs		♦	♦	♦	♦	♦	♦						♦	
Randy Boe, PE Quality Control Wastewater	26	• Process Engineer, S. District WWTP Oxy-gen Production Upgrades, Miami-Dade • Sr. Technology Consultant, S. District & Central District WWTPs, Miami-Dade • Sr. Technical Expert/QC, Black Ford WRF Upgrade, JEA		♦						♦					♦	
Brian Skeens, PE Quality Control - Distribution/Collection	22	• Sr. Technical Expert, Water Model & Master Plan, Cocoa • Technical Lead, Water Quality Master Plan, Seminole Co. • Sr. Technical Lead, Potable Water System Master Plan, Pasco Co.			♦								♦	♦		

Team Member/Professional Licenses Project Role	Years' Experience	Similar Project Experience (Role/Project/Location)	Florida Water/Wastewater Experience													
			City of Pembroke Pines	City of Bonita Springs	City of Cocoa	Florida Keys Aqueduct Auth.	Lee County	City of Marco Island	City of Melbourne	Miami-Dade County	N. Miami Beach	Palm Beach County	Pasco County	Seminole County	Seminole Tribe	City of St. Petersburg
Water Supply & Treatment																
Cristina Ortega-Castineiras, PE Task Lead/Technologist		• Process Engineer, WTP Lime Softening Optimization, Pembroke Pines • Process Engineering/PM, Water Master Plan & Norwood WTP Lime Softening Optimization, N. Miami Beach • Process Engineer, Concentrate Disposal Scaling Evaluation, Deerfield Beach	♦	♦						♦	♦				♦	
Mark Lucas, PG Hydrogeologist/CUP	35	• Hydrogeologist, Geochemical & Ground-water Monitoring, Boynton Beach • Hydrogeologist, Permitting of Production Wells, Seminole Indian Tribe • Hydrogeologist, Water Supply Master Plan, Deerfield Beach		♦							♦				♦	
Raul Alfaro, EIT Associate Engineer		• Associate Engineer, Clarifier Optimization, N. Miami Beach • Associate Engineer, Groundwater Rule Evaluation, Pembroke Pines	♦		♦				♦		♦				♦	
Wastewater Treatment & Disposal																
Juan Aceituno, PE Task Lead	24	• PM, District WWTP R&R: Cogeneration Facility Improvements, Miami-Dade • PM, SSES Phases I & II, Miami Beach • Sr. Technology Expert, Biosolids Management Alternatives, Collier Co.								♦	♦					
Todd Williams, PE Biosolids/Technologist		• Sr. Technology Expert, Biosolids Composting Permitting, Lee Co. • Sr. Technology Expert, Biosolids Management Alternatives, Collier Co. • Sr. Technology Expert, Solids Processing Cost Estimation Analysis, Miami-Dade					♦			♦			♦			
Gerrit Bulman, PG Hydrogeologist/UIC	15	• Hydrogeologist/PM, Injection Well Program Management, Miami-Dade • Hydrogeologist, Deep Injection Well System, Boynton Beach • Hydrogeologist, Deep Injection Well System, N. Miami Beach	♦	♦		♦				♦	♦				♦	
Distribution/Collection																
Steve Riley, PE Task Lead	39	• PM, Water/WW Master Plans, Seminole Tribe of Florida • PM, CIP Updates, Cocoa • Engineering Manager, CIP Program, Seminole County		♦	♦	♦	♦				♦	♦		♦	♦	

Team Member/Professional Licenses Project Role	Years' Experience	Similar Project Experience (Role/Project/Location)	Florida Water/Wastewater Experience													
			City of Pembroke Pines	City of Bonita Springs	City of Cocoa	Florida Keys Aqueduct Auth.	Lee County	City of Marco Island	City of Melbourne	Miami-Dade County	N. Miami Beach	Palm Beach County	Pasco County	Seminole County	Seminole Tribe	City of St. Petersburg
Rudy Fernandez, PE Pipelines/Pump Stations	40	• Pipeline Engineer, PCCP Force Main Condition Assessment, Palm Beach Co. • PM, Sewer system Evaluation & Improvements, Brevard Co.	♦			♦				♦	♦					♦
Susan Moisio, PE Wastewater Model/I&I	30	• Conveyance Leader, Hydraulic Model/ Capacity Assessment, Miami-Dade • Technical Lead, Wet Weather Overflow Mitigation Program, St. Petersburg								♦	♦					♦
Diana Francois, PE Wastewater Model/I&I	13	• Modeler, Water/WW Master Plan, N. Miami Beach • Task Lead, Water/WW Master Plan, Seminole Tribe of Florida									♦				♦	
Tom Hatcher Drinking/Reuse Water Models	4	• Hydraulic Engineer, CIP Update, Cocoa • Hydraulic Engineer, County Master Plan, Forsythe County, GA			♦						♦				♦	
Elaine Tolon, EIT Drinking/Reuse Water Models	4	• Design Engineer/Hydraulic Modeler, Norwood WTP Rehab, N. Miami Beach • Hydraulic Modeler, Water/WW Facilities, Seminole Tribe of Florida									♦				♦	
Support Services																
David Green Fiscal/Economic	40	• Sr. Economist, OOL Program, Miami-Dade • Financial Analyst, Water/WW & Storm-water Rate Analysis, Boynton Beach	♦	♦					♦	♦		♦			♦	♦
Cristina Ortega-Castineiras, PE Compliance/ Regulatory/Permitting		• PM, Norwood WTP Groundwater Rule Evaluation, N. Miami Beach • Process Engineer, SW WTP Groundwater Rule WTP Improvements, Sunrise	♦	♦						♦	♦				♦	
JD Solomon, PE, CRMP Asset Management	25	• Project Director, Asset Management Program, Seminole Co. • Project Director, Comprehensive Asset Management Program, Tampa Bay Water		♦	♦				♦		♦	♦	♦	♦	♦	♦
Mike Witwer, PE Energy Management	17	• Lead Project Technologist, Green Meadows WTP Expansion, Lee County • Process Mechanical Lead, Dyal WTP LOX Conversion, Cocoa		♦			♦	♦	♦		♦				♦	
Rafael Vazquez-Burney, PE Conservation/ Reuse	12	• PM, Beneficial Water Reuse, Pasco Co. • Water Reuse Technical Lead, Water Resources Master Plan, St. Petersburg • PM, Regional Public Water System Hydraulic Model/Master Plan, Pasco Co.											♦		♦	

Resumes of Team Members

Brief resumes for each team member are provided following this page.

B) PROJECT MANAGER'S EXPERIENCE

Our Project Manager GJ Schers, PMP, is a globally-recognized subject matter expert in water technology focused on hydraulic, civil and process engineering. He has been responsible for the planning and design of advanced water treatment processes, including ion exchange, ozonation, advanced oxidation, activated carbon filtration, membrane filtration, and ultraviolet light disinfection as well as conventional treatment processes like coagulation, softening, clarification, sand filtration, pumping systems, chemical feed systems, washwater recovery, and sludge treatment and dewatering systems. He has authored over 40 articles and/or papers with varying water treatment subjects, which were presented on state and national conferences. GJ has led fixed bed ion exchange projects in SE Florida for clients including the Town of Davie, Pembroke Pines, and Palm Beach County and worked on conventional lime softening plants for the Cities of North Miami Beach, West Palm Beach, Deerfield Beach, Cocoa, and Pembroke Pines, and Bonita Springs Utility.

He is currently finalizing a similar master plan assignment with the City of Melbourne and has delivered successfully utility master plans for the Cities of Marco Island, Cape Coral, North Miami Beach, and West Palm Beach

As a Project Management Professional and CH2M's U.S. South Drinking Water and Reuse Practice Lead and Senior Technologist, GJ is ideally positioned to be the City as the single point of contact for this contract. GJ will have the full support of the Principal-In-Charge Didier Menard and the team identified on the organization chart to assign tasks as needed to effectively deliver the master plan work. He is located in our Broward County office, and can be available on short notice for meetings and urgent project matters. He is committed to deliver this project.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

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GJ Schers PMP

Project Manager

EDUCATION

BS & MS, Civil Engineering, Delft University of Technology

PROFESSIONAL REGISTRATIONS

Project Management Professional (PMI, No. 428825)

RELEVANT EXPERIENCE

GJ is a globally-recognized subject matter expert in water technology with more than 27 years of diverse experience. He utilizes this experience to identify and apply best available technologies to treat water to a high standard for either human consumption or industrial use. GJ is actively involved in plant operations and improvements, and effectively interacts with regulatory agencies. His experience includes work with lime softening at North Miami Beach, Cocoa, Deerfield, and Bonita Springs, with ion exchange technology at Pembroke Pines, Davie, and Palm Beach County and work with distribution systems at Cape Coral, Peace River and North Miami Beach.

REPRESENTATIVE PROJECTS

Process Lead, City of Pembroke Pines, FL. Supporting operations at this lime softening treatment facility to optimize the treatment system through bench testing and to commission existing treatment components and integrate into existing operations.

Project Technical Lead, Ion Exchange Study, Town of Davie, FL. Completed a project to identify the origin of foul odor from a 4-mgd anion exchange system for color removal, develop alternatives to fix the problem and implement the preferred alternative. The work included visits to other ion exchange systems to review operational conditions, water quality data review and discussions with resin and system integration vendors. Phase 2 involved the implementation of the short-term solution involving the installation of a carbon dioxide system, and verification of its performance through bench-scale testing. Phase 3 included the technical assistance during the start-up. The ion exchange system is now operating successfully and has resolved the problem with foul odor.

Process Lead; Norwood Water Treatment Plant Expansion; North Miami Beach, FL. Identifying methods to comply with the Florida groundwater rule at an existing plant with three separate treatment trains involving lime softening, nanofiltration (NF) and RO treatment technologies. The work included bench test to define breakpoint chlorination for the groundwater, chlorine decay tests, and system distribution simulation test. Work continues with expansion to the membrane treatment systems.

Process Lead, Reverse Osmosis (RO) Water Treatment Plant Expansion; Bonita Springs Utility; FL. Providing treatment process services to design a 2-mgd expansion of an existing plant. The expansion involves the addition of sand strainers, modification of existing RO skids to accommodate additional membrane elements, modification to existing chemical feed systems, addition of a new degasifier and transfer pump.

Third Party Reviewer/Program Manager, Palm Beach County, FL. Reviewed design deliverables on the water program. The projects reviewed included a 14-MGD anion exchange treatment system expansion at WTP System 8, a study into finished water quality issues in the WTP System 11 system (Glades region), a study addressing existing deficiencies at the existing 10-MGD reverse osmosis WTP and a study to develop alternative off gas treatment systems to the existing chemical scrubbers.

Process Lead, RO Membrane Replacement and Plant Optimization, City of Melbourne, FL. Developing membrane specifications, bid support and professional services during construction. The work included a pilot plant study to verify the optimal RO membrane element for this particular application. As part of the study, process and controls improvements were suggested, so that an existing ongoing SCADA project can accommodate those in the future. The study also addressed the 4-log virus treatment requirement.

Process Lead, Concentrate Disposal Improvements, City of Deerfield Beach, FL. Developing alternative methods for transferring membrane concentrate streams to a deep injection well. The solution involves an in-line booster pump station to replace the existing wet-well pump station and was based on extensive chemical sampling and modeling which determined that the air-gap aeration caused metal precipitation in the disposal pipeline and wet well.

Project Technical Lead, Membrane Replacement Study, Boynton Beach, FL. Evaluated the condition of the 12-year-old NF (softening) membrane elements at the existing 10-MGD West WTP and analyzed alternatives for re-membraning. The work included assessment of membrane performance and water quality data, and review of the membrane autopsy report and existing operations. Software models were used to analyze the performance for the overall system and verify results with the water quality goals at the WTP.

Owner's Representative; Capital Improvement Program; Seminole Tribe of FL. Providing expert water treatment technology services for the improvements to the Brighton and Big Cypress water treatment plants. Both plants utilize reverse osmosis membrane and degasification technologies to treat highly mineralized and hydrogen sulfide containing ground water.

Project Technical Lead; Distribution Water Quality Study; Peace River/Manasota Regional Water Authority; FL. Completed a study reviewing the water quality in the Authority's regional water supply system, including transmission mains and distribution systems of member governments. Extensive data sets were reviewed to characterize the water quality of the finished waters of production facilities feeding into the regional system and to describe any water quality changes that take place. Based on the characterization of the existing water quality, blending scenarios were developed to predict distribution water quality changes in the future if and when changes are made at production facilities or in the operation of the regional system. Recommendations were made to improve the overall distribution water quality and to ensure compliance with all water quality standards.

Project Technical Lead; WTP Improvements; City of West Palm Beach, FL. Completed design of treatment modifications developed during bench/pilot plant investigations. The modified treatment process will include ultraviolet (UV) light disinfection and have a rated capacity of 50 MGD. Ancillary facilities include a 7500 kW new electrical/generator building, a new washwater recovery system, new chemical feed systems, new hardware and software SCADA system, and several other urgent projects to rectify existing deficiencies. Most of the ancillary facilities have been completed and are in operation.

Project Technical Lead; System 1A Reverse Osmosis WTP Expansion; Broward County, FL. Implemented the planning phase of an alternative water source system consisting of a 6 MGD brackish groundwater Reverse Osmosis WTP expansion for Broward County. Completed activities include wellfield siting, and investigations, permitting activities for the concentrate injection well, preliminary engineering of the surface facilities of the production and injection wells and some conceptual sizing of the treatment plant components.

Reviewer; On-site Sodium Hypochlorite Generation (OSHG) Study; Palm Beach County, FL. Completed a study evaluating the On-Site Sodium Hypochlorite Generation (OSHG) systems intermittently operational at the County's four water and one wastewater treatment plants. The intent of the study was to document operational and maintenance challenges of the OSHG systems, including H&S concerns from O&M staff, and to provide an independent recommendation on the path forward. The study included detailed reviews of many regional OSHG units and the report included many lessons learned and improvements made to the system by the vendor.

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Didier Menard, PE

Principal-in-Charge

EDUCATION

BS, Civil Engineering, University of Central Florida

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#66685)

RELEVANT EXPERIENCE

Didier has more than 19 years of experience and serves as an Area Manager for Northeast and Central Florida. He is well versed in public involvement activities for water and transportation projects in Florida and is in charge of local government affairs for the state.

REPRESENTATIVE PROJECTS

Public Involvement Task, Miami Ocean Outfall Legislation (OOL) Program, Miami, FL. CH2M is providing program management for the Miami-Dade County Water and Sewer Department's $5.7 billion Ocean Outfall Legislation Program. The 11-year program currently includes about 80 capital projects. Didier assisted the OOL Program with putting on workshops to assist small businesses in doing business with Miami-Dade. These workshops teach small businesses a variety of skills such as invoicing, planning and scheduling and construction management which helps them learn and become more successful.

Public Involvement Lead, Water Master Plan, City of North Miami Beach, FL. Led public workshops for interested small businesses to teach the skills necessary for these firms to provide their services for clients.

Public Involvement Task Lead, Water/Wastewater Capital Improvement Plan Program Management—Residential Reclaimed Water Retrofit Task, Seminole County, FL. Led the public involvement task for the County's residential reclaimed water retrofit, which involved building, managing, and implementing a comprehensive Public Involvement Plan as part of a $332 million CIP. The residential retrofit program involved workshop planning, coordination, stakeholder meetings to inform the residents about the projects as well as to build consensus on the potential design alternatives. Residents were encouraged to be part of the decision-making process which facilitated the decision-making process. Communication strategies were implemented including newsletters, fact sheets, website to effectively communicate with the residents and the local media about the conservation and environmental benefits of the project.

Public Involvement Task Lead, Yankee Lake Water Reclamation Facility (WRF), Seminole County, FL. County's signature project. This project involved community meetings, presentations, press releases, maintaining a website, developing newsletters and fact sheets associated with the project. It also involved developing talking points for local leaders and community leaders with regards to the project. This project also involved coordination and engagement with local newspapers and their editorial boards and reporters from around the State of Florida. This was a dynamic and fast paced project which involved developing and implementing public involvement and communication strategies, and leading all public information and stakeholder meetings. Coordinated with the County's Conservation Manager to inform all stakeholders of Seminole County's aggressive conservation efforts, reuse and water supply initiatives.

Public Involvement Task Lead, CIP, City of Cocoa, FL. City of Cocoa Utilities Department CIP involved developing and implementing public involvement and communication strategies, and leading public information and stakeholder meetings.

Public Involvement Task Lead, Ray Bullard Water Reclamation Facility, City of West Melbourne, FL. Responsible for developing communications materials to inform the public, as well as leading a public information meeting to inform the residents of the project benefits.

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RFQ # PSUT-18-03

Joe Elarde, PE

Quality Control - Water

EDUCATION

MS, Environmental Engineering, University of Illinois
BS, Civil Engineering Technology, University of Illinois

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#59309)

RELEVANT EXPERIENCE

Joe is a nationally recognized specialist in membrane technology with more than two decades experience in water treatment, membrane piloting, data analysis, design, startup, and operation throughout the world. As CH2M's Membrane Global Technology Leader, he participates in cutting edge membrane technology development and research, helps build membrane related tools, and is a steward for the wealth of membrane knowledge and best practices. Joe has conducted several conventional and membrane process evaluations, master plans, pilot and feasibility studies

REPRESENTATIVE PROJECTS

Process Lead, RO WTP Membrane Replacement and 4-Log Virus Removal Study, City of Melbourne Utilities, Melbourne, FL. Membrane selection, procurement, and installation for 1,008 new membrane elements for the City's RO WTP. The procurement included an evaluated bidding process with life-cycle analysis that is anticipated to save the City more than $100k in energy cost over the first 5 years of operation. Also worked with the City and regulators to maintain 4-log removal credit for the RO membrane and disinfection process while reducing disinfection contact time and installing lower energy membrane elements.

Senior Process Reviewer and Commissioning Consultant, Green Meadows WTP Expansion Design, Lee County Utilities Department, Fort Myers, FL. Construction of a new 16 mgd RO and ion exchange WTP. The new facility will use reverse osmosis for desalinating brackish well water in parallel with cation and anion exchange used to remove iron, hardness and organics from a surficial aquifer fresh water source.

Project Manager and Process/Mechanical Designer, Marco Island NWTP Membrane Filtration Expansion Planning, Design and Services During Construction, City of Marco Island, Marco Island, FL. Study, membrane equipment procurement, design and construction services of two additional membrane filtration trains that are being added to four existing MF train in a 6.7-mgd membrane filtration system that treats lime-softened surface water. Worked directly with multiple membrane suppliers and local contractors to design and procure the additional MF capacity to meet an accelerated schedule.

Project Manager and Process Lead, Membrane Softening WTP Expansion Planning, Ave Maria Utilities Company, Ave Maria, FL. Expansion planning project of an existing 1.67-mgd NF WTP and 1.25-mgd activated sludge secondary WWTP. The project evaluated the planned phasing and expansion requirements of the WTP, WWTP, and disposal facilities up to 7.5 mgd at ultimate build-out in 2043. Tasks included reviewing facility phasing, defining expansion requirements, making recommendations for facility expansion/ upgrades based on the new build-out requirements, and developing planning level costs for all three facilities.

Lead Process Designer, RO WTP Expansion and Lime Softening WTP Improvements Design/Build, Bonita Springs Utilities, Bonita Springs, FL. Expansion of the RO facility from 6.5 to 8.5 mgd and lime system improvements to increase reliability and reduce maintenance. Lime system improvements include installing a new hydrated lime storage and feed system, improving disinfection chemical injection and monitoring, covering existing lime system filters, and improved blending of the finished RO and lime softened finished waters. The facility is currently under construction with final completion scheduled for 2018.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Randy Boe, PE

Quality Control - Wastewater

EDUCATION

MS, Environmental Engineering, Virginia Polytechnic Institute and State University

BS, Civil Engineering, Virginia Polytechnic Institute and State University

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#57330), TX, NC

RELEVANT EXPERIENCE

Randy is a process engineer with 26 years of experience, specializing in the planning, design, study, and operation of wastewater treatment facilities. His experience includes all aspects of wastewater treatment, including preliminary, primary, secondary, biological nutrient removal, tertiary treatment, sidestream treatment, equalization, and solids digestion and dewatering. Randy's experience includes providing engineering services for wastewater treatment plant operations, biological system modeling and biological nutrient removal (BNR) systems, open channel and pumped hydraulic systems analysis and evaluation, and membrane bioreactor (MBR) design.

REPRESENTATIVE PROJECTS

Process Engineer, South District WWTP Oxygen Production Upgrades, Miami-Dade County Water and Sewer Department, Miami, FL. Responsible for evaluation of required oxygen production capacity for replacement of compressors for the existing 240 ton/day cryogenic pure oxygen production system improvements. Process modeling was conducted as well as evaluation of historical operations data.

Senior Technical Consultant, Pure Oxygen Generation System Replacement, G.T. Lohmeyer WWTP, Fort Lauderdale, FL. Responsible for technical guidance and review of development of 30 percent design documents to be used as a design criteria package for selection of a design/build contractor to replace the existing 55 ton/day cryogenic oxygen production facility with vacuum pressure swing adsorption (VPSA) technology. The project requires working on a very constrained site with the need to keep the existing production facility in operation while the new facility is constructed.

Senior Technology Consultant, Miami-Dade County Ocean Outfall Legislation Program – South District and Central District WWTP Conceptual Designs, Miami, FL. Responsible for technical guidance of conceptual design for improvements to these high-purity oxygen activated sludge facilities each greater than 100 mgd average flow. Each included implementation of step-feed (contact stabilization) for peak flow management. Other improvements included headworks expansion, addition of oxygenation trains and secondary clarifiers, effluent filters, disinfection, deep injection wells, and deep injection well pump stations.

Senior Technical Consultant/QC Reviewer, MLE Nitrogen Removal and Digester Modification, Manatee County, FL. 15 mgd project to convert the biological treatment process to a Modified Ludzack-Ettinger (MLE) process designed to reduce the total nitrogen concentration to less than 10 ppm. Project included converting existing primary clarifiers to anoxic basins including mixers, return activated sludge modifications, addition of nitrified mixed liquor recycle pumping, addition of flow splitter boxes, blower upgrade/replacement, and conversion of anaerobic digesters to aerobic sludge holding tanks.

Senior Technical Consultant (or Expert) and QC Reviewer, Blacks Ford Water Reclamation Facility Upgrade, JEA, Jacksonville, FL. Design of an expansion including alternatives evaluations for liquid stream and biosolids processing. Four solids treatment options were investigated including Class A and Class B options including BCR Environmental CleanB™ and Neutralizer® systems. Other project components included headworks, odor control, secondary clarifiers, chemical feed systems, filtration, UV disinfection, centrifuge dewatering, reclaimed water storage, and distribution pumping.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Brian Skeens, PE

Quality Control – Distribution/ Collection

EDUCATION

MS, Environmental Engineering, Georgia Institute of Technology

BS, Civil Engineering, Georgia Institute of Technology

PROFESSIONAL REGISTRATIONS

Professional Engineer: GA

RELEVANT EXPERIENCE

Brian serves as the Global Practice Leader for Conveyance and Storage Master Planning services. For more than 22 years he has worked as a project manager, technical, and task leader on projects ranging from water distribution and wastewater collection hydraulic model updates to a full model construction from scratch. Brian has also been involved in projects involving water distribution system water quality and energy optimization. He has managed water conservation projects for cities and counties, as well as state and regional government entities, to help make the most efficient use of water, and plan appropriately to extend the life of current water supplies and other capital infrastructure.

REPRESENTATIVE PROJECTS

Senior Technical Consultant, iWater Program, JEA, Jacksonville, FL. Led the technical team in reviewing the water distribution system model, updating it from a planning model to an operational model for use in optimizing operations to meet CUP (withdrawal) requirements as well as distribution pressure and water quality needs.

Senior Technical Consultant, Water Model and Master Plan, Cocoa, FL. Provided Senior guidance and support on the development of a water in InfoWater using GIS data from scratch, field work to collect data for calibration, and calibration of steady-state and extended period simulation models, for use in master planning.

Senior Technical Lead, Pasco Potable Water System Master Plan, Pasco County, FL. Provided technical guidance and leadership in the development of an immediate action plan to improve water quality in the distribution system, and during the development of a water distribution system model for the entire County. There was an extensive field data collection effort undertaken to calibrate the model, and understand water age issues.

Technical Lead; Water Quality Master Plan; Seminole County FL. Using hydraulic models of the water distribution system, a CIP was developed for several small systems using MWHSoft H2OMap. For the larger systems, a genetic algorithm optimization was developed by CH2M HILL technologists and it was used to develop a Water Resources Optimization and Future Demands Optimization. The optimization considered permit conditions, operating conditions, chemical costs, and infrastructure costs. A CIP was developed using the optimization, considering water quality as one of the constraints.

Technical Consultant, CIP/Master Plan Update and Operational Evaluations, Town of Cary, NC. Provide lead technical guidance on the updating of previous master plan and CIP projects based on new operational criteria and demand conditions. Specifics include model evaluations using InfoWorks WS, more stringent storage tank requirements and higher minimum pressure criteria, and water age impacts. Next steps are full update of CIP listing and new projects to be added.

Senior Task Lead; Integrated Watershed Management Plan Update; Metropolitan North Georgia Water Planning District; Atlanta, GA. For the 2017 plan update, was the lead for the Water Supply and Water Conservation portion. This included water demand projections for the 15-county area using an end-use model, reviewing and revising water conservation programs, and evaluating existing and planned water sources and treatment facility phasing plans.

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RFQ # PSUT-18-03

Cristina Ortega-Castineiras, PE

Task Lead, Technologist; Compliance/ Regulatory/ Permitting| Water Supply & Treatment |

EDUCATION

ME, Environmental Engineering

BS, Civil Engineering

BS, Environmental Engineering

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL

RELEVANT EXPERIENCE

Christina is a water process engineer with experience in water/wastewater engineering projects, including work in assessment, design, pilot testing, permitting, and master planning of water and wastewater infrastructure. She has been involved in the planning, design, assessment, and pilot testing of multiple membrane and lime softening facilities throughout Florida.

REPRESENTATIVE PROJECTS

Process Engineer, City of Pembroke Pines Water Treatment Plant Lime Softening Optimization, Pembroke Pines, FL. Conducted lime softening bench-scale testing to optimize treatment process.

Process Engineer/Project Manager, Norwood Water Treatment Plant Lime Softening Clarifier Optimization and Corrosion Control Study, NMB Water, City of North Miami Beach, FL. Conducted a detailed assessment of the lime softening clarifiers operation, and drafted a bench testing protocol. Bench scale and full-scale testing will be conducted to optimize the clarifier performance, to reduce effluent turbidity and color. Testing will include the use of metal coagulants, oxidants and different dose/pH settings. This project will also update WTP corrosion control strategies.

Process Engineer, Water Treatment Plant Master Plan, City of North Miami Beach, FL. Involved in assessment of existing water treatment plant which includes lime softening, nanofiltration and reverse osmosis treatment trains. Currently performing evaluation of alternatives to expand the treatment capacity to accommodate future demands. Conducting cost-benefit comparison between lime softening and nanofiltration.

Process Engineer/Assistant Project Manager, Norwood Water Treatment Plant Phase 1 and Phase 2 Improvements and Expansion, NMB Water, City of North Miami Beach, FL. Conducted process evaluation and design of improvements and expansion to the NF, RO and lime softening systems at the Norwood WTP to increase firm capacity.

Process Engineer, City of Deerfield Beach Concentrate Disposal Scaling Evaluation, FL. Conducted investigation to determine the cause of scaling, and recommended remedial measures.

Process Engineer, Southwest WTP Groundwater Rule (GWR) Water Treatment Improvements, City of Sunrise, FL. Involved in bench testing and free chlorine residual monitoring investigations. The results of these tests were used to determine Southwest WTP facility improvements needed to meet the 4-log virus removal/inactivation requirement of the Florida Department of Environmental Protection (FDEP) so-called “Bird Rule” and the Environmental Protection Agency’s (EPA’s) GWR based on free chlorine disinfection.

Project Manager, Norwood Water Treatment Plant Groundwater Rule (GWR) Evaluation, NMB Water, City of North Miami Beach, FL. Carried out evaluation of the Norwood Water Treatment Plant for compliance with the Florida Department of Environmental Protection (FDEP) so-called “Bird Rule” and the Environmental Protection Agency’s (EPA’s) GWR. Developed new compliance and recordkeeping strategies. Recommended improvements to minimize single points of failure, while maintaining compliance with the GWR.

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RFQ # PSUT-18-03

Mark Lucas, PG

Hydrogeologist; CUP | Water Supply & Treatment

EDUCATION

MS & BS, Geology, Rutgers University

PROFESSIONAL REGISTRATIONS

Professional Geologist: AR, IN, DE, TN, WY, PA (Florida PG in progress) | American Institute of Professional Geologists

RELEVANT EXPERIENCE

Mark has more than 35 years of experience in water supply, well rehabilitation, groundwater and solute transport modeling, geochemical, groundwater contamination, managed aquifer recharge (MAR) and aquifer storage and recovery (ASR) projects. He has served as a hydrogeologist, project manager, or senior technology lead on more than 200 ASR projects. Mark has published more than 30 professional papers on ASR, MAR, geochemistry and well rehabilitation projects. He uses analytical and numerical flow modeling methods for application to gradient control, groundwater remediation, ASR and wellfield management problems.

REPRESENTATIVE PROJECTS

Geochemical and Groundwater Monitoring Investigations, City of Boynton Beach, FL. Reviewed analytical results from the City of Boynton Landfill (LF), comprising 7 years of quarterly sampling, and 2012 investigation at adjacent Links Golf Course (LGC). The geochemical signature in groundwater samples from both facilities exhibited similar characteristics including elevated concentrations of arsenic, iron, and ammonia. The geochemical study revealed arsenic in groundwater at the LF and golf course resulted from reductive dissolution of iron, leading to the release of adsorbed arsenic. This geochemical process occurs naturally, and represents a major, natural source of elevated arsenic in groundwater, internationally (West Bengal, Bangladesh, Cambodia, etc.). Results were presented to officials from the FDEP, who endorsed a geochemical investigation designed to identify the source of arsenic. Demonstrating that arsenic occurs naturally in groundwater beneath the LF and LGC will preclude addressing the issue through remediation, saving the City significant capital and operation and maintenance costs, while avoiding remediating a naturally occurring process.

Lead Hydrogeologist, Water Supply Master Plan, City of Deerfield Beach, FL. Master plan developed an approach for shifting withdrawals from the Biscayne Aquifer westward to preclude saltwater intrusion, while increasing withdrawals from the Floridan Aquifer

Lead Hydrogeologist, Water Supply Master Plan, City of North Miami Beach, FL. Plan developed approach for shifting withdrawals from the Biscayne Aquifer to preclude saltwater intrusion, while increasing withdrawals from the Floridan Aquifer. Prepared design drawings and specifications for production wells in the Biscayne (2) and Upper Floridan (1) aquifers.

Lead Hydrogeologist, Seminole Indian Tribe of Florida. Designed, prepared permit applications, and performed services during construction for production wells installed in the Biscayne (2) and Upper Floridan (3) aquifers at the Hollywood and Brighton Reservations, respectively.

Lead Hydrogeologist, Royal Caribbean Inc., Cocoa Kay Resort Island. Designed and prepared permit applications for one new production well capable of delivering 600 gpm to reverse osmosis treatment plant.

Project Geochemist, ASR Pilot Test Cycles; City of Wichita, KS. Applied thermodynamic equilibrium models PHREEQC and MINTEQA2 in testing pre-treatment agents for water recharging Equus Beds aquifer system through two ASR wells. Native groundwater from the Equus Beds displayed concentrations of arsenic ranging up to 26 ppb. By adding dissolved oxygen to the recharge water, CH2M HILL recovered up to 225 percent of the recharge water displaying arsenic, iron, and manganese concentrations less than laboratory method detection limits, far exceeding initial expectations.

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Raul Alfaro, EIT

Associate Engineer | Water Supply & Treatment

EDUCATION

BS, Environmental Engineering, Florida International University

PROFESSIONAL REGISTRATIONS

Engineer-in-Training: FL

RELEVANT EXPERIENCE

Raul is a water engineer with experience in schematic design, calculations for water and wastewater treatment facilities, and permit modifications.

REPRESENTATIVE PROJECTS

Associate Engineer, Clarifier Optimization Project for the City of North Miami Beach, FL. Performed bench scale testing of coagulants, flocculants, sorbents, and oxidants to reduce clarifier effluent color and turbidity. Results were presented at FSAWWA's Fall conference in 2017.

Associate Engineer, Groundwater Rule Evaluation: Four-Log Virus Treatment of Ground Water, City of Pembroke Pines, FL. Project involves performing CT calculations and finding disinfection alternatives to achieve 4-Log virus treatment and comply with regulatory requirements set forth in the Groundwater rule and the Florida Bird Rule.

Associate Engineer, Raw Water Hydraulic Study, City of Pembroke Pines, FL. Study involves performance testing of the utility's raw water transmission system, raw water supply, and developing a representative hydraulic model.

Associate Engineer, DBP Formation Investigation, City of Deerfield Beach, FL. Project to identify the source of DBP formation and offer solutions to mitigate condition. Investigation involved disinfectant residual profile testing and a raw water chlorine demand test to determine optimal chlorination dose.

Associate Engineer, North Miami Beach Water, North Miami Beach, FL. Performed clarifier optimization bench tests with CH2M. Aided in the integration of CityWorks into plant preventative maintenance and laboratory departments and consulted management about its use and capabilities. Prepared monthly reports for The Department of Health and other regulatory bodies. Trained in EPA approved water quality analysis methods.

Associate Engineer, Desalination Facility, Bahamas. Schematic Design for small desalination facility. Performed water quality analysis to make final process determinations.

Associate Engineer, Phase I Membrane Facilities, North Miami Beach, FL. Modifications to Ground Water Rule Evaluation and CT calculations for the City of North Miami Beach for the proposed Phase 1 membrane expansions.

Associate Engineer, North Miami Beach, FL. Ran RO and NF membrane projections. Worked on modification of SFWMD Water Use Permit.

Associate Engineer, WWTP/IWTP, Seminole Tribe of Florida. Performed Quality Control checks for STOF's Hollywood WWTP and IWPS.

Assistant Biologist; ElRAMP Surveys, Everglades National Park, FL. Performed multiple surveys for amphibians and reptiles in various state parks and preserves. Analyzed hydrologic, hydrogeologic, meteorological, and water quality data of Florida state parks.

Payments Manager; Achieve Success, LLC, Miami Shores, FL. Promoted to Payments Manager in Payments Processing in nationwide tutoring company. Managed annual transactions totaling over $1 Million. 5 Years of experience in Management position.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Juan Aceituno, PE, ENV SP

Task Lead | Wastewater Treatment & Disposal

EDUCATION

MBA, Florida International University

ME, Civil Engineering, Texas A&M University

BS, Civil Engineering, Texas A&M University

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#61061), TX

Envision Sustainability Professional – ENV SP

RELEVANT EXPERIENCE

Juan has over 24 years of experience in the planning, analysis, and design of wastewater collection and transmission systems, including wastewater treatment plant operational and performance evaluations. His experience includes plant hydraulic analysis, water distribution network modeling, wastewater treatment plant facilities condition assessments, and master plan studies for water and wastewater systems. Juan is experienced in design-build delivery of wastewater projects and building permitting for water and wastewater treatment systems in Florida.

REPRESENTATIVE PROJECTS

Deputy Project Manager; Water and Wastewater Master Plan, NMB Water, North Miami Beach Miami, FL. Led the delivery of a water and wastewater master plan based on a comprehensive review of the City's capital infrastructure plan (CIP). Assisted with the identification of capital projects and participated in the project prioritization process for the next 15 years for a CIP worth over $270 million. Involved with the evaluation of wastewater projects for the City in particular with defining a plan for the areas without sewer infrastructure (over 50%) currently served by septic tank systems. Assisted with final preparation and presentation of the master plan to the City Commission highlighting the projected population growth and establishing the capital and renewal/replacement projects.

Project Manager, South District WWTP Renewal and Replacement (R&R): Screening Improvements to Plants 1 and 2 Final Design and Services During Construction, Miami-Dade Water and Sewer Department (WASD), FL. Managed the final design to install 4 new fine plate screens (71.25 MGD each) at the SDWWTP Headworks Facility (285 MGD peak capacity) while keeping the plant in operation. The design required modifications to an existing facility to install screenings systems improvements consisting of grit chamber modifications and fine screens installation, construction of a new Plant 1 Electrical Building, site civil and storm water modifications. Successfully managed the permit task with the local Building Department and led the engineering support services during the construction phase with a 15-month construction duration.

Project Manager, Sanitary Sewer Evaluation System (SSES) Phases I and II, City of Miami Beach, FL. Responsible for developing a technical report summarizing the requirements outlined in the Volume Sewer Customer Ordinance (VSCO) for the SSES Phases I and II. The SSES includes three phases which are intended to determine the sources and quantities of infiltration/inflow (I/I) into the sewer system, correct the I/I sources and measure the I/I values into the rehabilitated system for compliance with the maximum allowed values (<5,000 gall per inch diameter pipe per day per mile of pipe and laterals - GPD/IDM). Evaluated work already performed by the City and presented the results in a format acceptable to the local county regulatory agency (Department of Environmental Resources Management – DERM). Developed a preliminary plan for conducting flow monitoring to determine Night-Time Flows and Dry/Wet Average Daily Flows for the City's 23 sanitary sewer basins. The final report was a Plan of Action addressing DERM's concerns regarding the City's compliance with the VSCO requirements.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Todd Williams, PE

Biosolids, Technologist | Wastewater Treatment & Disposal

EDUCATION

BS, Civil Engineering Technology, Virginia Polytechnic Institute and State University

PROFESSIONAL REGISTRATIONS

Professional Engineer -Civil: VA, IA

Board Certified Environmental Engineer (BCEE), American Academy of Environmental Engineers

RELEVANT EXPERIENCE

Todd specializes in the biosolids and residuals management field. He is a recognized biosolids management planning expert having supported dozens of biosolids and residuals management master plans in his career. Todd has designed and provided evaluation and operational services for all aspects of compost facility process, equipment, and odor control systems on well over 100 projects. He has delivered over 150 technical presentations specific to residuals management and is a contributing author for several articles and books significant to residuals resource recovery, residuals and municipal solid waste management, composting, and odor control.

REPRESENTATIVE PROJECTS

Senior Technology Consultant, Biosolids Composting Permitting Assistance, Lee County, FL. Updated preliminary design report and assisted in preparation and submittal of the successful permit renewal for this 90,000-wet ton annual capacity biosolids composting facility.

Senior Technology Consultant, Collier County Utilities, Naples, FL. Project to evaluate biosolids management alternatives with the goal to develop a resource recovery facility capable of managing dewatered wastewater solids, fats oils and grease, and other high strength wastes as a service to the community. The current practice of hauling 130 miles to landfill wastewater solids is not sustainable and the project goal is to develop a public-private partnership to build and operate a resource recovery facility within the borders of the County. Led the team in identifying and evaluating capital, O&M and life cycle costs as well as cost-benefit analysis of several potential biosolids management options including drying, anaerobic digestion and composting of wastewater solids with variations to capture energy through a combined heat and power system. The recommended solutions have been developed into an RFP for private system suppliers to design, build, own and operate this innovative facility.

Senior Technology Consultant, Cost Estimation Analysis and Product Marketing Assessment for the Miami Dade Water and Sewer Department, Miami, FL. Evaluated costs for processing solids from all three wastewater treatment facilities with a production of 130 dry tons per day of biosolids. The evaluation compared costs of implementing thermal drying, thermal hydrolysis and anaerobic digestion, and composting. Assisted in the analysis of these three biosolids management options including a biosolids product market analysis.

Senior Advisor, Biosolids Digester Upgrade Evaluation for Gwinnett County, GA. Performed a comprehensive evaluation of different solids management technologies in conjunction with digester upgrade options for the F. Wayne Hill WWTP. Assisted in the composting, incineration and drying option evaluation and provided input on the overall evaluation methodology.

Project Manager, Composting Facility Design, County of Spotsylvania, VA. Design, permitting and construction of a covered aerated static pile composting facility. Directed all odor control testing, odor control modeling and design as well as permitting and process design for the entire operation. Odor control biofiltration system includes four variable speed fans, humidification controls, and four biofilter zones with in-ground aeration ducting for easy media change-out. The facility was awarded the Solid Waste Association of North America's Composting Systems Gold Excellence Award in 2012.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Gerrit Bulman, PG

Hydrogeologist; UIC | Wastewater Treatment & Disposal

EDUCATION

MS, Geological Sciences, University of Alabama BS, Geological Sciences, Brown University

PROFESSIONAL REGISTRATIONS

Professional Geologist: Florida (#2697)

RELEVANT EXPERIENCE

Gerrit serves as the injection well lead for South Florida, where Class V drainage wells and Class I municipal and industrial deep injection wells have been installed and operated by municipalities for decades. He is a senior project manager with extensive injection and monitoring well planning, design, permitting, bidding and construction management experience as well as, groundwater flow modeling (MODFLOW), pumping test analysis, IS (ArcGIS), and water use permitting experience. He has managed deep injection well, ASR well, RO supply well, monitoring well and stormwater drainage well permitting, bidding, construction and testing projects. He has extensive knowledge of FDEP, SFWMD, and other local and state regulations in Florida.

REPRESENTATIVE PROJECTS

Hydrogeologist and Project Manager; Injection Well Program Management; Miami Dade County Water and Sewer Department, FL. Management and technical lead for unprecedented scale injection well implementation project planning and program management. Over the next decade the program will be responsible for installing 20-30 new large (24-inch) diameter injection wells to depths of 2,500 to 3,000 feet to accommodate over 1 billion gallons per day wastewater.

Hydrogeologist and Project Manager; Deep Injection Well System; Biscayne Landing; City of North Miami, FL. Experimental design-build $15MM remediation project, which uses a 3,200 ft deep injection well for the disposal of ammonia contaminated groundwater at a closed landfill site. Developed a groundwater model to simulate the contaminated groundwater extraction system.

Hydrogeologist and Project Manager; Deep Injection Well System Mechanical Integrity Testing; City of Boynton Beach, FL. Wrote and certified an FDEP approved plan for the 5-year FDEP/EPA mandated mechanical integrity testing; managed water well contractor and field staff supervision during pressure testing, geophysical logging, and video surveying. Prepared a certified report for FDEP, which includes testing results and an evaluation of monitoring well water quality.

Hydrogeologist; Cudjoe Key Deep Injection Well System; Florida Keys Aqueduct Authority (FKAA). Responsible for design, permitting, FDEP Underground Injection Control (UIC) regulatory communication and hydrogeologic and construction data interpretation for the installation of a dual-zone monitoring well and deep injection well (Class V, Group 3) at the Cudjoe WRF.

Hydrogeologist and Project Manager; Deep Injection Well System Rehabilitation and Mechanical Integrity Testing (MI); City of Deerfield Beach. Prepared planning documents and specifications for rehabilitation of the City's Class I industrial deep injection well at the West WTP. Managed field services and regulatory communication during testing, and submitted a certified report to FDEP following successful rehabilitation and testing.

Hydrogeologist and Project Manager; GT Lohmeyer Injection Well System Operation Permit Renewal; City of Fort Lauderdale, FL. Analyzed historical operating and testing data; prepared application for a successful 5-year permit renewal.

Hydrogeologist; Class I Injection Well and Dual Zone Monitor Well; Seacoast Utility Authority; Palm Beach Gardens, FL. Project involves hydrogeologic analysis, drilling and testing oversight, FDEP reporting, and construction management for a 3,400-foot tubing and packer industrial injection well and associated dual zone monitor well.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Steve Riley, PE

Task Lead | Distribution/Collection

EDUCATION

BS, Civil Engineering, University of Florida

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#33726)

RELEVANT EXPERIENCE

Steve has 39 years of experience in water and wastewater utility planning, design, and construction services in the state of Florida. He has extensive experience in wastewater and water treatment, conveyance, master planning, permitting, and regulatory negotiation experience. Steve is also experienced in construction management of wastewater and water pumping, transmission, treatment and disposal facilities.

REPRESENTATIVE PROJECT

Project Manager, Hydraulic Modeling Projects – Water/Wastewater Transmission and Collection System Master Plans, FL. Managed and provided oversight for more than a dozen comprehensive master plans for SE Florida clients, including North Miami Beach, City of Stuart, Village of Palm Springs, City of Coconut Creek, Seacoast Utilities Authority (Palm Beach Gardens, Florida), Cities of Cooper City, Boynton Beach, and Deerfield Beach, Florida Keys Aqueduct Authority, City of Pompano Beach, Fort Pierce Utilities Authority, and North Palm Beach County.

Design Manager, Master Plans for the Seminole Tribe of Florida (STOF) at their Immokalee, Big Cypress, Fort Pierce, and Brighton Reservations. At each Reservation, an analysis was performed for a 20-year planning period to address water supply, treatment, storage, pumping, and transmission and wastewater collection, treatment, and effluent management. Through use if its membrane treatment plants, STOF was able to use free chlorine as its residual disinfectant. Deficiencies were identified, alternatives for their elimination were evaluated, and capital projects, or operational actions, were identified for implementation.

Project Manager, Planning Studies, City of Cocoa, FL. Managing a Capital Plan Update including hydraulic modeling of their water transmission systems. Cocoa project includes water supply, treatment, storage, pumping, and transmission evaluation and development of capital improvements plan through the year 2040. The Cocoa system serves a population of approximately 225,000 people. Cocoa has faced challenges with disinfection byproduct compliance and this project included evaluation of operations and capital projects to reduce the risk of noncompliance. The hydraulic model used to analyze the storage, pumping, and transmission system which includes 3 remote booster pumping stations and an elevated storage tank. The model was used to predict water quality throughout the network including chlorine concentration. Cocoa uses chloramines for it residual disinfectant in the water transmission system

Engineering Manager, Capital Improvements Program (CIP), Seminole County Environmental Services Department (SCESD), FL. Responsible for managing the work of CH2M's design managers and assisting the County's staff in managing the work of their design consulting firms. Approximately $311 million in capital projects were completed under the Program. The scope of projects delivered included water transmission mains, neighborhood water and reclaimed main retrofits, and adjacent system interconnects; wastewater pump station and force main upgrades, I&I assessments, and R&R assessments; Master Plan (20-years), R&R planning, and Asset Management implementation. In addition, Steve worked with the County on program planning and annual CIP prioritization.

Wastewater Treatment Plants, Fort Pierce Utilities Authority, Fort Pierce, FL. Design, permitting, and construction of new sludge digesters, a 15 mgd deep injection well pump station, and odor control facilities at the FPUA Wastewater Treatment Plant.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Rudy Fernandez, PE

Pipelines/Pump Stations | Distribution/Collection

EDUCATION

BS, Civil and Geological Engineering, Princeton University

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#40328)

RELEVANT EXPERIENCE

Rudy brings more than 40 years of construction management and design experience in water/ wastewater utilities, having worked in the engineering field since passage of the 1972 Clean Water Act Amendment. He has a proven track record in design and construction administration of new facilities and rehabilitation of existing assets. Rudy's experience includes on-site construction observation including rehabilitation of large diameter pipelines of up to 78 inches, including multiple pipe materials, such as fiberglass and PCCP.

REPRESENTATIVE PROJECT

Pipeline Engineer, 42-inch/48-inch PCCP Force Main Condition Assessment and Rehabilitation, City of West Palm Beach, FL. Performed professional engineering services relative to design of the cured-in-place lining of the existing PCCP. The City owns and operates a force main that is comprised of approximately 31,000 LF of 42-inch and 48-inch pre-stressed concrete cylinder pipe (PCCP). The size of the force main changes from 42-inch to 48-inch just west of I-95. A recent internal inspection of the pipe revealed structural deficiencies starting at a point immediately west of I-95 and continuing to the ECRWRF - over 13,000 LF of 48-inch-diameter PCCP. Jacobs is performing design services to restore the structural integrity by internally lining it using the cured-in-place trenchless technology (CIPP) rehabilitation/renewal method. The work is being performed in two phases.

Project Manager, Sewer System Evaluation and Improvements, Brevard County, FL. Hydraulic modeling, sewer system inspection and assessment, and design of improvements to reduce sanitary sewer overflows and infiltration/inflow.

Project Manager, Sugar Creek 66-inch Outfall Repair at McAlpine Creek WWMF, Charlotte Mecklenburg Utilities Department, Charlotte, NC. Evaluated alternatives to rehabilitate a 45-year-old, 66-inch reinforced concrete interceptor pipe at the headworks to the 64 MGD WWMF. The primary objective was to repair or replace pipes damaged by hydrogen sulfide corrosion before an actual failure occurred. A secondary objective was to provide increased hydraulic capacity into the WWMF. Construction plans and specifications were prepared to repair 500 linear feet (LF) of the existing 66-inch pipeline using trenchless methods. In order to reduce cost, specifications were developed to allow bidders to select from three pipe rehabilitation methods: cured-in-place pipe, slip lining, and a centrifugally cast concrete pipe liner. The project also included 350 LF of new 54-inch and 48-inch sewer. The project required a bypass pumping system capable of pumping up to 67 MGD, the projected wet-weather flow, to continue flowing directly to the WWMF. The additional 54- and 48-inch lines not only increased hydraulic capacity to meet future flows, but could also manage flows during construction and reduce bypass pumping costs. The construction was completed one month ahead of schedule and under budget with no adverse impacts to the WWMF or any permit violations.

Pipeline/Pump Station Manager, Governor Printz Interceptor Design and Construction Period Services, New Castle County, DE. Project included design and CEI services for of 20,000 LF of new sewer interceptors, by tunneling and open cut methods, of pipe ranging in size from 30-to-78 inches-in-diameter consisting of fiberglass and reinforced pipe to comply with Administrative Order for CSO closure. The team also evaluated the condition, performance, and capacity of existing interceptors and examined alternatives to alleviate problems and prevent overflows. Alternatives included combinations of storage, sewer rehabilitation, new sewer construction and pump station upgrades.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Susan Moisio, PE

Wastewater Model| I/I | Distribution/Collection

EDUCATION

MS, Civil Engineering, University of Texas at Austin

BS, Civil Engineering, University of Texas at Austin

PROFESSIONAL REGISTRATIONS

Professional Engineer: OH

RELEVANT EXPERIENCE

Susan is a Technology Fellow with more than 30 years of experience in capacity assessments and hydraulic modeling. Her experience in wastewater planning and capital project execution includes 16 years in the Cincinnati's Wastewater Collection Division, where she was responsible for hydraulic modeling, SSES studies, rehabilitation projects, emergency response, and CSO/SSO operation and management. Susan currently serves on the Water Environment Federation Collection Committee as the Vice Chair of the WEFTEC Collection System Program Subcommittee.

REPRESENTATIVE PROJECTS

Conveyance Leader, Hydraulic Model/ Capacity Assessment, Miami-Dade County Water and Sewer Department Ocean Outfall Legislation (OOL) Program, FL. The $5.7 billion, 11-year OOL Program is driven by a regulatory mandate from the Florida Legislature to eliminate all wastewater discharge to the Atlantic Ocean by 2025. As program manager, CH2M is providing system master planning and managing overall delivery of a comprehensive, long-term program that encompasses the design, procurement, construction, and commissioning of an estimated 28 major capital projects. A critical aspect of the program is the rerouting of wastewater flows from the east (Atlantic Ocean) to the west, where a new membrane bioreactor treatment plant will be designed and constructed to treat the flows. After treatment, more than 450 mgd of treated effluent will be injected into deep wells for both reuse and disposal. Ms. Moisio serves as the Conveyance Leader, providing technical guidance for the evaluation, validation, and ongoing support for the hydraulic modeling, pump stations and force mains to improve water quality

Technical Lead; Wet Weather Overflow Mitigation Program; City of St. Petersburg, FL. Tasks included analyzing the City's collection system for inflow and infiltration (e.g., data collection, data inventory, I/I characterization, modeling assessment, alternatives analysis) and developing recommendations for the mitigation of future overflows through infiltration and inflow removal for comparison against solutions focused on improvements to the water reclamation facility.

Lead Modeler/Model Quality Assurance/Quality Control (QA/QC), SSO Control and Wastewater Facilities Program, City of Baton Rouge/East Baton Rouge Parish, LA. Responsible for InfoWorks modeling tasks to develop a capital improvement plan for the control of SSOs and basement flooding. System includes 304 pump stations, manifold system, and three wastewater treatment plants (WWTPs). This is a multi-year project where CH2M serves as the program manager. Duties also include QA/QC of modeling team and development of processes and protocols for the evaluation of the sewer system on this $1.6 billion program.

Hydraulic Model Leader, SSO 700 Integrated Watershed Action Plan for East Branch Mill Creek, Metropolitan Sewer District of Greater Cincinnati, OH. This integrated action plan is for the watershed with one of the largest SSOs. The tasks are to complete the development of an integrated watershed model to support the sustainability effort for the Wet Weather Improvement Plan. Tasks include model update, performance evaluation, alternatives analysis and BMP analysis. The East Branch Mill Creek Watershed has multiple CSOs, SSOs, overflowing manholes, and basement backup locations.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Diana Francois, PE

Wastewater Model| I/I | Distribution/Collection

EDUCATION

BS, Civil Engineering, Florida International University

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#75176)

RELEVANT EXPERIENCE

Diana has nearly 13 years of water and wastewater conveyance experience including transmission projects where has designed and prepared construction plans and specifications. Her experience also includes providing construction management services, including reviewing contractor submittals to ensure compliance with technical specifications, investigating requests for information, coordinating client meetings, preparing meeting minutes, preparing request for quotation and letters to contractors, and preparing bid documents.

REPRESENTATIVE PROJECTS

Modeler, Water and Wastewater Master Plan Development, City of North Miami Beach Public Utilities Department, FL. Responsibilities included developing water demand and wastewater flow projections, developing and calibrating a water distribution system model using InfoWater and a wastewater collection system model using InfoSWMM and finally providing capital improvements required to address system limitations.

Task Lead, Seminole Indian Hollywood Reservation Water and Sewer Master Plan, Seminole Tribe of Florida (STOF). Responsibilities also included developing a collection system hydraulic model using InfoSWMM, a water distribution system model using InfoWater and documenting model results.

Project Engineer, Upper East Fork Interceptor System Master Plan Update. North Texas Municipal Water District, Wylie, TX. Responsibilities included developing a hydraulic model using InfoSWMM by adding pump curves,storage curves, structures, dry and wet-weather flows, updating pipe sizes, pipe lengths running dry and wet weather simulations, calibrating the model, analyzing the District's system, developing maps and making system recommendations.

Hydraulic Modeler, Sanitary Sewer Evaluation Survey (SSES) Program – Task 36, City of Suffolk, VA. Served as hydraulic modeler using the software MikeUrban. Responsibilities included calibrating the gravity sewer portion of the City of Suffolk Locality hydraulic model by setting up scenarios, selecting network loading node, running wet weather simulation of distributed flows, and comparing obtained wet weather hydrographs with previously developed hydrograph from SWMM models.

Staff Engineer, Construction Management Services, City of Fort Lauderdale's WaterWorks 2011 Infrastructure Program, FL. Reviewed contractor submittals to ensure compliance with technical specifications, investigated requests for information, coordinated client meeting, prepared meeting minutes, prepared request for quotation, letters to contractors. Reviewed I&I tapes as well as produced reports in order for contractor to make necessary repairs, prepared bid documents for said projects.

Project Engineer, IH 20 Water Main Design Project, Dallas County Water Control and Improvement District No. 6, Dallas, TX. Responsibilities included designing and preparing construction plans and specifications for more than 7,000 linear feet of 8-inch to 21-inch-diameter wastewater transmission main designed to upgrade the aging wastewater system of the City of Balch Springs.

Project Manager, Lift Station #7 Improvements, City of Cooper City, FL. Responsibilities included performing design calculations to size the pumps, wet well and the valve vault, assembling Broward County Permit, and coordinating with Broward County Staff to ultimately deliver bid documents to the City.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Tom Hatcher

Drinking/Reuse Water Models | Distribution/Collection

EDUCATION

PhD, Civil Engineering, Auburn University

MS, Civil Engineering, Auburn University

BS, Civil Engineering, Florida Atlantic University

PROFESSIONAL REGISTRATIONS

N/A

RELEVANT EXPERIENCE

Tom has 4 years of experience in hydraulic modeling, which includes water distribution, recycled water, and oil and gas pipeline systems. His experience includes pump, pressure relief valve, and control valve sizing. He is also highly capable in data analysis, operability analysis, report writing, and controls of pipeline systems.

Tom has participated in steady state modeling and planning projects that range from pump station upgrades, cruise terminal measurement and model validation, and water distribution master planning. Surge projects have included multiple pump station designs and upgrades of water distribution systems as well as force main pipeline systems. His experience includes surge modeling and measurement of multiphase flows in addition to serving as a technical reviewer of two leading hydraulic journals.

REPRESENTATIVE PROJECTS

Hydraulic Engineer, CIP Update, City of Cocoa, FL. Responsibilities included model development and analysis of the City's water distribution and wellfield systems. New GIS and billing data was added to the model, and CIP pipes and operational improvements were recommended. As part of this work, the water quality model was also calibrated with new sampling data in the distribution system. Additional modeling has also been conducted on an as needed basis with studies including storage tank alternatives and operational recommendations for a pipe outage analysis.

Hydraulic Engineer, Forsyth County Master Plan, Forsyth County, GA. Responsibilities included updating the cost analysis for pipelines and tanks and performing a pressure zone analysis to determine if there was potential savings from optimizing system pressures. A surge analysis was also conducted for the existing station as well as a new high service pump station. Responsibilities included hydropneumatic tank design as well as pipe layouts for the new station. Additional modeling has also been conducted on an as needed basis.

Project Engineer, Tulsa WTP Surge Analysis, Tulsa, OK. Responsibilities included a surge analysis for the A.B. Jewels WTP. Field work was conducted for a controlled shutdown, which involved transient pressure loggers as well as a tachometer for the high service pumps. Two new 35,000-gal hydropneumatic surge tanks were recommended. Steady state simulations were also conducted to ensure the high service pumps could meet peak demands.

Hydraulic Engineer, Tracy Reuse Optimization, Tracy, CA. Responsibilities included the planning of a new reuse system in with over 10 miles of 24-inch pipe. Hydraulic modeling was conducted for the system at Day 1 flow conditions as well as full flow at buildout conditions. Life cycle costs were calculated for each scenario and coordination was conducted with the optimization group to ensure the system will efficiently meet future needs. Hydraulic simulations also involved pump sizing at two stations for a variety of flow conditions.

Hydraulic Engineer, Fowler Reuse Plant Expansion, Forsyth County, GA. Responsibilities included the surge analysis for the new 10 mgd pump station with the existing force main. A new 10,000-gallon hydropneumatic surge tank was recommended as the design pressure for the existing tank was not sufficient. Piping leading to the surge tank was also upsized, which was required due to the increase in flow capacity. Responsibilities also included steady state operability analyses for the force main focusing on the downstream backpressure control valve.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Elaine Tolon

Drinking/Reuse Water Models | Distribution/Collection

EDUCATION

BS, Environmental Engineering, University of Florida

PROFESSIONAL REGISTRATIONS

Engineer Intern: FL (#1100019478)

RELEVANT EXPERIENCE

Elaine has over 4 years of experience, mostly focused on water and wastewater hydraulic modeling for rehabilitation projects. She is also knowledge of state and regional permitting.

REPRESENTATIVE PROJECTS

Design Engineer/Hydraulic Modeler, Norwood Water Treatment Plant Rehabilitation Phase I and II, City of North Miami Beach, FL. Provided design services that include defining design conditions, equipment selection and mechanical drawing development. Developed hydraulic models of the proposed chemical feed systems using AFT Fathom for Phase II, which includes expansion of the existing lime softening facility, a new chemical building and installation of a chlorine contact pipeline. Designed redundant carbon dioxide feed system with the capacity to treat 25 million gallons of water a day as part of the Phase II plant rehabilitation and expansion. Also assisted as a process mechanical engineer from schematic design through detailed design of the Norwood Water Treatment Plant Phase I, which includes the expansion of existing reverse osmosis and nanofiltration membrane systems. Performed hydraulic calculations to evaluate existing equipment, piping and valves, and size them for future capacity needs.

Hydraulic Modeler, Water and Wastewater Facilities, Seminole Tribe of Florida (STOF) Public Works Department, South FL. Created water and wastewater hydraulic models using InfoWater and InfoSWMM to aid in the master planning efforts for the STOF. Performed hydrant flow testing and lift station drawdowns to calibrate hydraulic models of the conveyance systems. Prepared water and wastewater utility master plans through year 2036 for two STOF Reservations. Provided management support for the design of two conveyance projects at the STOF Hollywood Reservation, which include the installation of approximately 8,500 linear feet of 16-inch water main and a new wastewater lift station and force main. Prepared a preliminary engineering report to successfully earn a grant from the Environmental Protection Agency for the design and installation of a water main. Also assisted with the construction management and inspection of membrane skid modifications at the STOF Brighton Reservation low pressure reverse osmosis water treatment plant.

Water Engineer, Water Reclamation Facility FDEP Permit Renewal, Fort Pierce Utilities Authority Fort Pierce, FL. Performed onsite inspection and evaluation of the existing water reclamation facility. Prepared the permit renewal application and supporting documentation such as, the reuse feasibility, capacity analysis and operations and maintenance performance reports.

Water Engineer, System Understanding Manuals, Jacksonville Electric Authority (JEA). Assisted in the development of system understanding manuals for over 15 of JEA's existing water treatment facilities. Created process flow diagrams of several existing water treatment facilities.

Intern, CH2M, Fort Lauderdale, FL. Assisted with the inspection and drawdown testing of recently installed stormwater injection and gravity wells. Collected and organized water quality data from three pilot skids for a nanofiltration membrane system. Analyzed and prepared monitoring data for FDEP monthly operating reports of a deep injection well.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

David Green

Fiscal / Economics

EDUCATION

MS, Economics, Portland State University

BS, Agricultural and Natural Resource Economics, Oregon State University

PROFESSIONAL REGISTRATIONS

N/A

RELEVANT EXPERIENCE

David is an accomplished regional economist with broad experience performing economic and financial studies, including conducting cost of service analyses and setting rates for utilities, utility regionalization and valuation studies, marketing and demand studies, economic impact analyses, and economic and financial feasibility studies, as well as other types of economic and financial services. He has expertise in water and wastewater contract negotiations, water and wastewater regionalization and valuation studies, bond feasibility reports and presenting results to rating agencies, and impact fee or system development charge analyses

REPRESENTATIVE PROJECTS

Senior Economist, Miami-Dade County Ocean Outfall Program, FL. Conducting a prioritization analysis for 3 programs. These programs involve over $5 billion in regulatory mandated or state legislative prescribed improvements. Each project within each program has been evaluated against 11 criteria that have been identified as important to meeting the County's overall goals and objectives, and prioritized based on their expected performance in helping to achieve these goals.

Financial Analyst, General Engineering Services and Program Management for WaterWorks 2011 Water and Wastewater Capital Improvement Program, City of Fort Lauderdale, FL. Provided financial services and analysis for various projects ongoing in the City. Program success yielded higher bond ratings and reduced commercial interest rates, and the City realized $50 million in interest savings through access to the State Revolving Loan Fund. The program also optimized the use of financial resources and ensuring financial viability of the program.

Project Manager, Water and Wastewater Rate Analysis, North Springs Improvement District, Coral Springs, FL. Led development of updated water, wastewater, and irrigation rates for the District. Rates are designed to help the District support proposed refinancing of existing debt and issuance of new loan to finance planned improvements. Recently prepared engineers report in support of issuance of assessment revenue bonds to finance improvements to serve expanded service area. Currently preparing update of water, wastewater, and reuse rates and connection fees.

Financial Analyst, Water, Wastewater, and Stormwater Rate Analysis, City of Boynton Beach, FL Led the development of a water, wastewater, and stormwater rate analysis. This analysis developed a 5-year financial plan for each of the City's utility's that involved funding a large capital improvement program. A financial plan was developed that involved phasing of proposed rate adjustments in over a several years period to avoid significant rate shock to the utility's customers. Use of revenue bonds and state revolving fund loans were also planned to help achieve the community's objectives. Updated water and wastewater impact fees and high strength wastewater surcharges were also developed.

Project Economist, Taylor Creek Reservoir Feasibility Study, Consortium of Nine Water Utilities in Central FL. Led financial analysis of the feasibility of developing a surface water supply to provide supplemental water supplies. Evaluated business case for constructing proposed surface water supply that would capture runoff during rainy season to supplement groundwater supplies utilized by each of the water purveyors.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

JD Solomon, PE, CRMP

Asset Management

EDUCATION

MBA, Business Administration, University of SC

Certificate in Strategic Decision Making and Risk Management, Stanford University

BS, Civil Engineering, North Carolina State University

PROFESSIONAL REGISTRATIONS

Professional Engineer: NC, SC, VA
Certified Maintenance and Reliability Professional (CMRP)

Lean Management and Six Sigma certified

RELEVANT EXPERIENCE

JD has over 25 years of consulting experience with expertise in Strategic Asset Management. He serves as the project manager for the Institute for Asset Management Institute (IAM) in developing the subject-specific guidance (SSG) for maintenance practices and is a member of the System Engineering SSG, both of which are guidance documents supporting the international AM standard, ISO 55000.

JD is one of 10 international representatives selected for the 7-year update of CRE Body of Knowledge and serves as in 2017 as the CRE Examination Leader to the American Society of Quality. JD also has achieved the highest level of certification by the Buried Asset Management Institute and is a member of the select committee that is currently updating the Certification of Training in Asset Management 100 guidance document. He has participated and led various forms of AM programs for entities, such as water and wastewater utilities, power utilities, departments of transportation, the military, local governments, and commercial clients.

REPRESENTATIVE PROJECTS

Project Director/Lead Technical Consultant, Performance Improvement (Asset Management) Program, Seminole County, Sanford, FL. This program is being implemented at the back-end of a major 7-year capital program to streamline business processes and develop proactive engineering, operations, maintenance approaches. Specific tasks include: evaluation of current maintenance processes, providing maintenance and reliability best practices training, development of new facility maintenance plans, enterprise re-evaluation of levels of service and performance measurement, asset management technology assessments and programming, computerized maintenance management system (CMMS) improvements, and planner training.

Project Director/Lead Technical Consultant, Comprehensive Asset Management Program, Tampa Bay Water (TBW), FL. This unique program includes a wide range of improvement initiatives including: evaluation of existing computerized maintenance management system (CMMS), advertising, negotiation, award and implementation of new CMMS, evaluation of current maintenance practices and maintenance organization, performing series of maintenance and reliability workshops, developing a comprehensive asset management plan, and asset management plan implementation including evaluation of levels of service, risk framework, financial models, internal communication, staff re-organization, and developing a new preventative maintenance program.

Project Director/Lead Technical Consultant, Comprehensive Asset Management Program, Cape Fear Public Utility Authority, Wilmington, NC. This program consisted of the assessment, business plan development, and implementation of asset management for a newly merged water and wastewater utility. The program included a full range of asset management elements, including but not limited to: strategic plan development, business process mapping, selection and implementation of new CMMS (Maximo), financial models, CIP prioritization, risk assessments, service level assessments, implementation of new maintenance strategies (Reliability Centered Maintenance), condition assessments, review of billing issues, budget reviews, and organizational structures.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Mike Witwer, PE

Energy Management

EDUCATION

ME Environmental Engineering, University of Florida

BS Environmental Engineering (with Honors), University of Florida

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#69262)

RELEVANT EXPERIENCE

Mike Witwer has over 17 years of experience in a wide variety of projects including water and wastewater reclamation facilities. He is experienced in all stages of the design process from master planning to delivery of final design documents. Mike specializes in facility startup and performance testing, capital improvement planning, facility evaluations, process operation optimization, and expansion evaluations.

REPRESENTATIVE PROJECTS

Process Consultant, North Springs Improvement District, Coral Springs, FL. Assisted in the development of a Basis of Design report for a 10 mgd RO facility treating a blend of brackish and fresh water wells.

Lead Project Technologist and Pilot Plant Manager, Green Meadows Water Treatment Plant Expansion, Lee County Utilities, Lee County FL. Responsible for the design, construction, and operation of a one-year pilot plant test program. The testing included the operation of three pilot RO pilot skids, large and small-scale ion exchange columns, pressurized media filters, small scale media columns and sand strainers.

Process and Process Mechanical Lead, Dyal Water Treatment Plant LOX Conversion, City of Cocoa, FL. Process and Process Mechanical lead for the conversion of the ozone plant from air fed to liquid oxygen fed ozone generation. The design included installation of liquid oxygen storage and feed system and modification to existing system.

Lead Project Technologist, Seminole Tribe of Florida Water Treatment Plant Evaluations and Expansion Alternatives, Seminole Tribe of Florida. These projects included an evaluation of plant capacity and equipment assessments for four RO/NF water treatment systems. The project included site visits, pilot testing, and preliminary process selection for expansion at two of the plants. Recommendations for plant improvements and the development of baseline assessment and recommendation reports for each plant were delivered.

Project Technologist, Olga Water Treatment Plant Arsenic Removal Study, Lee County Utilities, Lee County FL. Responsible for the evaluation and preliminary design of an arsenic removal system for a 1 MGD (3,800 m3/d)ASR well using titanium based adsorbents.

Process Lead, Green Meadows Water Treatment Plant Expansion, Lee County Utilities, Lee County FL. Process lead for the design of a 16 mgd (60,500 m3/d) water treatment plant treating water from three sources. The process trains include a combination of RO treatment of a brackish groundwater with bypass blending of high quality intermediate water and a separate treatment process for a surficial ground water using cation and anion resin. The Ion exchange system is designed to use bulk virgin brine or an alternative brine source from a backup deep injection well for cation resin regeneration.

Task Lead, Southwest Water Treatment Plant Liquid Oxygen Conversion Evaluation, Orlando Utilities Commission, Orlando, FL. Evaluated required system changes to support the conversion from air fed to oxygen fed ozone generators at 40 mgd water treatment plant. The evaluation included changes required to the existing system, analysis of operational changes, and preparation of a cost opinion.

Startup and Performance Testing Consultant, Aloma and Magnolia Water Treatment Plants, Winter Park, FL. Assisted in the startup of two ozonation systems and monitoring and acceptance of the ozone system performance testing.

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03

Rafael Vazquez-Burney, PE

Conservation/ Reuse

EDUCATION

MCE, Civil Engineering, North Carolina State University

BS, Environmental Engineering, North Carolina State University

PROFESSIONAL REGISTRATIONS

Professional Engineer: FL (#70768)

RELEVANT EXPERIENCE

Rafael has more than 12 years of experience with expertise in water reuse, water treatment, and water resources projects with a special concentration in natural treatment systems. His experience includes data collection, data analysis, modeling, and design. Rafael is proficient in hydrology and hydraulic modeling packages such as EPA SWMM, XP SWMM, SPAW, EPA Net and WaterCad and water quality models.

REPRESENTATIVE PROJECTS

Project Manager and Lead Subject Matter Expert, Wetland Groundwater Recharge Park, City of Ocala, FL. The goal of this project is to offset consumptive use impacts by providing beneficial reuse of the City's reclaimed water. This ongoing project includes detailed design and permitting to construct a 35-acre groundwater recharge wetland park. This project involves the construction of a treatment wetland to receive stormwater and reclaimed water for water quality polishing and infiltration to support regulatory drivers within the Silver Springs System which is subject to MFL and TMDL limitations. The system is expected to recharge 5 mgd and reduce nitrate to background levels.

Project Manager and Lead Subject Matter Expert, Central Pasco County Beneficial Water Reuse Project, Pasco County Utilities Services Branch, FL. Project goal is to develop water reuse options while providing multiple benefits for the region's water resources including groundwater recharge, ecosystem enhancement, and wetland habitat creation. Developed project concept and performed cost benefit analyses. Led hydrogeological testing for an infiltration wetland which involved aquifer performance testing used to develop a calibrated groundwater model. Led detailed design and secured permits without the need for RFIs. Also managed the construction of the wetland system, which consists of 15 wetland cells with a total footprint of 176 acres.

Project Manager, Regional Public Water System Hydraulic Model and Master Plan, Pasco County, FL. Development of operational strategies to manage and operate the distribution system in a way that minimizes water losses from flushing events while ensuring that the customers receive high quality potable water by developing a Regional PWS Master Plan and a PWS water audit. In addition, this model is being used to prepare a Master Plan to validate, prioritize and identify new projects in their Capital Improvement Plan based on a condition assessment for major facilities and major systems, including pipes, pump stations, and treatment facilities to meet future growth within its service area and plan for improvements to existing and construction of new infrastructure to meet future flows.

Task Lead, Boyette Road Reclaimed Water Reservoir Environmental Resource Permit; Pasco County, FL. Led a comprehensive water quality study that involved clean metals methods. As agreed by the FDEP a comprehensive sampling plan that included sampling various locations across the footprint of the borrow pits was prepared. Collected samples using clean metals methods and analyzed the results. The analysis served as the basis for the FDEP to agree to modify the existing permit condition to allow for offsite dewatering, in accordance with all State, Federal and Local regulations. Significant construction cost savings were achieved through the execution of this work.

TAB 5

Firm's Understanding & Approach to the Work

Tab 5 –Firm's Understanding and Approach to the Work

A) Approach to Scope of Services

Understanding of City's Needs, Goals and Objectives

The City of Pembroke Pines was incorporated in 1960, and encompasses an area of approximately 35 square miles in southwest Broward County, Florida. The City provides exceptional water and wastewater services through 42,000 residential and commercial connections to more than 168,000 customers. Two important pillars of the City's 2014-2019 Economic Development Strategic Plan are to position for and promote economic development within the City's boundaries and to improve the quality of life for the residents. To accomplish these goals, the City wants to develop their utility infrastructure for a balanced growth and continue to provide sustainable, high quality water and wastewater services at affordable rates. The update to the Utilities Comprehensive Master Plan for the planning period 2020 through 2040 (buildout) is an important component of accomplishing the goals of this Economic Development Strategic Plan. This plan update will continue the planning efforts of the City and will provide the first comprehensive planning effort covering both water and wastewater systems, since 1996.

The City has established the following goals for its water and wastewater systems:

- Provide high quality water and wastewater services at affordable rates to meet current and future needs.
- Stay concurrent with anticipated future population, industrial growth out West and planned redevelopments, without over-building.
- Provide for a sustainable system that has robust capacity to meet customer's needs in times of stress or emergency (e.g., drought, impaired weather, climate change).
- Adopt environmentally sound and sustainable business practices.

To meet these goals, there is variability associated with water quality, costs and risks, which makes an integrated and comprehensive approach to water and wastewater management essential. The CH2M team will help the City to develop a water and wastewater master plan that serves as a roadmap for the City.

We suggest a Fresh-Look approach to developing the City's Utilities Comprehensive Master Plan covering period 2020-2040.

The master plan will use several planning efforts of the City performed in the last 20 years:

1. Utility Master Plan Light 2018
2. Summary of Water Treatment Plant (WTP) Risks 2017
3. Wastewater Treatment Plant (WWTP) Capacity Analysis Report (CAR) 2017
4. 10-Year Water Supply Facilities Plan 2015
5. WTP CAR 2014
6. Water Reuse Feasibility Study 2011 and update 2017
7. Long Term Water Supply Plan 2009
8. Utility Status Report and Implementation Plan 1996

CH2M worked on the City's 2017 WTP Risks Analysis and has therefore an excellent understanding of existing performance, efficiency rates, deficiencies and risks.

An Approach That Builds on Thorough Understanding of Current System Operations

CH2M has been privileged to provide the operations of the City's water and wastewater systems over the last three years. As such, important system improvements have been made and continue to be made. This includes operational changes to improve treated water quality and system reliability. This operation brings a unique understanding of your infrastructure, water and wastewater challenges, regulatory issues, and short and long-term goals. While this understanding provides a solid footing for future planning and eliminates unnecessary ramp-up costs, a 20-year master plan also benefits from a fresh-look engineering team providing new perspectives to ensure the City's capital spending plans provide short- and long-term best value to its customers.

Added Value Propositions of the CH2M Team

The CH2M Team brings additional value to the City's master planning effort in the following ways:

- Assignment of the well-experienced GJ Schers as suggested Project Manager, located in Broward County, who has an excellent working relationship with utility management and City's engineers, knows the City's supply and treatment system very well and has similar master plan work experience.
- Excellent understanding of current system Operations to facilitate and improve data transfer and cooperation to ensure the project is quickly ramped up and kept on schedule.
- Knowledge of current design configuration of facilities through recent work assignments including a hydraulic assessment of the raw water transmission system to eliminate bottle-necks, initial assessment of SCADA improvements, bench and full-scale testing to improve clarifier performance, review of feasibility to achieve 4-log virus treatment, operational support to commission and optimize ion exchange treatment for color, including installation of a carbon dioxide system to avoid 'foul odor' customer complaints and an initial evaluation of residuals management to rectify existing deficiencies.
- Similar and recent experience of the suggested project team with master plan assignments, utilizing a very similar project approach and prioritization method by the same team, for the cities of North Miami Beach, Melbourne, Cocoa, and Marco Island, Bonita Springs Utility and Seminole Tribe of Florida.

As a global water and wastewater provider, CH2M brings together a balanced team of local experienced staff, knowledgeable about your systems, complemented by regional and national experts in the fields of strategic planning, asset management, utility financing, CIP prioritization, hydraulic modeling, infiltration/inflow, hydrogeology, and water and wastewater treatment.

An example of improvements made by CH2M is operating the solids contact clarifiers (below) at a slightly higher pH in 2017, improving settled water turbidity and finished water color.

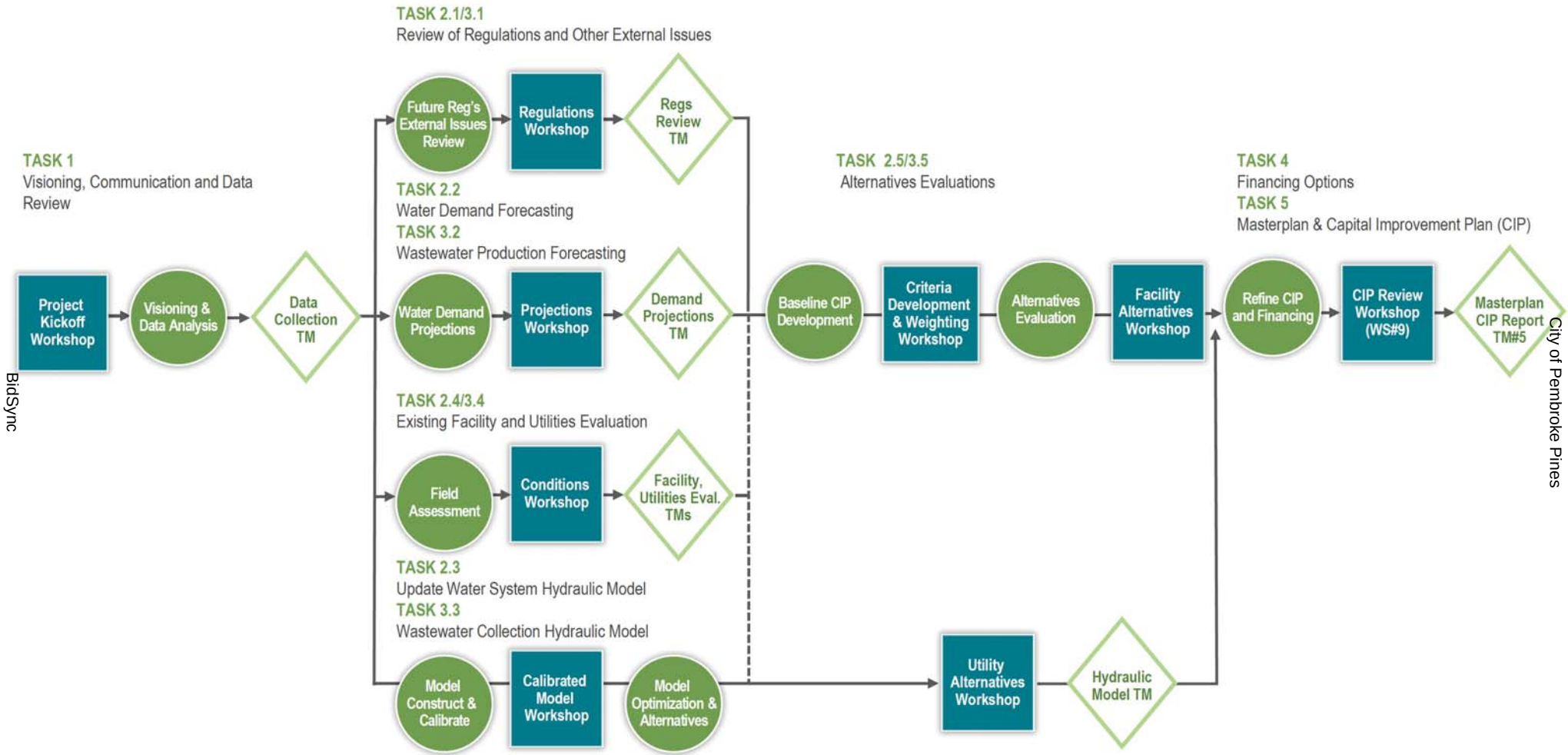
At that time, this was very important to gain quickly customer and regulatory confidence, however this was at the sacrifice of a high lime dose and higher sludge production. Going forward, this will be further optimized now that ion exchange is back on line!

Establishing the Planning Framework, Work Plan, and Data Collection Activities

Water and wastewater master plans that withstand the test of time are technically sound, affordable, and supported by regulatory agencies and local community. Thus, creating an effective structure to develop the master plan is key to sustaining the plan and meeting current and future water and wastewater needs. Our proposed approach facilitates decision-making and establishes key near-term strategic actions by integrating technical analyses, financial/economic factors, and stakeholder values into a flexible, implementable water and wastewater master plan.

Our project approach involves key elements— local visioning, water and wastewater demand forecasts, water supply and treatment evaluations, wastewater treatment and reuse evaluations, hydraulic modeling and optimization of systems, risk analyses, cost projections, financial analysis, and defensible decision-making to formulate a best- value master plan. To accomplish this, we will implement a comprehensive decision-making process that balances stakeholder, technical, and financial criteria to optimize system operations and integrate water and wastewater resources. This approach will result in a master plan that provides a roadmap for making strategic water and wastewater decisions. The suggested road-map with sequential and parallel tasks is included in the graphic on the following page.

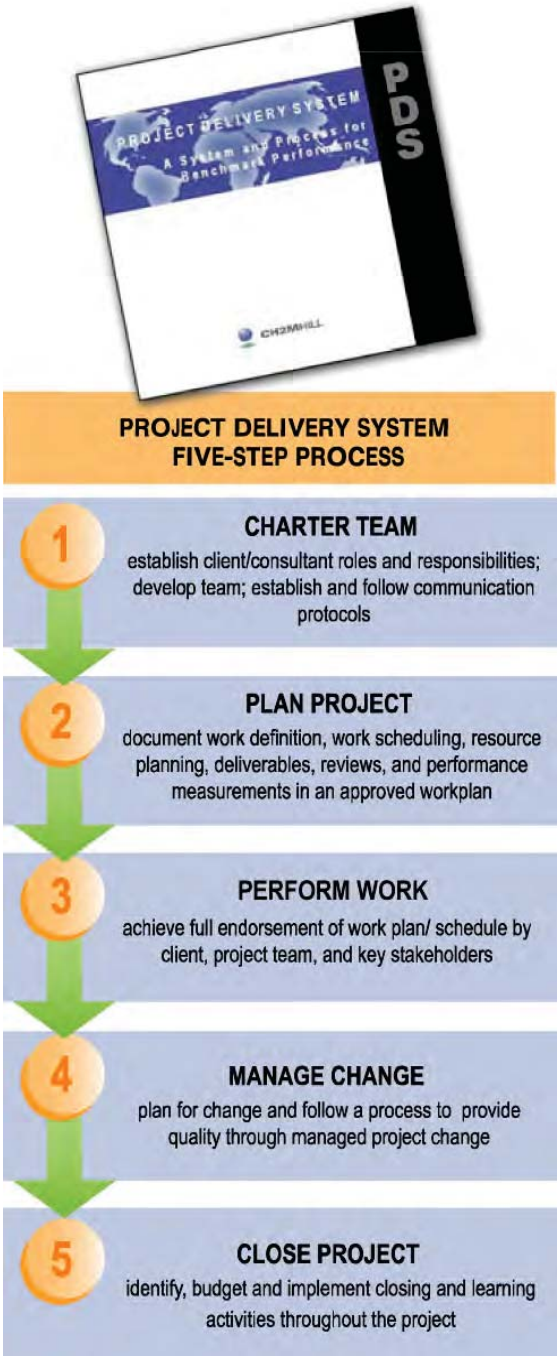
Utilities Comprehensive Master Plan Roadmap



Project Management

As a top-tier consulting engineering firm, CH2M Team considers project delivery a core competency. Our project delivery system creates a framework for successful project delivery that includes accountability, responsiveness, trust, and communication among all stakeholders. All our project managers are trained in the five-step process as depicted in the graphic on the right to enhance their ability to deliver quality projects on time and within budget. CH2M's policy for quality management on this project will be established at the project start. In support of this policy, we are committed to:

- Maintaining our excellent record on safety.
- Assigning the right person for the right job.
- Providing quality, excellence, and attention to detail in all our activities and deliverables.
- Ensuring conformance with industry standards through systematic application of our quality program.
- Using in-house supply and treatment optimization tools like CPES™, PreviewTM, Replica™ and Source™
- Conducting the following aspects as part of our project management approach:
  - Project administration and planning
  - Project execution, through performing multiple sequential and parallel tasks
  - Kick-off chartering workshop
  - Monthly progress reports
  - Workshops with the City staff to review interim deliverables addressing regulations and other external issues, water demand projections, hydraulic model results and recommendations, facility evaluation assessments, likelihood and consequence of failure matrices, needs prioritization, and treatment technology alternatives
  - Review meetings to discuss draft and final master plan reports
  - Final presentation of the master plan to City staff and/or commissioners



We commit to safety on this Project!

Safety is at the center of everything we do: CH2M has the lowest Total Recordable Rate for safety incidents in the water/wastewater industry at 1.1 (2014 data). As part of this project, we want to maintain this record.

Task 1 Visioning, Communication and Data Review

Clear communication is fundamental to master plan success. We propose a collaborative approach in which our team of technical and financial/economic experts works side by side with the City's staff to integrate innovative ideas into a practical plan. This collaboration method has worked well in the last three years of working together with the City. Project status meetings, workshops, progress reports, and routine discussions will keep the project on track and moving forward.

Kick-Off Meeting

The CH2M team will coordinate a kickoff meeting with the City. Expected outcomes from the meeting are confirmation of the City's utility goals, project/study boundaries, water source options, key stakeholders and critical relationships, and governance/institutional questions. We will also confirm the project schedule, clarify roles and responsibilities, define critical success factors, establish communication protocols, and define the decision-making and document review processes that will be used throughout the project.

Visioning

We propose a process within which we work with key City staff and leadership to develop a common vision of the water and wastewater future. For example; How will we plan for the growth west of I-75? Are there potential changes to how treated wastewater is handled and/or will reuse be required as part of the next Consumptive Use Permit submission?

Project Protocols and Data Collection

Following the kick off meeting, the team will establish project management and communication protocols, confirm final project scope and review, and commit to a project schedule. This meeting will initiate the collection of data for all project tasks and will document operational protocol and issues.

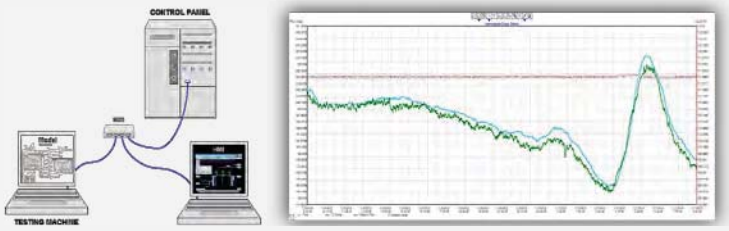
Deliverables:

- Project Execution Plan, with city's goals, common vision and communication protocol
- Data Collection Technical Memorandum (TM)

As requested in the RFQ, we have kept each system scope (e.g. Water and Wastewater) individually and separate. The financial evaluation and master plan report are addressed at the end of this section and cover both systems together.

Replica™ model is a dynamic in-house treatment performance and optimization tool that will be used to simulate and optimize treatment processes.

This dynamic tool combines hydraulics, process treatment, instrumentation and controls for simulation and optimization and allows "Flight Simulator" by the City and O&M staff to practice running the plant, for training!



Requested Information from the City may include:

- Wellfield, WTP, booster pump station and residuals discharge operational data
- Well completion and rehabilitation reports and progress reporting to South Florida Water Management District (SFWMD)
- Monthly operating reports from last 5 years, including finished water demands
- Record drawings and equipment Operation and Maintenance (O&M) manuals
- Geographic Information Systems (GIS) map of distribution system
- Copies of previous planning reports, as outlined above
- Up-to-date population projections and potable water demands, including 'raw' data used by SFWMD for the 2018 Lower East Coast Water Supply Plan Update
- Non-resident development plans
- Land use and unit density (current and projected) and
- Redevelopment plans

Task 2. Drinking Water System

The City intends to develop a comprehensive short- and long-term plan to manager their water system. The system includes nine production wells, one WTP, two remote storage and booster facilities, 539 miles of water mains and 4,600 hydrants. The system provides water services to the City of Pembroke Pines and small portions of unincorporated Broward County and has three emergency agreements for bulk water services. One of the first steps in beginning the analysis of future needs is to understand the operating framework of the water system, as such, CH2M will undertake an analysis of the current regulatory requirements, and interconnection agreements with the Cities of Sunrise, Cooper City and Miramar.

Task 2.1 Review of Regulations and Other External Issues Impacting the Water System

The CH2M team will use its regulatory knowledge to identify issues that may be relevant for the master plan regarding groundwater and alternative water supply source, treatment, residuals management and distribution system. Information relative to these acts, rules, or programs in the context of capital planning will be documented. Also, other external impacts to the master plan effort will be evaluated including climate change, economic development, population growth and population changes.

The following aspects will be covered in this task:

Water Supply

- Existing and potential future water supply sources (Biscayne and Floridan aquifers, Surface water, Reclaimed Water or Reuse and Aquifer Storage and Recovery)
- Consumptive use permit (CUP), including drinking water demand projections, split between withdrawal rates of East and Central wellfields, impacts to neighboring users and environmentally sensitive areas, and water reuse, conservation and water loss components.
- Impact of climate change on water demands and water supply
- Impact of economic development on water demands and water supply

Water Treatment Regulations and Guidelines

- Environmental Protection Agency (EPA) Safe Drinking Water Act (SDWA), including Rules related to Groundwater, Disinfection, Disinfection Byproducts, Total Coliforms, and Lead and Copper
- EPA National Primary and Secondary Drinking Water Standards
- Florida Administrative Code (FAC), including references to 10 state standards
- Advisory documents, guidelines, manuals of practice and consumer confidence reports
- Potential future regulations, including water constituents on the candidate contaminant lists (CCLs) and unregulated contaminant monitoring rule (UCMRs)

Residuals Management

- Lime softening solid residuals
- Ion exchange waste stream
- Other waste streams, including domestic waste, analyzer waste and process drain waste
- Potential future membrane concentrate

Level of Service

- Regulatory requirements and City's goals for reliability and redundancy, and level of service
- City's goals in terms of reuse and water conservation

This task also includes discussion and liaison with regulatory agencies and third parties, like lime sludge hauling companies, responsible for the aspects summarized above.

Deliverables:

1. Regulatory and External Factors TM

Task 2.2 Water Demand Forecasting

Demand forecasting can be done on a general geographic area or at a parcel-level basis. The traditional approach (general geographic area) can be done more quickly, with growth assumptions from such sources as transportation zones and City projections. The second approach is to build the projection at parcel level, where smaller tracts and lots can be analyzed more precisely based on their zoning and adjacent uses over the planning period. Demand forecasting can also be performed deterministically or probabilistically. Traditional approaches to water and wastewater master planning use deterministic models, where variables are estimated with "best guess" point estimates. Low, medium, and high estimates can be used to create a sensitivity range estimate, to reflect dry, average and wet weather conditions. This sensitivity approach concurs closely with the Bureau of Economic and Business Research (BEBR) methods. In general, the SFWMD uses the medium BEBR projections for water resource allocation during the Consumptive Use Permit process.

The City has indicated in the RFQ document that demand information on traffic analysis zones and recent metered customer account data shall be used for the population and water demand projections. Based on this, we have assumed that a parcel level analysis will suffice; however, we will work with the City to determine the best approach based on the appetite for risk and uncertainty. As a matter of general practice since the post-2009 "new" economy, the benefits of a probabilistic analysis may be interesting to the City.

Develop Water System Profile

A key element in forecasting water demand is understanding current trends regarding water use volumes, seasonality, and end-uses. This task will involve analyzing water use by customer type and end-use (e.g., residential, commercial, large user, and whole sale) to allow more precise forecasting, as well as to provide a basis for recommending demand management measures. For example, new developments within City's distribution area will likely have lower Equivalent Residential Unit (ERC) demand rates than older communities due to higher densities and new technology for water-saving fixtures and appliances. Similarly, we want to better understand drinking water demands under rainfall and drought conditions.

Develop Future Scenarios

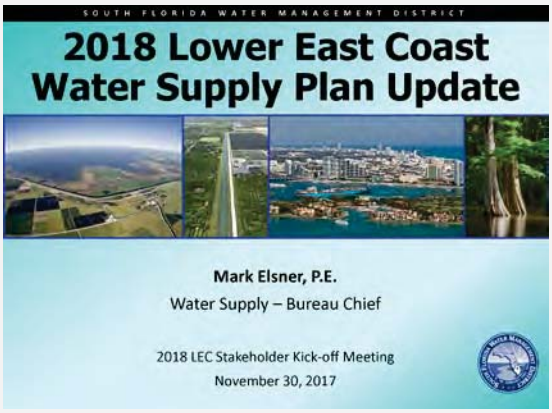
The ERC water use trend and the associated peaking factors that predict peak season water use are not only key in identifying system performance over the planning horizon, but more importantly predict the need for capital expenditures for growth as well as the future revenue from water sales that will be used to pay for expenditures. ERC water demands can change over time, affecting both capital needs and utility revenues. Thus, we propose to work with the City and concerned stakeholders to develop alternative "futures" that influence demand projections and supply availability. Key factors in these scenarios include rate of growth; changes in climate that could affect precipitation and temperature affecting both supply and demand; expansion and infill of City's service area; various water conservation methods; reuse requirements by SFWMD, and other external factors affecting drinking water demand.

City growth projections will be mainly governed by infill, growth and possible annexation out West!

Economic development, population growth, changes in commercial activities, and climate conditions may vary during the planning horizon. Although the City is nearing buildout, and infill mainly represents population growth, areas west of the City's boundaries may be annexed, including areas with bottling companies.

We will use the SFWMD's 2018 LECWSP Update in population projections for the City!

The SFWMW is currently going through an update of the 2018 Lower East Coast Water Supply Plan (LECWSP), with a 20-year planning period. Results will be available shortly and can be integrated in the master plan. Initial results indicate a continuation of growing fresh water demands with increasing competing users in the area (public water supply, domestic self-supply, agricultural, industrial and recreational supplies, and environmental restoration, like CERP).



Prepare Water Demand Forecasts

Using the scenarios developed and the system profile compiled, water use factors will be applied for various water uses within the planning region to project a range of water needs over time. These forecasts will provide a range of future water demand scenarios against which projections of existing supplies will be compared.

Deliverables:

- Drinking Water Demands TM

Task 2.3 Update Water System Hydraulic and Water Quality Model

Model Construction Update

An initial meeting will be held with the City to collect and discuss system information, including any potential. Utilizing the City's existing AutoCAD atlas data, CH2M will develop GIS maps with current pipe networks, pipe size and material to be used as base files for updating the 2004 drinking water hydraulic model using Bentley WaterGEMS software. WTP SCADA system data will be used to update pump flow rates in the hydraulic model. Recent information of customer service metered accounts will be used to update drinking parcel's water demands, and record drawings and City's GIS

will be used to verify pipeline size and material and confirm remote storage volumes and elevations, focusing on changes or expansion to the system since the last construct. Select calibrated data from the existing model will be used to refine hydraulic parameters. The hydraulic model will include distribution system pipe sizes from 2.5" and greater, or alternative to be agreed with the City.

Current data from the distribution system are contained in AUTOCAD Atlas data files by the City. This data needs to be converted to GIS first, before they can be used by a hydraulic model.

Model Calibration

Following the update to the hydraulic model, a workshop will be held with the City to review historical and current data required for developing the model calibration plan. Two calibration exercises will be performed, the first will identify major deficiencies and areas for additional consideration for adjustment and a second exercise to fine-tune the calibration. CH2M will perform the field work during the calibration exercises that will include a representative sampling of up to ten fire flow tests and use of existing system pressure transmitters. A workshop will be held with the City to review results of each calibration exercise and discuss the plan forward.

Model Optimization

Working with the City we will refine a set of water system performance criteria that will serve as a guide for evaluating system deficiencies and for capital improvement planning. Performance criteria may include:

- Storage facilities—criteria for equalizing, fire and emergency
- High service and booster pump capacity
- Transmission and distribution - grid pressure, pipe velocity and head loss
- Fire flow criteria
- Emergency/reliability criteria, including times when WTP is offline
- Water age and related water quality

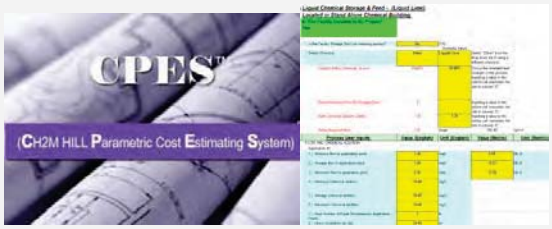
The model will use the drinking water projections and diurnal flow patterns from years 2020 through 2040 from the previous tasks. CH2M will review system deficiencies identified by the City and model results to develop alternative solutions to provide adequate pressure and flow throughout the system. The alternatives will address current deficiencies as it relates to water age, water quality and pressure distribution and deficiencies resulting from growth. Specific attention will be given to looping and alternative flow routing opportunities within the system to limit water age and improve water quality. Distribution water quality parameters to be included in the water quality model are pH, chlorine and ammonia, and its reaction product mono-chloramine. The alternatives will include pipe sizes, pipe location, storage and remote booster pump station requirements and other capital improvements. In a workshop with the City we will present and review results and propose alternative solutions. Preliminary cost estimates will be developed for the City preferred alternatives using CH2M's Parametric Design and Cost Estimating System (CPES™).

Deliverables:

1. Functional model including existing and future conditions of Pembroke Pines Water System
2. Drinking Water System Model TM

CH2M proprietary Parametric Design and Cost Estimating System (CPES™) will be used for quick and accurate cost estimating for alternative evaluation and CIP budgeting.

Input data include process criteria, structure sizes, pump types and materials of construction. The data within CPES engine are continuously updated and refined based on actual projects costs. Output data include tables and graphs with capital and operating cost estimates.



Task 2.4 Existing Water Utilities and Facilities Evaluation

Asset Condition Assessment

The first step of this evaluation task is to develop a plan for site investigations to be discussed in a planning workshop with the City. The plan will propose an approach for the condition assessments and define a unified method of documenting the results among the different engineering disciplines. Besides reviewing the plan, the City will be requested to provide an initial list of major deficiencies, concerns, and risks, based on their day-to-day experience of operating and maintaining the WTP and remote facilities. After the planning workshop with the City, discipline site visits and staff interviews will be organized by CH2M into four engineering discipline groups (1) architectural, structural, plumbing and HVAC, (2) process mechanical, electrical and instrumentation, (3) site and offsite civil and pipework and (4) I&C and SCADA. The assessments will cover the following aspects:

- Regulatory, local code compliance and industry standards and guidelines
- Condition of facilities and utilities, including for linear assets, age and material
- Health & safety and environmental standards and guidelines

We will document the findings of the condition assessments, record drawings and GIS maps review and staff interviews in spreadsheets and tables and provide an initial opinion on prioritization. The documentation will include, for each asset, the naming, coding and description, link to pictures, description of asset condition, original service life, expected remaining life, condition ranking (5 scales) and suggested priority of correction. A Class V opinion of probable construction cost using CPES™ will be provided for each need.

Deliverables:

1. Condition Assessment Planning TM
2. Condition Assessment Results TM

Hydraulic/Process Review

The first step of this task is to develop a plan for the hydraulic/process review to be discussed in a planning workshop with the City, to be combined with the planning workshop of the engineering discipline condition assessments. The plan will propose an approach for the assessments and define a unified method of documenting results by different hydraulic/process reviewers. After the planning workshop, site visits and staff interviews will be organized to include the following aspects:

CH2M has great familiarity with the City's Water Assets

The condition assessments will cover the following assets from the City of Pembroke Pines Drinking Water System:

- Four East and five Central Wellfield production wells (limited to review of written documents and interviews from 2017/2018 well rehabilitation work by AMPS)
- Production wells surface facilities
- Raw water lines (limited to review of written documents, GIS maps)
- Treatment plant rated at 18 MGD, with chemical and pump facilities
- WTP site civil structures
- Buildings and building mechanical
- Three onsite storage tanks with total volume of 5 MG
- Remote storage tanks (both 2.5 MG) and booster pump facilities at Academic Village and Holly Lakes
- Underground pipelines and structures within the WTPs site and remote storage sites boundaries (limited to review of written documents)
- Finished water transmission and distribution pipelines (limited to review of written documents)
- Four interconnects with neighboring utilities including Cooper City, Miramar (2x) and Sunrise
- Electrical infrastructure and standby power facilities
- Instrumentation infrastructure
- Communication networks and systems
- Security infrastructure

- Raw, intermediate and finished water quality records and trends
- Vulnerability, criticality and single point of failure
- Process/design configuration, compared with the current edition of the Recommend Standards for Water Works (10 state standards), Environmental Protection Agency (EPA), and Florida Administrative Code (FAC)
- Finished water storage and pumping capacity, compared with hydraulic model recommendations
- Unit process performance in terms of capacity and water quality, including identification of options for chemical and electrical optimizations
- Regulatory compliance

This task involves performing hydraulic evaluations and preparing a hydraulic model for the WTP,

CH2M team members have unique Florida expertise in lime softening (LS) and fixed-bed ion exchange (IX)

- North Miami Beach (LS)
- Deerfield Beach (LS)
- Bonita Springs Utility (LS)
- Cocoa (LS)
- Marco Island (LS)
- Pembroke Pines (LS & IX)
- Palm Beach County (IX)
- Town of Davie (IX)
- Lee County (IX)

including raw water transmission for which a model in ReplicaTM was already developed as part of a recent task order. The hydraulic model will compute hydraulic profiles for varying production flows to identify hydraulic bottlenecks and restrictions affecting treatment performance. Profiles will be verified on site by measuring water pressures and water elevations and calculate the accuracy. The process evaluation involves analysis of current performance and identification of options to enhance treatment, pumping and sludge handling performance utilizing our ReplicaTM dynamic tool combining hydraulics, process treatment and controls.

Process rating per unit process will be presented in graphical format to provide an overview of treatment unit ability and restriction. We will document findings of the hydraulic/process assessment in spreadsheets and tables. The documentation will include description of existing condition and suggested correction and priority. A Class V opinion of probable construction cost using CPES™ will be provided for each need.

Deliverables:

1. Hydraulic/Process Review Planning TM
2. Hydraulic/Process Review Results TM

Risk-Based Prioritization and Asset Replacement Model

The objective of this task is to provide the City with the information and methodology necessary to improve the management of its infrastructure assets through a risk-based approach. By learning and applying the methodology along with asset management principles and practices, staff will be able to improve their ability to identify needed capital improvements and enhancements to maintenance protocol, as well as making defensible decisions on prioritizing capital investments and operating expenses. CH2M will work with the City on the analysis of the likelihood of failure and the consequence of failure for assets, including matrices and scoring systems, to calculate risks for significant assets.

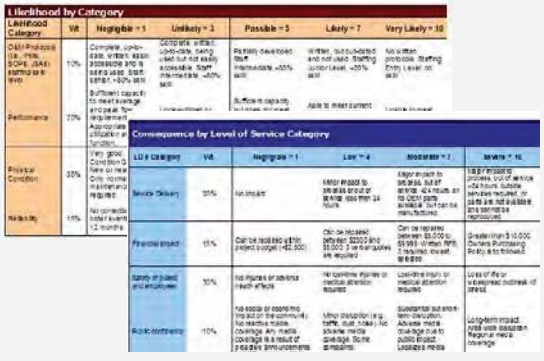
- Step 1: Likelihood of failure (LOF): A one-day workshop will be conducted for determining the LOF matrix to use for assets in each functional area starting with matrices used elsewhere and modified based on the City's input. LOF determinations essentially equate to the physical condition of the asset.
- Step 2: Consequence of failure (COF): During the same one-day workshop, the COF matrix will be determined to use for assets in each functional area starting with matrices used elsewhere and modified based on the City's input. The categories used in this task will be identified and weighted for importance by the City with guidance from our asset management professionals.
- Step 3: Risk Scores: With COF and LOF scores established, CH2M will calculate the risk for linear and vertical assets. The results will be reviewed and validated with the City in a workshop prior to finalizing ratings and proceeding with development of the final roll-up to risk score for each significant asset. Assets with an unacceptable risk score should be candidates for a future condition assessment program, with upgrades or parts replacement, which would in turn change LOF scores. The condition assessment and risk scoring would be an iterative process whereby the highest risk assets are updated as new information becomes available.
- Step 4: Asset Replacement Model: The information developed in previous steps will be contained in an asset replacement model. A preliminary or baseline model will be developed in this task with further refinement after the alternatives evaluation. Once the relative risk of assets and asset groups are identified, CH2M will work with the City to identify an initial list of risk reduction options for those assets having an unacceptable level of risk. As part of the task, CH2M will develop an asset hierarchy which will organize major assets and logical groups of assets in a "parent-child" relationships. The asset replacement model will contain cost estimates developed in previous tasks which feed into a baseline Capital Improvement Plan (CIP), divided into short-term (0-5 years) and long-term (5-10 years and 10-20 years).

Deliverables:

- Matrices with LOF, COF and Risk Scores
- Asset Replacement Model with Baseline CIP

CH2M will use LOF and COF example matrices used elsewhere in Florida for master planning and CIP development purposes to provide good and proven go-bye for the City's consideration.

These matrices were used by our proposed Project Manager for City of Cocoa and City of Melbourne.



Task 2.5 Alternatives Evaluation

Components of the City WTP were commissioned in the 1980s, 1990s and early 2000s and therefore do not incorporate several recent improvements in treatment technology and controls that may reduce operating cost. CH2M brings a unique blend of experience and optimization tools that can quickly and cost effectively find the combination of improvements, operating changes and control upgrades that will have the greatest impact on facility operations and shortest payback of capital expenditures. Our team conducted recent process optimization studies on water facilities from wells, to treatment processes, to high service pumping. Recent studies for North Miami Beach, Melbourne, Bonita Springs Utilities, Lee County, and Collier County each identified several ways to reduce power, chemical consumption and replacements saving each utility tens to hundreds of thousands of dollars in annual operating costs. CH2M's Replica™ dynamic simulation software models the entire treatment process to identify process changes that reduce power and chemical costs, and improve water quality and operations.

Dependent upon the results of previous tasks and benefits identified above, the City may decide to maintain the existing WTP and remote storage and booster pump stations and provide mainly replacement and repair (R&R) work as part of the CIP. However, if additional treatment or storage capacity is needed to meet drinking water demands over the planning horizon or if newer technology would provide operational benefits and/or cost savings as discussed before, the City may want to consider alternatives to maintaining the existing system. This task considers developing these alternatives at high levels for consideration of the City. Design criteria, approximate footprint requirements and capital and operating costs will be developed for these alternatives. In case additional treatment capacity is needed or if treatment technology is changed, the baseline CIP will be updated with these needs.

Deliverables:

- Alternatives Evaluation TM with Updated CIP

Task 3. Wastewater System

The City intends to develop a comprehensive long and short-term plan to manager their wastewater system. The system includes one WWTP, 190 lift stations, 538 miles of gravity mains and 39 miles of force mains. The system provides wastewater services to the City of Pembroke Pines as well as small portions of unincorporated Broward County. One of the

CH2M has developed initial system expansion and process improvements options which would provide the City benefits:

- Develop a supplemental water source and use membrane treatment at a new West WTP near the Everglades to meet demands with a cost-effective and best-available technology solution, alleviating hydraulic, water-age and redundancy problems west of the I-75. Water sources may include Biscayne aquifer, with a stormwater or reuse offset component, or Floridan aquifer.
- Add a new lime sludge thickening and dewatering system to improve residuals management at the WTP, thereby eliminating current capacity restrictions in the backwash recovery and sludge handling facilities and reducing lime sludge disposal costs.
- Improve hydraulics and mixing conditions of clarified water and filtered/ion exchanged waters in the clearwell to simplify chemical dosing and controls and provide additional redundancy in the WTP.

first steps in beginning the analysis of the future needs is to understand the operating framework of the wastewater system, as such, CH2M will undertake an analysis of the current regulatory requirements, interconnection agreements, as well as agreements with volume sewer customers.

Task 3.1 Review of Regulations and Other External Issues Impacting the Wastewater System

The permits currently held by the Utility Department will be reviewed to document the operating requirements and identify future requirements which may go into effect based on pending regulatory changes or in response to agreements with regulatory agencies for future expansions. This review will allow the City to meet existing requirements and better anticipate future requirements. The operating permits at the WWTP and the deep injection wells, and service agreements will be reviewed. As part of the review, meetings will be held with representatives from regulatory agencies to discuss future compliance requirements. These requirements will be documented and included in the development of future alternatives for evaluation during development of the wastewater system master plan. The regulation review and factors that impact the system will also include a review of wastewater flows, the existing residuals management plan, and level of service.

Wastewater Flows

- Existing and potential future wastewater flows, including the inter-local agreement with the City of Hollywood and bulk customers
- Impact of climate change on collection system, Infiltration/Inflow
- Impact of land use and economic development on wastewater flows

Wastewater Treatment Regulations and Guidelines

- EPA National Wastewater Standards, Clean Water Act, including Ten State Standards for Wastewater Facilities
- Florida Administrative Code (FAC),
- Advisory documents, guidelines, manuals of practice and monthly reports
- Potential future regulations, including emerging pollutants of concern, and enhanced nutrient removal

Residuals Management

- Biosolids
- Treated effluent

Level of Service

- Regulatory requirements and City's goals for reliability and redundancy, and level of service required
- City's goals in terms of reuse and water conservation

Deliverables:

1. Regulatory and External Factors TM

Task 3.2 Wastewater Production Forecasting

Accurate forecasting of wastewater production flows will be key to the modeling effort as well as evaluating the facilities for existing and future conditions. The City has indicated that the records for the collection system are incomplete. However, CH2M has been assisting the City for the last three years with operations of the collection system, lift stations and WWTP. Where data gaps exist, CH2M has the resources to provide additional staff to gather the missing pipe data. The pipe condition data, that was been gathered in the last three years, will also be needed to develop an accurate model of the system. Lastly the City has identified Infiltration/Inflow (I/I) reduction as a long-term goal to reclaim system capacity and defer upgrades. CH2M has extensive experience conducting I/I characterization studies. I/I studies have been recently completed for Miami-Dade County, Florida; Johnson County, Kansas; Cincinnati, Ohio; Springfield, Missouri; and DeKalb County, Georgia.

The wastewater demand forecasting will be developed using traffic analysis zones (TAZ) as required by the City together with customer records and meter data. Low, medium and estimates can be created to test dry, average day and wet weather flows. A sensitivity approach that considers various system operating conditions provides a better understanding of the various conditions that might occur within the collection system. As mentioned in the approach to the water master plan, since the post-2009 "new" economy, a probabilistic analysis may be of benefit and interest to the City.

Develop Wastewater System Profile

Understanding the wastewater flows based on water consumption, I/I, seasonal changes and other uses will be key to preparing reasonable forecasts. This task will involve analyzing flows for individual customers and types of customers to improve forecasting accuracy. The I/I characterization efforts to be completed are further detailed in the following pages.

To date, CH2M has delivered more than 500 projects that have included I/I investigations, flow monitoring, hydraulic modeling, long-term wastewater conveyance master planning, and wet-weather SSO control programs.

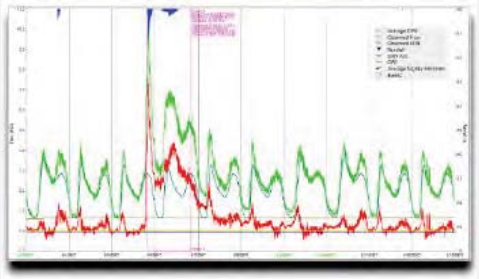
I/I Characterization

I/I is the result of storm water or ground water entering the sanitary sewer collection system. CH2M will use flow and rainfall data to characterize the response of the sanitary sewer collection system to ground water infiltration and rainfall derived inflow and infiltration (RDII). The evaluation will allow the I/I to be characterized and provide flow parameters for the hydraulic model analysis. The first step in characterizing the I/I will involve establishing a flow monitoring program to obtain quality flow data based on the development of a flexible approach to target basins with high RDII rates. Our approach includes an initial installation of approximately flow monitors and rain gauges for a 6-month period with additional monitors to be installed in strategically targeted locations for the last 4 months. These meter locations will be selected after review of initial metering information to quickly isolate sources of RDII in increasingly smaller areas. Additionally, these targeted meters might be relocated multiple times during the monitoring period to further identify micro-areas of RDII.

Dry and Wet Weather Flow Analysis

All flow monitoring data collected will be analyzed for both dry and wet weather components. The average dry weather flow (DWF) for each basin will be obtained using the SSOAP Toolbox to average the appropriate weekday and weekend flows. The DWF will then be adjusted to account for seasonal changes in groundwater infiltration based on the observed flow and the assumption that the RDII should remain near zero during periods of DWF. During the I/I Characterization task, rainfall events are defined and the RDII response for each event is calculated. These events are carried over into the modeling task but are identified and characterized in this task. This analysis, following the USEPA SSOAP Toolbox protocol, is a RTK analysis (RTK is an analysis of the relationship of the time of start of the storm to the time peak of the different components of the infiltration/inflow reach a peak). A representative RTK set will be developed for each meter shed using the 95th percentile R values and the median T and K values.

CH2M team will use the USEPA SSOAP Toolbox to characterize the flow for both dry and wet weather components, as we did for the Cincinnati project.



Deliverables:

1. Waste Water Production Forecast and I&I Characterization TM

Task 3.3 Wastewater Collection System Model

The team of modelers assigned to this project will build, calibrate, validate a model of the Pembroke Pines sewer system. That model will provide data on conveyance, storage and real-time control of the sewer system. CH2M has over 40 modelers in the US. They are experts in flow and rainfall analysis, model building, calibration, and validation, and model analysis to support the City's engineering and operational needs.

Since 2011, CH2M has delivered more than 70 wastewater modeling projects for more than 40 clients.

CH2M will take the City's 2012 Bentley Water CAD model and utilize it as the basis for updating the wastewater collection system model. The existing AutoCAD atlas will be used to gather data on the existing pipe with supplementary information from field data collection. A new model will be developed to address the Eastern and Western portion of the system, which is accurately covered in the 2012 model. The output from SSOAP, flow data, ground water infiltration and RTK's will be input to the model and calibrated in order to generate model flows which will be compared to calibration criteria. The model will simulate high and low ground water dry weather flow as well as wet weather RDII response to storm events.

CH2M will employ the following process to update the calibration of the existing hydraulic model:

1. Collect data, including but not limited to GIS, as-built data, and lift station operational data
2. Develop a modeling protocol that provides detailed direction for the model updates, calibration, and validation
3. Update the model infrastructure and naming conventions to reflect the most recent GIS naming conventions
4. Update the model flow factors and assumptions used to generate flow in the model, including the population and contributing areas
5. Calibrate and validate the model for both dry weather and wet weather conditions to Wastewater Planning Users Group guidelines

Once the model has been calibrated, analysis of various alternatives as outlined by the City in the proposal will be conducted to determine their impact on the operation, maintenance and capacity of the wastewater collection system pipelines, lift stations and treatment plants.

- The first requirement is an assessment of the system's ability to meet current demands, and provide operating redundancy during peak hourly flows and I/I event. The activities completed during previous tasks will provide the data needed to conduct this analysis. The updated and calibrated model will be developed to represent the existing and future conditions. The existing conditions model will reflect the current status of the system and will be calibrated to the flow conditions represented by the flow monitoring program. The future model will reflect the projected population, contributing area, and flow changes (RDII and groundwater) for the selected future condition.
- The second requirement is an assessment of the system impacts associated with the gain or loss of a large customer. This will be address as a changed assumption either in the current or future conditions based on discussions with the City.
- The third requirement is an evaluation of the impact of I/I on the collections, transmission and treatment systems as discussed in previous tasks. As a result of the model analysis CH2M will provide recommendations, and planning costs by priority area to address I/I by each lift station boundary area. CH2M developed and piloted a RDII and antecedent moisture proves for modeling sanitary sewer systems in Cincinnati's Mill Creek Basin. The benefit is the system-wide model can more accurately model changing flow response to groundwater and wet weather. Our team will bring this proven process to Pembroke Pines for the model update.
- The fourth requirement is to determine future improvements to provide capacity, and redundancy. The necessary improvements will be identified based on model results that meet level of service requirements for current and future conditions.
- Lastly the City requested that sewer laterals as a source of I/I be addressed. Once the initial flow monitoring program is completed and improvements have been made, additional data will be collected to measure I/I. Once the manholes and mains in a lift station basin have been repaired and rehabilitated then the next potential sources of I/I is the lateral that connects the customer to the collection system.

Deliverables:

1. Functioning model including existing and future conditions of Pembroke Pines Wastewater Collection System
2. Modeling analysis TM

Task 3.4 Existing Wastewater Utilities and Facilities Evaluation

The CH2M team will assess the performance, efficiency and regulator status of the wastewater treatment plant, effluent quality, biosolids, disposal options and overall operations improvement in terms of meeting the current and future conditions of the wastewater collection and treatment system. The wastewater production forecast together with the modeling analysis will identify needed improvements to the collection and treatment portions of the system. CH2M pioneered the use of risk-based asset management to optimize processes, performance and sustainability practices in the water and wastewater industry. We regularly work to develop long-term asset renewal and replacement forecasts, perform business case evaluation (BCE) to assist in developing capital projects, and perform capital improvement plan (CIP) prioritization.

Physical Condition Assessment

A physical condition assessment action plan will be developed with field assessments completed based on the criticality assessment and a review of existing asset data. Prioritization for the collection of new data and updating of existing will be based on criticality plus factors, such as accessibility and health, safety, and security considerations. Implementation of field activities will be structured in a manner that reflects the benefit-cost of data to be collected.

The approach follows the Water System condition assessment by first develop a plan for site investigations to be discussed in a planning workshop with the City. The plan will ensure a unified method of documenting the results is used among the different engineering disciplines. After the planning workshop with the City, discipline site visits and

> Crucial to our approach is the use of the risk-based AM prioritization methodology tailored to your utility. This methodology provides the most value in the least time, by using available information and data, along with the knowledge and experience of utility staff, to make an initial determination of risk of failure of infrastructure.

staff interviews will be organized by CH2M into four engineering discipline groups (1) architectural, structural, plumbing and HVAC, (2) process mechanical, electrical and instrumentation, (3) site and offsite civil and pipework and (4) I&C and SCADA.

The assessments will cover the following aspects:

- Regulatory, local code compliance and industry standards and guidelines
- Condition of facilities and utilities, including for linear assets, age and material
- Health & safety and environmental standards and guidelines

We will document the findings of the condition assessments, record drawings and GIS maps review and staff interviews in spreadsheets and tables and provide an initial opinion on prioritization. The documentation will include, for each asset, the naming, coding and description, link to pictures, description of asset condition, original service life, expected remaining life, condition ranking (5 scales) and suggested priority of correction. A Class V opinion of probable construction cost using CPES™ will be provided for each need.

Deliverables:

1. Condition Assessment Planning TM
2. Condition Assessment Results TM

Hydraulic/Process Review

The first step of this task is to develop a plan for the hydraulic/process review to be discussed in a planning workshop with the City, to be combined with the planning workshop of the engineering discipline condition assessments. The plan will propose an approach for the assessments and define a unified method of documenting results by different hydraulic/process reviewers.

After the planning workshop, site visits and staff interviews will be organized to include the following aspects:

- Raw characterization and effluent water quality records and trends
- Vulnerability, criticality and single point of failure
- Process/design configuration, compared with the current edition of the Recommend Standards for Wastewater Works (10 state standards), Environmental Protection Agency (EPA), and Florida Administrative Code (FAC)
- Unit process performance in terms of capacity and water quality, including identification of options for chemical and electrical optimizations
- Regulatory compliance

This task involves performing hydraulic evaluations and preparing a hydraulic model for the WWTP. The hydraulic model will compute hydraulic profiles for varying production flows to identify hydraulic bottlenecks and restrictions affecting treatment performance. Profiles will be verified on site by measuring water pressures and water elevations and calculate the accuracy. The process evaluation involves the analysis of current performance and identification of options to enhance treatment, pumping and sludge handling performance utilizing our ReplicaTM dynamic tool combining hydraulics, process treatment and controls.

Process rating per unit process will be presented in graphical format to provide an overview of treatment unit ability and restriction. We will document findings of the hydraulic/process assessment in spreadsheets and tables. The documentation will include description of existing condition and suggested correction and priority. A Class V opinion of probable construction cost using CPES™ will be provided for each need.

Deliverables:

1. Hydraulic/Process Review Planning TM
2. Hydraulic/Process Review Results TM

Risk-Based Prioritization and Asset Replacement Model

The Solomon-Oldach Asset Prioritization (SOAP) method is proposed as the primary methodology for evaluating criticality. SOAP has been documented to save 50 to 70 percent of staff time compared to traditional assessment methods and yields 80 to 95 percent similar results. SOAP makes use of geospatial depictions, process block diagrams, process & instrumentation control diagrams (P&IDs), equipment listings, maintenance histories, and facility performance data. It uses the following steps:

- Step 1: Determine Likelihood of Failure (LOF)
- Step 2: Determine Consequence of Failure (COF)
- Step 3: Calculate Risk Score
- Step 4: Develop Asset Replacement Model

These steps were detailed in the Water System approach section. The SOAP method has been used successfully at numerous water utilities, including as the primary tool in major risk-based asset management programs for Gwinnett County (GA), Seminole County (FL), City of Cocoa (FL), City of Melbourne (FL), Mount Pleasant Waterworks (SC), and the City of Rocky Mount (NC).

Deliverables:

1. Matrices with LOF, COF and Risk Scores
2. Asset Replacement Model with Baseline CIP

Task 3.5 Alternatives Evaluation

The CH2M team will evaluate alternatives for operating the wastewater collection system in 2020, 2025, 2030, 2035, and 2040 (build out) of the City. The alternatives will be developed based on the results of the modeling analysis, and facilities evaluation. Each alternative will include O&M and CIP improvements necessary to meet the wastewater flow forecasts at each of the City's planning years of 2020 thru 2040.

CH2M team will evaluate potential benefits of newer wastewater treatment technologies to the City. Recently the City changed the dewatering processes to centrifuges at the WWTP.

Should additional treatment, conveyance or disposal capacity be needed to meet wastewater demands over the planning horizon or an additional east wastewater treatment plant would compensate for a potential discontinued Hollywood discharge or newer technology would provide operational benefits and/or cost savings, CH2M will evaluate these alternatives to maintaining the existing system. This task considers developing these alternatives at high levels for consideration of the City. Design criteria, approximate footprint requirements and capital and operating costs will be developed for these alternatives. The baseline CIP will be updated to include additional treatment capacity improvements and any new treatment technology identified during the alternatives evaluation. The CIP will also reflect the phased replacement of assets based on the results of the condition assessment, and future growth requirements.

Deliverables:

1. Alternatives Evaluation TM with Updated CIP

Task 4 Financing Options for Water and Wastewater

The updated CIP will provide the investment schedule required to meet the replacement, improvement and expansion needs of a growing utility. Potential candidate funding options will be reviewed, including:

1. Pay as you go
   - Directly funding improvements from current revenues or reserves
2. Debt funding
   - Revenue or General Obligation Bonds
   - Bank loans
   - FDEP State Revolving Fund (SRF) loans (subsidized interest rate with 20 -year level repayment period)
   - EPA WIFIA Loan (potential 35-year loan repayment period with low interest rate)
3. Grants (GrantFinder@)
   - SJRWMD (cooperative funding, other funding programs)
   - State and Federal Legislature (special appropriations, water legislation, Amendment 1 funding)
4. Public-private partnerships
   - Design-build (DB), Design-build-operate (DBO) and Design-build own & operate (DBOO).

Historical operating revenues and expenses will be reviewed to evaluate if the revenue generating capacity of the water and wastewater system is sufficient to meet coverage requirements or if additional funding sources need to be obtained. Operating and non-operating expense estimates will be reviewed to verify that reasonable level of renewal and replacement are allowed for and to determine the effects of the planned facilities on revenues from rates. Current rates and charges will be verified and compared with other nearby communities. Conclusions and recommendations will be developed regarding financial parameters and performance of the City's utility system and will be included in the TM.

Deliverables:

1. Financing Options TM

CH2M is an industry leader in utility financing and fee development, with successful track record in obtaining grants, and low-interest loans from the state and water districts.

Task 5 Utilities Comprehensive Master Plan Report (Water and Wastewater)

CH2M will develop a draft Utilities Comprehensive Master Plan Report utilizing the TMs developed under the previous tasks, and submit to the City for discussion. A focus of the review meeting is to finalize the categorization of CIP into short-term needs (within first 5 years), mid-term needs (between 5 and 10 years) and long-term needs (between 10 and 20 years). The report will identify funding sources and will group capital needs for individual assets into projects to facilitate efficient contracting and delivery. Following the review workshop, the report will be finalized.

Deliverables:

1. Master Plan Report

Current Workload

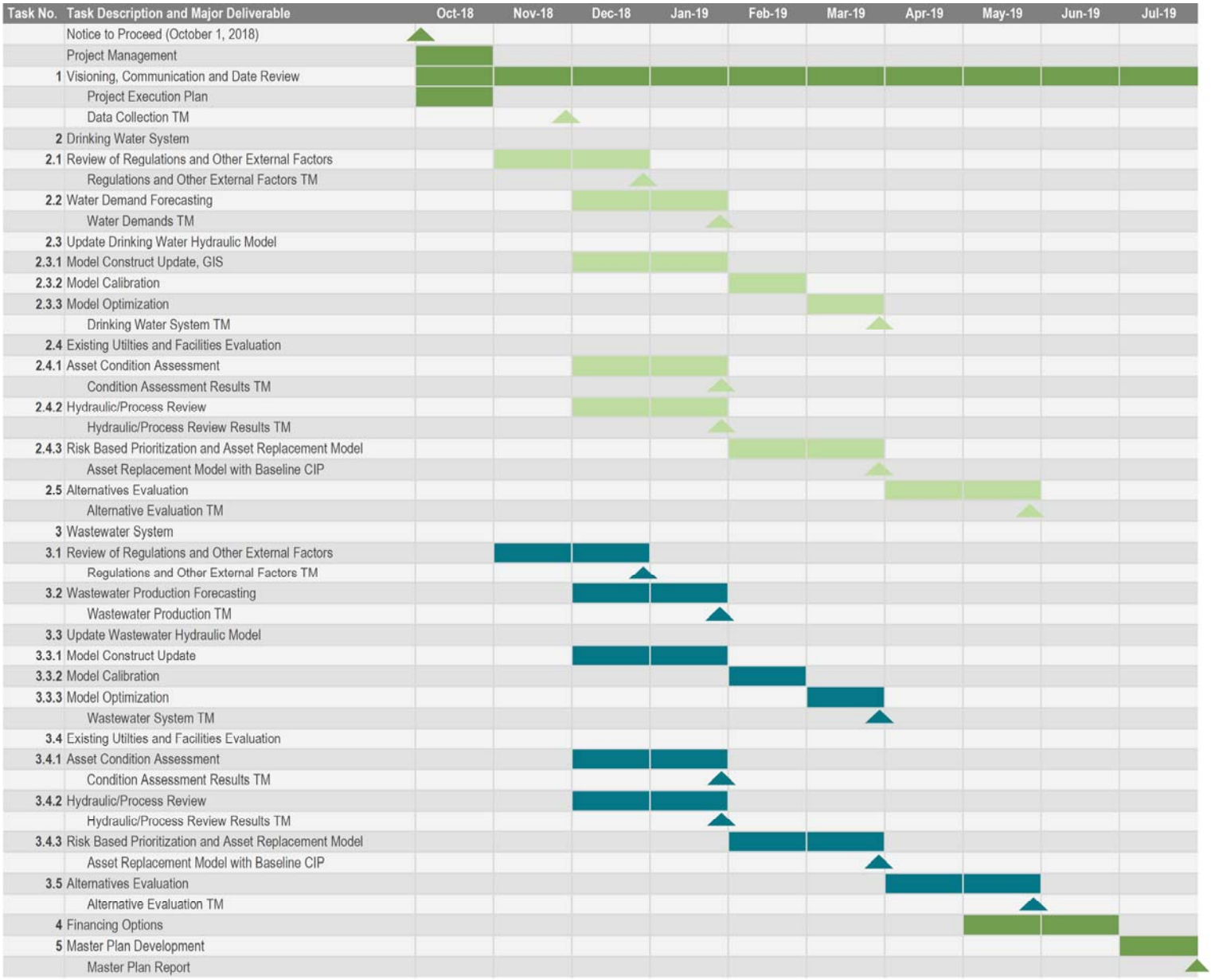
Our key team members have been selected for both their technical expertise and commitment to providing responsive services to the City of Pembroke Pines on this assignment. Our Principal-in-Charge Didier Menard has full authority to assign local, state and national resources to the project as needed. Based on current work/labor commitments, we summarize the availability of key team members for future project in the following table:

Key Personnel/Role	Current and Projected Work (2018)	Projected Workload Availability (10/1/18)
GJ Schers, PMP Project Manager	• Pembroke Pines O&M Support • Melbourne Membrane Replacement and Master Plan • Cocoa DBP Sludge • Bonita Springs RO WTP Expansion • North Miami Beach Phase I Construction	40%
Didier Menard, PE Principal-in-Charge	• Melbourne Membrane Replacement and Master Plan • Seminole County CIP Program	20%
Christina Ortega-Castineiras, PE Task Lead – Water Supply & Treatment	• North Miami Beach Phase I Construction • Miami-Dade Preston/Hialeah WTPs Upgrades • Seminole Tribe of Florida Program Management	50%
Juan Aceituno, PE Task Lead – Wastewater Treatment & Disposal	• Coral Springs Reuse Feasibility Study • Miami-Dade District WWTP Renewal & Replacement • North Miami Beach Phase I Construction	50%
Steve Riley, PE Task Lead – Distribution/ Collection	• Seminole County CIP Program • Cocoa and JEA 20-year Planning Studies	50%

B) SCHEDULE FOR COMPLETION OF SCOPE OF SERVICES

Below is our estimated schedule for completion of the master plan, hydraulic study and rate study. The schedule includes key milestones (phases, tasks, working products, submission of draft plans, hydraulic study and rate study.

UTILITIES COMPREHENSIVE MASTER PLAN SCHEDULE



TAB 6

Client References and Past Performance

CITY OF PEMBROKE PINES

Utilities Comprehensive Master Plan Services

RFQ # PSUT-18-03



Tab 6 - Client References and Past Performance

A) Past Performance

Comprehensive Utility Master Planning

CH2M HILL's lessons learned and leading edge tools from extensive regional master planning capabilities and experience provide a strong foundation for development of the City of Pembroke Pine's water and wastewater master plan. Water and wastewater are core areas of expertise for our company, and we bring significant corporate resources in master planning. These resources include the full suite of hydraulic models and one-of-a-kind tools for system optimization, which will keep the City on the leading edge of planning and technology.

Bonita Springs, FL	Pembroke Pines, FL	St. Johns County, FL	Fort Wayne, IN	Lewisville, TX	Roanoke, VA
Clermont, FL	Melbourne, FL	Fort Wright, KY	Kansas City, MO	Philadelphia, PA	Fairfax County, VA
Englewood, FL	Miami, FL	Cincinnati, OH	Ocean Springs, MS	Auburn, AL	Clayton County, GA
Franklin County, FL	Miami-Dade County, FL	Dayton, OH	Dallas, TX	Aliceville, AL	Forsyth County, GA
Lee County, FL	Palm Beach County, FL	Cleveland, OH	Seguin, TX	Carboro, NC	Gwinnett County, GA

Our master planning approach described in Tab 5 includes the full range of infrastructure management elements, and is intended to add value to the City's asset base. Our multi-disciplinary team of engineers, planners, and financial analysts will work closely with City to develop a comprehensive water and wastewater plan that is tailored to the size and nature of the assets being managed.

CH2M HILL master plans typically include:

- Up-front assessment of the age, condition, and function of existing facilities
- Planning studies to assess future needs, including their environmental impacts
- Development of plans for capital improvements, either new facilities or the repair and rehabilitation of existing works
- Financial analyses to support the decision and prioritization process

The CH2M HILL team will apply the information gained from these efforts to develop alternatives for meeting short- and long-term goals for water supply, water treatment and distribution, and wastewater collection and treatment. The resultant master plan will provide a basis for decision making regarding the use of existing facilities, the design and construction of new systems, and requirements for the acquisition of land rights.

CH2M HILL, through our experience working for the City of Pembroke Pines, has a deep understanding of your water and wastewater systems. We have specialists in modeling and utility master planning, as described in Tab 5, who bring a fresh perspective on robust planning and utility management efforts going on around the nation. We understand that decisions that the City makes today regarding the replacement, repair and expansion of its water and wastewater infrastructure will affect the level of public service and revenue requirements for years to come.

CH2M HILL has helped other clients in Florida and the Southeast to protect and extend the useful lives of the most critical systems, make sound decisions regarding the sizing and timing of new capital investments and make appropriate decisions regarding the level of maintenance activity. We summarize some of the most relevant master planning project experience in Tab 4.

B) CLIENT REFERENCES

Client references are provided as Attachment L following this page. We are also including performance reviews recently completed by these clients as part of previous RFQ/RFP submittals. We encourage you to contact any of our clients for additional feedback on our performance.

City of Pembroke Pines

Attachment L

REFERENCES FORM

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

Reference Contact Information:

Name of Firm, City, County or Agency: Ave Maria Utility Company

Address: 5076 Annunciation Cir # 102

City/State/Zip: Ave Maria, FL 34142

Contact Name: Jason Vogel Title: Utility Director

E-Mail Address: Jvogel@AMUC.com

Telephone: (239) 348-0248 Fax: N/A

Project Information:

Name of Contractor Performing the work: CH2M HILL Engineers, Inc.

Name and location of the project: Ave Maria WTP Evaluation and Expansion Planning

Nature of the firm's responsibility on the project: Ave Maria incorporates 100 percent reuse of all treated treated wastewater including the membrane system concentrate. Reuse storage is maintained through capacity in multiple lakes. However, the increases in wastewater production that will increase the storage requirements, along with lower cost of injection wells, may change the best disposal philosophy for the expanded Ave Maria facilities. This project evaluated the planned phasing and expansion requirements of the WTP, WWTP, and disposal facilities. Using the updated AMUC demand projections, CH2M reviewed the facility phasing, defined expansion requirements and made recommendations for facility expansion/upgrades based on the new build-out requirements. CH2M also provided planning level costs for all three facilities to assist AMUC in the continued planning of the Ave Maria facilities.

Project duration: 550 days Completion (Anticipated) Date: 2017

Size of project: Multiple projects Cost of project: $44,000

Work for which staff was responsible: WTP planning

Contract Type: Lump sum

The results/deliverables of the project: Major expansion planned for WTP.

Name of Company/Individuals Requesting Reference Information:	CH2M HILL ENGINEERS INC.
Name of Evaluator Completing Reference:	Jason Vogel
Name of Evaluator's Company	Ave Maria Utility Company
Email Address of Evaluator	jvogel@AMUC.Com
Phone Number of Evaluator	239-348-0248
Signature of Evaluator	

City of Melbourne is implementing a process that collects reference information on firms and their key personnel to be used in the selection of firms to perform *professional consulting services for the Water Production Facility Evaluation and Master Plan*. The Name of the Company listed in the above has listed you as a client for which they have previously performed work. Please complete the survey. Please rate each criteria to the best of your knowledge on a scale of 1 to 10, with 10 representing that you were very satisifed (and would hire the firm/individual again) and 1 representing that you were very unsatisfied (and would never hire the firm/indivdiual again). If you do not have sufficient knowledge of past performance in a particular area, leave it blank and the item or form will be scored "0."

Project Description: Ave Maria WTP Evaluation and Expansion Planning Completion Date: May 2017

Project Budget: $44,000 Project Number of Days: 550

Change Orders - Dollars Added : $0 Change Orders - Days Added: 0

Item	Criteria	Score
1	Ability to manage the project costs (minimize change orders to scope).	10
2	Ability to maintain project schedule (complete on-time or early).	10
3	Quality of work.	10
4	Quality of consultative advice provided on the project.	10
5	Professionalism and ability to manage personnel.	10
6	Project administration (completed documents, final invoice, final product turnover; invoices; manuals or going forward documentation, etc.)	10
7	Ability to verbally communicate and document information clearly and succinctly.	10
8	Abiltity to manage risks and unexpected project circumstances.	10
9	Ability to follow contract documents, policies, procedures, rules, regulations, etc.	10
10	Overall comfort level with hiring the company in the future (customer satisfaction).	10
TOTAL SCORE OF ALL ITEMS		100

Please include this completed survey to Lisa Solina (lisa.solina@mlbfl.org or 321.608.7308 by April 7, 2017.

FORM N

Ver 04/12/2017-3

Form 3 Reference Survey

LEE COUNTY
SOUTHWEST FLORIDA

Lee County Procurement Management

REFERENCE SURVEY

Solicitation # CN180185DLK

Miscellaneous Utility Engineering

Section 1	Reference Respondent Information	Please return completed form to:
FROM:	Jason Vogel	**Bidder/Proposer:** JACOBS
COMPANY:	Ave Maria Utility Company	**Due Date:** March 22, 2018
PHONE #:	(239) 348-0248	**Total # Pages:** 1
FAX #:		**Phone #:** 239-431-9225 **Fax #:**
EMAIL:	jvogel@amuc.com	**Bidder/Proposer E-Mail:** jelarde@ch2m.com

Section 2	Enter Bidder/Proposer Information , if applicable Similar Performed Project (Bidder/Proposer to enter details of a project performed for above reference respondent)		
Proposer Name:	JACOBS		
Reference Project Name:	Project Address:	Project Cost:	
Ave Maria Expansion Planning	5076 Annunciation CIR, STE 102 Ave Maria, FL 34142	$44,000	
Summarize			
Scope: Evaluation and costing of the planned phasing and expansion requirements of the WTP, WWTP, and disposal facilities. Using the updated Barron Collier demand projections, JACOBS reviewed the facility phasing, define expansion requirements and made recommendations for facility expansion/upgrades based on the new build-out requirements.			

You as an individual or your company has been given as a reference on the project identified above. Please provide your responses in section 3 below.

Section 3	Indicate: "Yes" or "No"
1. Did this company have the proper resources and personnel by which to get the job done?	Yes
2. Were any problems encountered with the company's work performance?	No
3. Were any change orders or contract amendments issued, other than owner initiated?	No
4. Was the job completed on time?	Yes
5. Was the job completed within budget?	Yes
6. On a scale of one to ten, ten being best, how would you rate the overall work performance, considering professionalism; final product; personnel; resources. Rate from 1 to 10. (10 being highest)	10
7. If the opportunity were to present itself, would you rehire this company?	Yes

8. Please provide any additional comments pertinent to this company and the work performed for you:

I have worked with Jacobs (formerly CH2M) for years and they have become a reliable source of expertise and efficient project delivery. I highly recommend them for your projects.

Section 4

Jason Vogel, Senior Project Manager

Reference Name (Print

Please submit non-Lee County employees as references

03/22/18

Reference Signature

City of Pembroke Pines

Attachment L

REFERENCES FORM

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

Reference Contact Information:

Name of Firm, City, County or Agency: Bonita Springs Utilities

Address: 11860 East Terry St.

City/State/Zip: Bonita Springs, FL 34135

Contact Name: Kim Hoskins, PE Title: City Engineer

E-Mail Address: KHoskins@bsu.us

Telephone: (239) 390-4834 Fax: N/A

Project Information:

Name of Contractor Performing the work: CH2M HILL Engineers, Inc.

Name and location of the project: Bonita Springs Water and Wastewater Master Plan

Nature of the firm's responsibility on the project: CH2M developed a utility master plan covering source water, water treatment, water distribution, wastewater treatment and WW collection systems that provided BSU a roadmap for all improvements needed over the 20-year report duration at 5-year milestones with suggested yearly capital budgets for recommended improvements. The project included CUP analysis, injection well planning, and water treatment options costing and analysis. The plan provided guidance for capital projects based on water demand and provided sensitivity analysis for a number of "what if" scenarios based on available land and utility franchise ares.

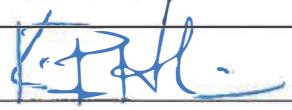
Project duration: 600 days Completion (Anticipated) Date: 2017

Size of project: 19 mgd Cost of project: $393,744

Work for which staff was responsible: Comprehensive evaluation of treatment and conveyance systems; demand forecasts, hydraulic modeling

Contract Type: Lump sum

The results/deliverables of the project: Master plan which presented recommended improvements to address current and future needs. Provided model training to BSU staff so that BSU can maintain and update the model as needed.

Name of Company/Individuals Requesting Reference Information:	CH2M HILL ENGINEERS INC.
Name of Evaluator Completing Reference:	Kim Hoskins, P.E.
Name of Evaluator's Company	Bonita Springs Utilities, Inc.
Email Address of Evaluator	KHoskins@bsu.us
Phone Number of Evaluator	239-390-4834
Signature of Evaluator	

City of Melbourne is implementing a process that collects reference information on firms and their key personnel to be used in the selection of firms to perform *professional consulting services for the Water Production Facility Evaluation and Master Plan.* The Name of the Company listed in the above has listed you as a client for which they have previously performed work. Please complete the survey. Please rate each criteria to the best of your knowledge on a scale of 1 to 10, with 10 representing that you were very satisifed (and would hire the firm/individual again) and 1 representing that you were very unsatisfied (and would never hire the firm/indivdiual again). If you do not have sufficient knowledge of past performance in a particular area, leave it blank and the item or form will be scored "0."

Project Description: BSU Master Plan Completion Date: May 2017

Project Budget: $393,744 Project Number of Days: 600

Change Orders - Dollars Added : $0 Change Orders - Days Added: 0

Item	Criteria	Score
1	Ability to manage the project costs (minimize change orders to scope).	10
2	Ability to maintain project schedule (complete on-time or early).	10
3	Quality of work.	10
4	Quality of consultative advice provided on the project.	10
5	Professionalism and ability to manage personnel.	10
6	Project administration (completed documents, final invoice, final product turnover; invoices; manuals or going forward documentation, etc.)	10
7	Ability to verbally communicate and document information clearly and succinctly.	10
8	Abiltity to manage risks and unexpected project circumstances.	10
9	Ability to follow contract documents, policies, procedures, rules, regulations, etc.	10
10	Overall comfort level with hiring the company in the future (customer satisfaction).	10
TOTAL SCORE OF ALL ITEMS		100

Please include this completed survey to Lisa Solina (lisa.solina@mlbfl.org or 321.608.7308 by April 7, 2017.

FORM N

Ver 04/12/2017-3

Form 3 Reference Survey

LEE COUNTY
SOUTHWEST FLORIDA

Lee County Procurement Management

REFERENCE SURVEY

Solicitation # CN180185DLK

Miscellaneous Utility Engineering

Section 1	Reference Respondent Information	Please return completed form to:
FROM:	Kim Hoskins, P.E.	**Bidder/Proposer:** Jacobs
COMPANY:	Bonita Springs Utilities	**Due Date:** March 26, 2018
PHONE #:	239.992.0711	**Total # Pages:** 1
FAX #:		**Phone #:** 239.596.1715 **Fax #:**
EMAIL:	KHoskins@bsu.us	**Bidder/Proposer E-Mail:** bill.beddow@ch2m.com

Section 2	Enter Bidder/Proposer Information , if applicable Similar Performed Project (Bidder/Proposer to enter details of a project performed for above reference respondent)		
Proposer Name:	Jacobs		
Reference Project Name:	Project Address:	Project Cost:	
BSU Water & Wastewater Master Plan	11900 E. Terry St, Bonita Springs, FL	$ 393,744	
Summarize Scope:	Provide master planning through 2030 of water and wastewater systems, review performance of existing systems, estimate demands, and estimate expansion and improvement costs. Project included **hydraulic modeling** on both water distribution and collection system		

You as an individual or your company has been given as a reference on the project identified above. Please provide your responses in section 3 below.

Section 3	Indicate: "Yes" or "No"
1. Did this company have the proper resources and personnel by which to get the job done?	Yes
2. Were any problems encountered with the company's work performance?	No
3. Were any change orders or contract amendments issued, other than owner initiated?	No
4. Was the job completed on time?	Yes
5. Was the job completed within budget?	Yes
6. On a scale of one to ten, ten being best, how would you rate the overall work performance, considering professionalism; final product; personnel; resources. Rate from 1 to 10. (10 being highest)	10
7. If the opportunity were to present itself, would you rehire this company?	Yes
8. Please provide any additional comments pertinent to this company and the work performed for you: Jacobs (fka CH2M) has continued to provide good consistent service. The Master Plan has been a very good predictor of future demands for growth and helped with forecasting Capital Improvement Budget through 2030. The steady state hydraulic model that was produced will be the basis for an Extended Period Simulation model to study water age/quality.	

Section 4

KIM HOSKINS

Reference Name (Print)

Reference Signature

Please submit non-Lee County employees as references

City of Pembroke Pines

Attachment L

REFERENCES FORM

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

Reference Contact Information:

Name of Firm, City, County or Agency: North Miami Beach Water

Address: 3150 SW 38th Avenue, Suite 700

City/State/Zip: Miami, FL 33146

Contact Name: Jeffrey Thompson Title: Utility Director

E-Mail Address: Jeffrey.Thompson@citynmb.com

Telephone: (305) 948-2983 Fax: N/A

Project Information:

Name of Contractor Performing the work: CH2M HILL Engineers, Inc.

Name and location of the project: Water and Wastewater Master Plan, North Miami Beach, FL

Nature of the firm's responsibility on the project: Developed a Utility Water and Wastewater Master Plan for the City of North Miami Beach that includes improvements to increase capacity and redundancy, enhance the operations and long-term viability of the water supply, treatment and distribution facilities. CH2M has begun implementing the projects identified in the Master Plan in a phased approach, addressing urgent R&R work, short-term capacity, and redundancy improvements focusing on membrane trains and long-term improvements to mainly the lime softening train.

Project duration: 2015-2017 Completion (Anticipated) Date: May 23, 2017

Size of project: 32 mgd Cost of project: $500,000

Work for which staff was responsible: Planning, consulting/assessment, engineering, O&M

Contract Type: Lump sum

The results/deliverables of the project: Master Plan, Condition Assessment and Strategic Site Layout Report

City of Pembroke Pines

Attachment L

REFERENCES FORM

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

Reference Contact Information:

Name of Firm, City, County or Agency: Seminole Tribe of Florida

Address: 6300 Stirling Road

City/State/Zip: Hollywood, Florida 33024

Contact Name: Emran Rahaman Title: Assistant Public Works Director

E-Mail Address: emranrahaman@semtribe.com

Telephone: (954) 894-1060 Fax: N/A

Project Information:

Name of Contractor Performing the work: CH2M HILL Engineers, Inc.

Name and location of the project: Water and Wastewater Master Plan, all locations, Florida

Nature of the firm's responsibility on the project: CH2M developed master plans for the water and wastewater treatment plants, solid waste management, and SCADA controls systems. These master plans provide information and analysis necessary for the Tribal Community's infrastructure long-term planning using a phased approach. This planning methodology ensures that operational and capital costs are commensurate with the forecasted Tribal growth and needs. The CIP and master plans will be regularly updated to reflect changes in service demands, infrastructure condition, emerging goals, and priorities.

Project duration: 2013-2015 Completion (Anticipated) Date: 2015

Size of project: 5 reservations - 4 WTPs & 4 WWTPs Cost of project: ~$1 million combined

Work for which staff was responsible: Master planning; implementation of water and wastewater CIP projects, staff augmentation, and processes and tools development

Contract Type: Yearly contract renewals

The results/deliverables of the project: Program validation and CIP development and master plans

City of Pembroke Pines

Attachment L

REFERENCES FORM

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

Reference Contact Information:

Name of Firm, City, County or Agency: Marco Island Utilities

Address: 807 Elkcam Circle East

City/State/Zip: Marco Island, FL 34145

Contact Name: Jeff Poteet Title: Utility Director

E-Mail Address: poteet@marcoislandutilities.com

Telephone: (239) 389-5181 Fax: N/A

Project Information:

Name of Contractor Performing the work: CH2M HILL Engineers, Inc.

Name and location of the project: Marco Island NWTP Improvements, Planning, Pilot Study, and SDC

Nature of the firm's responsibility on the project: The Marco Island Utilities (MIU) operates the North Water Treatment Plant (NWTP) that is a 6.67 mgd lime softening and microfiltration (MF) membrane filtration facility that that treats raw water from Marco Lakes surface water supply using lime softening and microfiltration. As the membrane modules aged and productivity decreased, MIU experienced operational challenges. CH2M was brought in the evaluate and plan system improvements to provide the needed capacity. We performed a facility evaluation, developed a plan for the improvements, provided options analysis and costing, pilot tested the options, and subsequently designed a new 6.7-mgd membrane filtration facility--the first Long-Term 2 Enhanced Surface Water Treatment Rule compliant membrane filtration system in Florida. The treatment process was selected to improve reliability and operability, and save more than $500,000 annually in chemical, power and consumables cost.

Project duration: 3394 days Completion (Anticipated) Date: Plant commissioning March 2013. Pilot study of new RO process completed Jan. 2018

Size of project: 6.7 mgd Cost of project: $1,608,423 (in scope work) $1,413,842 (additional scope)

Work for which staff was responsible: Planning, options analysis, design, and pilot study

Contract Type: Lump sum

The results/deliverables of the project: First Long-Term 2 Enhanced Surface Water Treatment Rule compliant membrane filtration system in Florida.

Name of Company/Individuals Requesting Reference Information:	CH2M HILL ENGINEERS INC.
Name of Evaluator Completing Reference:	Jeff Poteet
Name of Evaluator's Company	Marco Island Utilities
Email Address of Evaluator	jpoteet@marcoislandutilities.com
Phone Number of Evaluator	239-389-5181
Signature of Evaluator	

City of Melbourne is implementing a process that collects reference information on firms and their key personnel to be used in the selection of firms to perform *professional consulting services for the Water Production Facility Evaluation and Master Plan*. The Name of the Company listed in the above has listed you as a client for which they have previously performed work. Please complete the survey. Please rate each criteria to the best of your knowledge on a scale of 1 to 10, with 10 representing that you were very satisifed (and would hire the firm/individual again) and 1 representing that you were very unsatisfied (and would never hire the firm/indivdiual again). If you do not have sufficient knowledge of past performance in a particular area, leave it blank and the item or form will be scored "0."

Marco NWTP Improvements Planning,

Project Description: Study, Design and SDC Completion Date: March 2013

Project Budget: $1,608,423 Project Number of Days: 1,287

Change Orders - Dollars Added : $1,413,842 Change Orders - Days Added: 1,107

Item	Criteria	Score
1	Ability to manage the project costs (minimize change orders to scope).	10
2	Ability to maintain project schedule (complete on-time or early).	10
3	Quality of work.	10
4	Quality of consultative advice provided on the project.	10
5	Professionalism and ability to manage personnel.	10
6	Project administration (completed documents, final invoice, final product turnover; invoices; manuals or going forward documentation, etc.)	10
7	Ability to verbally communicate and document information clearly and succinctly.	10
8	Abiltity to manage risks and unexpected project circumstances.	10
9	Ability to follow contract documents, policies, procedures, rules, regulations, etc.	10
10	Overall comfort level with hiring the company in the future (customer satisfaction).	10
TOTAL SCORE OF ALL ITEMS		100

Please include this completed survey to Lisa Solina (lisa.solina@mlbfl.org or 321.608.7308 by April 7, 2017.

FORM N

Ver 04/12/2017-3

Form 3 Reference Survey

LEE COUNTY
SOUTHWEST FLORIDA

Lee County Procurement Management

REFERENCE SURVEY

Solicitation # CN180185DLK

Miscellaneous Utility Engineering

Section 1	Reference Respondent Information	Please return completed form to:
FROM:	Jeff Poteet	**Bidder/Proposer:** JACOBS
COMPANY:	City of Marco Island	**Due Date:** March 22, 2018
PHONE #:	(239) 389-5181	**Total # Pages:** 1
FAX #:		**Phone #:** 239-431-9225 **Fax #:**
EMAIL:	JPoteet@cityofmarcoisland.com	**Bidder/Proposer E-Mail:** jelarde@ch2m.com

Section 2	Enter Bidder/Proposer Information , if applicable Similar Performed Project (Bidder/Proposer to enter details of a project performed for above reference respondent)	
Proposer Name:	JACOBS	
Reference Project Name:	Project Address:	Project Cost:
Marco Island NWTP MF Expansion Engineering	807 E. Elkcam Circle Marco Island, FL 34145	
Summarize Scope:	Design and bidding engineering services to add the additional MF trains to complete the full capacity of the existing MF building	

You as an individual or your company has been given as a reference on the project identified above. Please provide your responses in section 3 below.

Section 3	Indicate: "Yes" or "No"
1. Did this company have the proper resources and personnel by which to get the job done?	Yes
2. Were any problems encountered with the company's work performance?	No
3. Were any change orders or contract amendments issued, other than owner initiated?	No
4. Was the job completed on time?	Yes
5. Was the job completed within budget?	Yes
6. On a scale of one to ten, ten being best, how would you rate the overall work performance, considering professionalism; final product; personnel; resources. Rate from 1 to 10. (10 being highest)	10
7. If the opportunity were to present itself, would you rehire this company?	Yes
8. Please provide any additional comments pertinent to this company and the work performed for you:	

Section 4

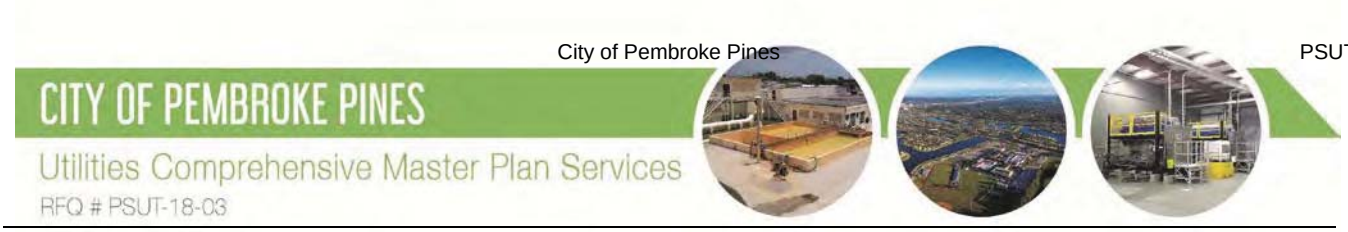
Jeff Poteet, General Manager Water & Sewer
Reference Name (Print

Please submit non-Lee County employees as references

Reference Signature

TAB 7

Other Completed Documents



Tab 7 - Other Completed Documents

The following documents are included in this section:

.

- Attachment A: Contact Information Form
- Attachment B: Vendor Information Form and a W-9
- Attachment C: Non-Collusive Affidavit
- Attachment D: Sworn Statement on Public Entity Crimes Form
- Attachment E: Local Vendor Preference Certification
- Attachment F: Veteran Owned Small Business Preference Certification
- Attachment G: Equal Benefits Certification Form
- Attachment H: Vendor Drug-Free Workplace Certification
- Attachment I: Proposer's Completed Qualification Statement
- Proof of Insurance
- Contract Comments

City of Pembroke Pines

Attachment A

CONTACT INFORMATION FORM

IN ACCORDANCE WITH **"RFQ #PSUT-18-03" dated** titled **"Utilities Complrehensive Master Plan Services"** attached hereto as a part hereof, the undersigned submits the following:

A) Contact Information

The Contact information form shall be electronically signed by one duly authorized to do so, and in case signed by a deputy or subordinate, the principal's properly written authority to such deputy or subordinate must accompany the proposal. This form must be completed and submitted through www.bidsync.com as part of the bidder's submittal. The vendor must provide their pricing through the designated lines items listed on the BidSync website.

COMPANY INFORMATION:

COMPANY: CH2M HILL Engineers, Inc.
STREET ADDRESS: 550W, Cypress Creek Road
CITY, STATE & ZIP CODE: Fort Lauderdale, FL 33309

PRIMARY CONTACT FOR THE PROJECT:

NAME: GJ Schers, PMP TITLE: Project Manager
E-MAIL: gj.schers@jacobs.com
TELEPHONE: 954.513.1540 FAX:

AUTHORIZED APPROVER:

NAME: Francois Didier Menard TITLE: Assistant Vice President
E-MAIL: didier.menard@jacobs.com
TELEPHONE: 407.650.2104 FAX:
SIGNATURE: Francois Didier Menard

(OFFICE USE ONLY) Vendor number: _____

Please entirely complete this vendor information form along with the IRS Form W-9, and email to accountspayable@ppines.com

City of Pembroke Pines
Finance Department
601 City Center Way
Pembroke Pines, FL 33025

Vendor Information Form

Operating Name (Payee)	CH2M HILL Engineers, Inc.		
Legal Name (as filed with IRS)	CH2M HILL Engineers, Inc.		
Remit-to Address (For Payments)	P.O. Box 200991, Dallas, TX 75320-1869		
Remit-to Contact Name:	Accounts Receivable	**Title:**	
Email Address:	DENAccountsReceivabl@ch2m.com		
Phone #:	(303) 771-0900	**Fax #**	
Order-from Address (For purchase orders)			
Order-from Contact Name:	Francois Didier Menard	**Title:**	Assistant Vice President
Email Address:	didier.menard@jacobs.com		
Phone #:	(407) 496-1938	**Fax #**	
Return-to Address (For product returns)			
	N/A		
Return-to Contact Name		**Title:**	
Email Address:			
Phone #:		**Fax #**	
Payment Terms:			

Type of Business (please check one and provide Federal Tax identification or social security Number)

- [X] **Corporation** — **Federal ID Number:** 32-0100027
- [ ] **Sole Proprietorship/Individual** — **Social Security No.:**
- [ ] **Partnership**
- [ ] **Health Care Service Provider**
- [ ] **LLC – C (C corporation) – S (S corporation) – P (partnership)**
- [ ] **Other (Specify):**

Name & Title of Applicant Francois Didier Menard, Assistant Vice President

Signature of Applicant _____ **Date** July 3, 2018

Form **W-9**
(Rev. November 2017)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

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

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

Print or type. See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
CH2M HILL Engineers, Inc.

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

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

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

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

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

☐ Other (see instructions) ►

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
9191 South Jamaica Street

Requester's name and address (optional)

6 City, state, and ZIP code
Englewood, CO, 80112

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

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

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

Social security number
			–		–				

or

Employer identification number
3	2	–	0	1	0	0	0	2	7

Part II Certification

Under penalties of perjury, I certify that:

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

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

Sign Here | **Signature of U.S. person** ► [signature] | **Date** ► July 3, 2018

General Instructions

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

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

Purpose of Form

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

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

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

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

City of Pembroke Pines

Attachment C

NON-COLLUSIVE AFFIDAVIT

BIDDER is the Representative,
(Owner, Partner, Officer, Representative or Agent)

BIDDER is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

Such Bid is genuine and is not a collusive or sham Bid;

Neither the said BIDDER nor any of its officers, partners, owners, agents, representative, employees or parties in interest, including this affidavit, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other BIDDER, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted; or to refrain from bidding in connection with such Contract; or have in any manner, directly or indirectly, sought by agreement or collusion, or communications, or conference with any BIDDER, firm, or person to fix the price or prices in the attached Bid or any other BIDDER, or to fix any overhead, profit, or cost element of the Bid Price or the Bid Price of any other BIDDER, or to secure through any collusion conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Contract;

The price of items quoted in the attached Bid are fair and proper and are not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the BIDDER or any other of its agents, representatives, owners, employees or parties in interest, including this affidavit.

Printed Name/Signature Francois Didier Menard

Title Assistant Vice President

Name of Company CH2M HILL Engineers, Inc.

City of Pembroke Pines

Attachment D

SWORN STATEMENT
ON PUBLIC ENTITY CRIMES
UNDER FLORIDA STATUTES CHAPTER 287.133(3)(a).

1. This sworn statement is submitted CH2M HILL Engineers, Inc. (name of entity submitting sworn statement) whose business address is 550W, Cypress Creek Rd, Fort Lauderdale, FL and (if applicable) its Federal Employer Identification Number (FEIN) is 32-0100027. (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: .)

2. My name is Francois Didier Menard and my
(Please print name of individual signing)

relationship to the entity named above is Assistant Vice President.

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

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

5. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:

    1. A predecessor or successor of a person convicted of a public entity crime: or

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

been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

6. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

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

☑ A) Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ B) The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND **(Please indicate which additional statement applies.)**

☐ B1) There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. **(Please attach a copy of the final order.)**

☐ B2) The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. **(Please attach a copy of the final order.)**

☐ B3) The person or affiliate has not been placed on the convicted vendor list. **(Please describe any action taken by or pending with the Department of General Services.)**

Francois Didier Menard	CH2M HILL Engineers, Inc.	July 7, 2018
Bidder's Name/Signature		Date

City of Pembroke Pines

Attachment E

LOCAL VENDOR PREFERENCE CERTIFICATION

SECTION 1 GENERAL TERM

LOCAL PREFERENCE

The evaluation of competitive bids is subject to section 35.36 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to local businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with either of the following objective criteria as of the bid or proposal submission date stated in the solicitation. A local business shall be defined as:

1. "Local Pembroke Pines Vendor" shall mean a business entity which has maintained a permanent place of business with full-time employees within the City limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the City of Pembroke Pines.

OR;

2. "Local Broward County Vendor" shall mean or business entity which has maintained a permanent place of business with full-time employees within the Broward County limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the Broward County or the city within Broward County where the business resides.

A preference of five percent (5%) of the total evaluation point, or five percent (5%) of the total price, shall be given to the **Local Pembroke Pines Vendor(s);** A preference of two and a half percent (2.5%) of the total evaluation point for local, or two and a half percent (2.5%) of the total price, shall be given to the **Local Broward County Vendor(s)**.

COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

SECTION 2 AFFIRMATION

LOCAL PREFERENCE CERTIFICATION:

☒ ***** Place a check mark here only if affirming bidder meets requirements above as a Local Pembroke Pines Vendor. In addition, the business must attach a current business tax receipt from the City of Pembroke Pines along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year. *** Operations Management International, Inc. and CH2M HILL Engineers, Inc. are both wholly owned legal entities of CH2M HILL Companies, Ltd.**

☐ Place a check mark here only if affirming bidder meets requirements above as a Local Broward County Vendor. In addition, the business must attach a current business tax receipt from the Broward County or the city within Broward County where the business resides along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.

☐ Place a check mark here only if affirming bidder does not meet the requirements above as a Local Vendor.

Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for Local Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for Local Vendor Preference based on their sub-contractors' qualifications.

COMPANY NAME: CH2M HILL Engineers, Inc.

PRINTED NAME / AUTHORIZED SIGNATURE: Francois Didier Menard

CH2M HILL COMPANIES, LTD.
ATTN: TAX DEPT.
9191 S. JAMAICA ST
ENGLEWOOD CO 80112

CITY OF PEMBROKE PINES
601 CITY CENTER WAY, LBTR-4TH FLOOR
PEMBROKE PINES, FL 33025

LOCAL BUSINESS TAX RECEIPT

ACCOUNT-NO: 20140846/01
RECEIPT-NO: 173337

RECEIPT-YEAR: OCTOBER 1, 2017 thru SEPTEMBER 30, 2018

NOTICE
In the event the business to which this receipt was issued changes hands, the receipt will become null and void. An application for a new receipt must be made.

BUS-NAME : OPERATIONS MANAGEMENT INTERNATIONAL, INC.
BUS-ADDR : 13975 PEMBROKE RD
PEMBROKE PINES FL 33027
BUS-DESCR : CITY UTILITIES CONTRACT OPERATIONS

RECEIPT-TYPE: REGULAR LICENSE

BUSINESS-CLASSIFICATION		INV/UNITS	EFFECTIVE	PERMIT-NUMBER/COMMENTS	RCT-TYPE
ADMSER	ADMINISTRATIVE SERVICES	0	10/01/2017		P/Pines
SIGN	BUSINESS SIGN	1	10/01/2017		P/Pines

CH2M HILL COMPANIES, LTD.
ATTN: TAX DEPT.
9191 S. JAMAICA ST
ENGLEWOOD CO 80112

CITY OF PEMBROKE PINES
10100 PINES BOULEVARD, PEMBROKE PINES, FL 33026

LOCAL BUSINESS TAX RECEIPT

ACCOUNT-NO: 20140846/01
RECEIPT-NO: 164076

RECEIPT-YEAR: OCTOBER 1, 2016 thru SEPTEMBER 30, 2017

BUS-NAME : OPERATIONS MANAGEMENT INTERNATIONAL, INC.
BUS-ADDR : 13975 PEMBROKE RD
PEMBROKE PINES FL 33027
BUS-DESCR : CITY UTILITIES CONTRACT OPERATIONS

NOTICE
In the event the business to which this receipt was issued changes hands, the receipt will become null and void. An application for a new receipt must be made.

RECEIPT-TYPE: REGULAR LICENSE

BUSINESS-CLASSIFICATION		INV/UNITS	EFFECTIVE	PERMIT-NUMBER/COMMENTS	RCT-TYPE
ADMSER	ADMINISTRATIVE SERVICES	0	10/01/2016		P/Pines
SIGN	BUSINESS SIGN	1	10/01/2016		P/Pines

City of Pembroke Pines

Attachment E

LOCAL VENDOR PREFERENCE CERTIFICATION

SECTION 1 GENERAL TERM

LOCAL PREFERENCE

The evaluation of competitive bids is subject to section 35.36 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to local businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with either of the following objective criteria as of the bid or proposal submission date stated in the solicitation. A local business shall be defined as:

1. "Local Pembroke Pines Vendor" shall mean a business entity which has maintained a permanent place of business with full-time employees within the City limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the City of Pembroke Pines.

OR;

2. "Local Broward County Vendor" shall mean or business entity which has maintained a permanent place of business with full-time employees within the Broward County limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the Broward County or the city within Broward County where the business resides.

A preference of five percent (5%) of the total evaluation point, or five percent (5%) of the total price, shall be given to the **Local Pembroke Pines Vendor(s);** A preference of two and a half percent (2.5%) of the total evaluation point for local, or two and a half percent (2.5%) of the total price, shall be given to the **Local Broward County Vendor(s)**.

COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

SECTION 2 AFFIRMATION

LOCAL PREFERENCE CERTIFICATION:

☐ Place a check mark here only if affirming bidder meets requirements above as a Local Pembroke Pines Vendor.
In addition, the business must attach a current business tax receipt from the City of Pembroke Pines along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.

☑ Place a check mark here only if affirming bidder meets requirements above as a Local Broward County Vendor.
In addition, the business must attach a current business tax receipt from the Broward County or the city within Broward County where the business resides along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.

☐ Place a check mark here only if affirming bidder does not meet the requirements above as a Local Vendor.

Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for Local Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for Local Vendor Preference based on their sub-contractors' qualifications.

COMPANY NAME: CH2M HILL Engineers, Inc.

PRINTED NAME / AUTHORIZED SIGNATURE: Francois Didier Menard

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

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

VALID OCTOBER 1, 2017 THROUGH SEPTEMBER 30, 2018

DBA:
Business Name: CH2M HILL ENGINEERS,INC.

Receipt #: 315-240823
Business Type: ENGINEER (ENGINEERING SERVICES)

Owner Name: CH2M HILL ENGINEERS,INC.
Business Location: 550 W CYPRESS CREEK ROAD STE 4
FT LAUDERDALE
Business Phone: 720-286-5416

Business Opened: 04/26/2011
State/County/Cert/Reg: CA.LIC. #25861
Exemption Code:

Rooms	Seats	Employees	Machines	Professionals
		4		

For Vending Business Only
Number of Machines: Vending Type:

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

THIS RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS

THIS BECOMES A TAX RECEIPT

WHEN VALIDATED

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

Mailing Address:

CH2M HILL ENGINEERS,INC.
ATTN: TAX DEPARTMENT
9191 S. JAMAICA ST
ENGLEWOOD, CO 80112

Receipt #1CP-16-00021355
Paid 08/28/2017 30.00

2017 - 2018

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

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

VALID OCTOBER 1, 2016 THROUGH SEPTEMBER 30, 2017

DBA:
Business Name: CH2M HILL ENGINEERS, INC.

Receipt #: 315-240823
Business Type: ENGINEER (ENGINEERING SERVICES)

Owner Name: CH2M HILL ENGINEERS, INC.
Business Location: 550 W CYPRESS CREEK ROAD STE 4 FT LAUDERDALE
Business Phone: 720-286-5416

Business Opened: 04/26/2011
State/County/Cert/Reg: CA.LIC. #25861
Exemption Code:

Rooms	Seats	Employees	Machines	Professionals
		4		

For Vending Business Only

Number of Machines: **Vending Type:**

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

THIS RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS

THIS BECOMES A TAX RECEIPT

WHEN VALIDATED

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

Mailing Address:

CH2M HILL ENGINEERS, INC.
ATTN: TAX DEPARTMENT
9191 S. JAMAICA ST
ENGLEWOOD, CO 80112

Receipt #1CP-15-00021388
Paid 08/29/2016 30.00

2016 - 2017

City of Pembroke Pines

Attachment F

VETERAN OWNED SMALL BUSINESS (VOSB) PREFERENCE CERTIFICATION

SECTION 1 GENERAL TERM

VETERAN OWNED SMALL BUSINESS (VOSB) PREFEREENCE

The evaluation of competitive bids is subject to section 35.37 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to veteran owned small businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with the following objective criteria as of the bid or proposal submission date stated in the solicitation. A veteran owned small business shall be defined as:

1. "Veteran Owned Small Business" shall mean a business entity which has received a "Determination Letter" from the United States Department of Veteran Affairs Center for Verification and Evaluation notifying the business that they have been approved as a Veteran Owned Small Business (VOSB).

A preference of two and a half percent (2.5%) of the total evaluation point, or two and a half percent (2.5%) of the total price, shall be given to the **Veteran Owned Small Business (VOSB)**. This shall mean that if a **VOSB** submits a bid/quote that is within 2.5% of the lowest price submitted by any vendor, the **VOSB** shall have an option to submit another bid which is at least 1% lower than the lowest responsive bid/quote. If the **VOSB** submits a bid which is at least 1% lower than that lowest responsive bid/quote, then the award will go to the **VOSB**. If not, the award will be made to the vendor that submits the lowest responsive bid/quote. If the lowest responsive and responsible bidder IS a **"Local Pembroke Pines Vendor" (LPPV)** or a **"Local Broward County Vendor" (LBCV)** as established in Section 35.36 of the City's Code of Ordinances, entitled "Local Vendor Preference", then the award will be made to that vendor and no other bidders will be given an opportunity to submit additional bids as described herein.

If there is a **LPPV**, a **LBCV**, and a **VOSB** participating in the same bid solicitation and all three vendors qualify to submit a second bid, the **LPPV** will be given first option. If the **LPPV** cannot beat the lowest bid received by at least 1%, an opportunity will be given to the **LBCV**. If the **LBCV** cannot beat the lowest bid by at least 1%, an opportunity will be given to the **VOSB**. If the **VOSB** cannot beat the lowest bid by at least 1%, then the bid will be awarded to the lowest bidder.

If multiple **VOSBs** submit bids/quotes which are within 2.5% of the lowest bid/quote and there are no **LPPV** or **LBCV** as described in Section 35.36 of the City's Code of Ordinance, entitled "Local Vendor Preference", then all **VOSBs** will be asked to submit a **Best and Final Offer (BAFO)**. The award will be made to the **VOSB** submitting the lowest **BAFO** providing that that **BAFO** is at least 1% lower than the lowest bid/quote received in the original solicitation. If no **VOSB** can beat the lowest bid/quote by at least 1%, then the award will be made to the lowest responsive bidder.

COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

SECTION 2 AFFIRMATION

VETERAN OWNED SMALL BUSINESS (VOSB) PREFEREENCE CERTIFICATION:

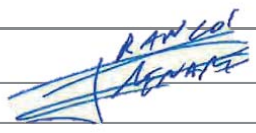
☐ Place a check mark here only if affirming bidder meets requirements above as a Veteran Owned Small Business. In addition, the bidder must attach the "Determination Letter" from the U.S. Dept. of Veteran Affairs Center.

☑ Place a check mark here only if affirming bidder does not meet the requirements above as a VOSB.

Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for VOSB Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for VOSB Preference based on their sub-contractors' qualifications.

COMPANY NAME: CH2M HILL Engineers, Inc.

PRINTED NAME / AUTHORIZED SIGNATURE: Francois Didier Menard



City of Pembroke Pines

Attachment G

EQUAL BENEFITS CERTIFICATION FORM
FOR DOMESTIC PARTNERS AND ALL MARRIED COUPLES

Except where federal or state law mandates to the contrary, a Contractor awarded a Contract pursuant to a competitive solicitation shall provide benefits to Domestic Partners and spouses of its employees, irrespective of gender, on the same basis as it provides benefits to employees' spouses in traditional marriages.

The Contractor shall provide the City and/or the City Manager or his/her designee, access to its records for the purpose of audits and/or investigations to ascertain compliance with the provisions of this section, and upon request shall provide evidence that the Contractor is in compliance with the provisions of this section upon each new bid, contract renewal, or when the City Manager has received a complaint or has reason to believe the Contractor may not be in compliance with the provisions of this section. Records shall include but not be limited to providing the City and/or the City Manager or his/her designee with certified copies of the Contractor's records pertaining to its benefits policies and its employment policies and practices.

The Contractor must conspicuously make available to all employees and applicants for employment the following statement:

> **"During the performance of a contract with the City of Pembroke Pines, Florida, the Contractor will provide Equal Benefits to its employees with spouses, as defined by Section 35.39 of the City's Code of Ordinances, and its employees with Domestic Partners and all Married Couples".**

The posted statement must also include a City contact telephone number and email address which will be provided to each contractor when a covered contract is executed.

SECTION 1 DEFINITIONS

1. **Benefits** means the following plan, program or policy provided or offered by a contractor to its employees as part of the employer's total compensation package which may include but is not limited to sick leave, bereavement leave, family medical leave, and health benefits.

2. **Cash Equivalent** mean the amount of money paid to an employee with a domestic partner or spouse in lieu of providing benefits to the employee's domestic partner or spouse. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee for his or her spouse from a traditional marriage.

3. **Covered Contract** means a contract between the City and a contractor awarded subsequent to the date when this section becomes effective valued at over $25,000 or the threshold amount required for competitive bids as required in section 35.18(A) of the Procurement Code.

4. **Domestic Partner** shall mean any two (2) adults of the same or different sex who have registered as domestic partners with a governmental body pursuant to state or local law authorizing such registration, or with an internal registry maintained by the employer of at least one of the domestic partners. A contractor may institute an internal registry to allow for the provision of equal benefits to employees with domestic partners who do not register their partnerships pursuant to a governmental body authorizing such registration, or who are

located in a jurisdiction where no such governmental domestic partnership registry exists. A contractor that institutes such registry shall not impose criteria for registration that are more stringent than those required for domestic partnership registration by the City of Pembroke Pines.

5. **Equal benefits** means the equality of benefits between employees with spouses and/or dependents of spouses and employees with domestic partners and/or dependents of domestic partners, and/or between spouses of employees and/or dependents of spouses and domestic partners of employees and/or dependents of domestic partners.

6. **Spouse** means one member of a married pair legally married under the laws of any state within the United States of America or any other jurisdiction under which such marriage is legally recognized, irrespective of gender.

7. **Traditional marriage** means a marriage between one man and one woman.

SECTION 2 CERTIFICATION OF CONTRACTOR

The firm providing a response, by virtue of the signature below, certifies that it is aware of the requirements of Section 35.39 "City Contractors providing Equal Benefits for Domestic Partners and all Married Couples" of the City's Code of Ordinances, and certifies the following (**Check only one box below)**:

☑ **A.** Contractor currently complies with the requirements of this section; or

☐ **B.** Contractor will comply with the conditions of this section at the time of contract award; or

☐ **C.** Contractor will not comply with the conditions of this section at the time of contract award: or

☐ **D.** Contractor does not comply with the conditions of this section because of the following allowable exemption **(Check only one box below):**

☐ **1.** The Contractor does not provide benefits to employees' spouses in traditional marriages;

☐ **2.** The Contractor provides an employee the cash equivalent of benefits because the Contractor is unable to provide benefits to employees' Domestic Partners or spouses despite making reasonable efforts to provide them. To meet this exception, the Contractor shall provide a notarized affidavit that it has made reasonable efforts to provide such benefits. The affidavit shall state the efforts taken to provide such benefits and the amount of the cash equivalent. Cash equivalent means the amount of money paid to an employee with a Domestic Partner or spouse rather than providing benefits to the employee's Domestic Partner or spouse. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee's spouse;

☐ **3.** The Contractor is a religious organization, association, society, or any non-profit charitable or educational institution or organization operated supervised or controlled by or in conjunction with a religious organization, association, or society;

☐ **4.** The Contractor is a governmental agency;

The certification shall be signed by an authorized officer of the Contractor. Failure to provide such certification (by checking the appropriate boxes above along with completing the information below) shall result in a Contractor being deemed non-responsive.

COMPANY NAME: CH2M HILL Engineers, Inc.

AUTHORIZED OFFICER NAME / SIGNATURE: Francois Didier Menard

City of Pembroke Pines

Attachment H

VENDOR DRUG-FREE WORKPLACE CERTIFICATION FORM

SECTION 1 GENERAL TERM

Preference may be given to vendors submitting a certification with their bid/proposal certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. This requirement affects all public entities of the State and becomes effective January 1, 1991. The special condition is as follows:

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

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after each conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

SECTION 2 AFFIRMATION

☒ Place a check mark here only if affirming bidder **complies fully** with the above requirements for a Drug-Free Workplace.

☐ Place a check mark here only if affirming bidder **does not** meet the requirements for a Drug-Free Workplace.

Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for Drug-Free Workplace Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for Drug-Free Workplace Preference based on their sub-contractors' qualifications.

Authorized Signature	Francois Didier Menard Authorized Signer Name	CH2M HILL Engineers, Inc. Company Name

City of Pembroke Pines

Attachment I

PROPOSER'S QUALIFICATIONS STATEMENT

PROPOSER shall furnish the following information. Failure to comply with this requirement will render Bid non-responsive and shall cause its rejection. Additional sheets shall be attached as required.

PROPOSER'S Name and Principal Address:

CH2M HILL Engineers, Inc.

550W, Cypress Creek Road

Fort Lauderdale, FL 33309

Contact Person's Name and Title: GJ Schers, Project Manager

Contact Person's E-mail Address: GJ.Schers@jacobs.com

PROPOSER'S Telephone and Fax Number: 954.513.1540

PROPOSER'S License Number: FL PE 25861

(Please attach certificate of status, competency, and/or state registration.)

PROPOSER'S Federal Identification Number: 32-0100027

Number of years your organization has been in business 72 years

State the number of years your firm has been in business under your present business name 14 years

State the number of years your firm has been in business in the work specific to this solicitation: 72 years

Names and titles of all officers, partners or individuals doing business under trade name:

Jan Walstrom, Board of Directors & President
Gregory T. McIntyre, Board of Directors
Julie Arnold, Assistant Secretary
Michael Carlin, Treasurer
Barbara Crockett, Assistant Vice President
James Doyna, Vice President
Charles R. Funk, Assistant Vice President
Sirpa H. Hall, Assistant Vice President
James Hatfield, Assistant Vice President
Mike Hsu, Director, Tax North America
Justin Johnson, Secretary
Davinia Lyon, Sr Director Tax
Robert Lee McFarland, Assistant Vice President
Didier Menard, Assistant Vice President
William M. Powell, Vice President
Cheryl Jett Rimas, Assistant Secretary
Keven Winters, Director, Tax Accounting

The business is a: Sole Proprietorship ☐ Partnership ☐ Corporation ☒

IF USING A FICTITIOUS NAME, SUBMIT EVIDENCE OF COMPLIANCE WITH FLORIDA FICTITIOUS NAME STATUTE. (ATTACH IN PROPOSER EXHIBIT SECTION)

City of Pembroke Pines

Attachment I

Under what former name has your business operated? Include a description of the business. Failure to include such information shall be deemed to be intentional misrepresentation by the City and shall render the proposer RFP submittals non-responsive.

1946-1971 Holly Cornell, James Howland, T. Burke Hayes, and Fred Merryfield (CH2M)

In 1971, CH2M merged with Clair A. Hill & Associates of Redding, California, to become CH2M HILL and has operated under that name since that time.

At what address was that business located?

CH2M HILL was founded in Corvallis, OR in 1946. Corporate headquarters is located at

9191 South Jamaica Street, Englewood, CO 80112

Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract:

Aon Risk Services. Agent's Name: Greg Kessler

1900 16th Street, Suite 1000, Denver, CO 80202.
Ph. +1 (303) 782-3355, email: greg.kessler@aon.com

Have you ever failed to complete work awarded to you. If so, when, where and why?

Based on information and belief, the Submitting Firm, CH2M Hill Engineers, Inc., has no record of any contracts terminated for cause in the last five (5) years. Although we have no records of any contracts terminated for cause, over the years we have been involved in projects that were terminated for the convenience of our clients. We have not maintained documents reflecting the details of such terminations. Additionally, the Submitting Firm is a wholly owned subsidiary of Jacobs Engineering Group Inc. (Jacobs). Jacobs and its subsidiaries form an organization that is comprised of over 250 operating companies and affiliates, having a total current employment complement of approximately 74,000 persons and revenues of approximately $15 billion. From time to time and in the ordinary course of its business, the Company is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is the Company's practice to vigorously defend itself in such actions, many of which are generally subject to insurance and none of which are expected to have a materially adverse effect on the Company's consolidated financial statements.

Have you personally inspected the proposed WORK and do you have a complete plan for its performance?

Yes

Will you subcontract any part of this WORK? If so, give details including a list of each sub-contractor(s) that will perform work in excess of ten percent (10%) of the contract amount and the work that will be performed by each subcontractor(s).

No Subcontractor will perform work in excess of ten percent of the contract amount.

The foregoing list of subcontractor(s) may not be amended after award of the contract without the prior written approval of the Contract Administrator, whose approval shall not be reasonably withheld.

List and describe all bankruptcy petitions (voluntary or involuntary) which have been filed by or against the Proposer, its parent or subsidiaries or predecessor organizations during the past five (5) years. Include in the description the disposition of each such petition.

Neither CH2M HILL Companies Ltd., parent company of CH2M HILL Engineers, Inc., nor any of its subsidiaries, have filed for bankruptcy in its 72 year history.

List and describe all successful Bond claims made to your surety (ies) during the last five (5) years. The list and descriptions should include claims against the bond of the Proposer and its predecessor organization(s).

The Submitting Firm, CH2M HILL Engineers, Inc., is an affiliate or a subsidiary of Jacobs Engineering Group Inc. Jacobs Engineering Group Inc. and its related companies form an organization that is comprised of over 250 operating companies and affiliates, having a total current employment complement of approximately 74,000 persons and revenues of approximately $15 billion. From time to time in the ordinary course of its business, the Company is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is the Company's practice to vigorously defend itself in such actions, many of which are generally subject to insurance and none of which are expected to have a materially adverse effect on the Company's consolidated financial statements.

List all claims, arbitrations, administrative hearings and lawsuits brought by or against the Proposer or its predecessor organizations(s) during the last (10) years. The list shall include all case names; case, arbitration or hearing identification numbers; the name of the project over which the dispute arose; and a description of the subject matter of the dispute.

The Submitting Firm, CH2M HILL Engineers, Inc., is an affiliate or a subsidiary of Jacobs Engineering Group Inc. Jacobs Engineering Group Inc. and its related companies form an organization that is comprised of over 250 operating companies and affiliates, having a total current employment complement of approximately 74,000 persons and revenues of approximately $15 billion. From time to time in the ordinary course of its business, the Company is subject to various claims, disputes, terminations, arbitrations, and other legal proceedings. It is the Company's practice to vigorously defend itself in such actions, many of which are generally subject to insurance and none of which are expected to have a materially adverse effect on the Company's consolidated financial statements.

City of Pembroke Pines

Attachment I

List and describe all criminal proceedings or hearings concerning business related offenses in which the Proposer, its principals or officers or predecessor organization(s) were defendants.

None

Has the Proposer, its principals, officers or predecessor organization(s) been CONVICTED OF A Public Entity Crime, debarred or suspended from bidding by any government entity? If so, provide details.

None

Are you an ☒ Original provider ☐ sales representative ☐ distributor, ☐ broker, ☐ manufacturer ☐ other, of the commodities/services proposed upon? If other than the original provider, explain below.

Have you ever been debarred or suspended from doing business with any governmental agency? If yes, please explain:

No

City of Pembroke Pines

Attachment I

Describe the firm's local experience/nature of service with contracts of similar size and complexity, it the previous three (3) years:

CH2M has included several representative projects completed within the last 3 years in our proposal. These projects detail our local, regional, and statewide experience on projects of similar size and complexity to the City's Scope of Services as outlined in the Solicitation.

The PROPOSER acknowledges and understands that the information contained in response to this Qualification Statement shall be relied upon by CITY in awarding the contract and such information is warranted by PROPOSER to be true. The discovery of any omission or misstatement that materially affects the PROPOSER'S qualifications to perform under the contract shall cause the CITY to reject the Bid, and if after the award, to cancel and terminate the award and/or contract.

CH2M HILL Engineers, Inc

(Company Name)

Francois Didier Menard

(Printed Name/Signature)

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 06/20/2018

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

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

PRODUCER LIC #0437153 1-212-948-1306 Marsh Risk & Insurance Services CIRTS_Support@jacobs.com 633 W. Fifth Street Los Angeles, CA 90071	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): 1-212-948-1306 E-MAIL ADDRESS:
INSURED CH2M HILL ENGINEERS, INC. 9191 South Jamaica Street Englewood, CO 80112-5946	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : ACE AMER INS CO — 22667 INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 53134800 **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			HDO G71096750	07/01/18	07/01/19	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
	X CONTRACTUAL LIABILITY						MED EXP (Any one person)	$ 5,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY	$ 1,000,000
	POLICY PRO-JECT LOC						GENERAL AGGREGATE	$ 2,000,000
	OTHER:						PRODUCTS - COMP/OP AGG	$ 2,000,000
								$
A	AUTOMOBILE LIABILITY			ISA H25158684	07/01/18	07/01/19	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			WLR C6479033A (AOS)	07/01/18	07/01/19	X PER STATUTE OTH-ER	
A	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: N	N/A		WCU C64789533 (LA, OH, TX)	07/01/18	07/01/19	E.L. EACH ACCIDENT	$ 500,000
A	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			SCF C64789570 (WI)	07/01/18	07/01/19	E.L. DISEASE - EA EMPLOYEE	$ 500,000
							E.L. DISEASE - POLICY LIMIT	$ 500,000
A	PROFESSIONAL LIABILITY			EON G21655065 009	07/01/18	07/01/19	PER CLAIM/PER AGG	1,000,000
A	CONTRACTORS POLLUTION			CPM G21743793 016	07/01/18	07/01/19	PER CLAIM/ PER AGG	1,000,000
	LIABILITY. "CLAIMS MADE"						DEFENSE INCLUDED	

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

RE: Utilities Comprehensive Master Plan Services. CONTRACT END DATE: 6/20/2020. PROPOSAL NUMBER: PSUT-18-03. SECTOR: Public. *$2,250,000 SIR FOR STATES OF: LA, OH, TX. The City of Pembroke Pines is added as an additional insured for general liability & pollution liability as respects the negligence of the insured in the performance of insured's services to cert holder under contract for captioned work. Coverage is primary and certificate holder's insurance is excess and non-contributory. Waiver of subrogation is hereby granted in favor of cert holder for GL, AL and WC. General Liability coverage includes the severability of interests/Cross Suits Liability provision in favor of the holder. Coverage includes U.S. Longshore and Harbor Workers Compensation Act Coverage and Outer Continental Shelf Lands

CERTIFICATE HOLDER	CANCELLATION
City of Pembroke Pines, FL 8300 South Palm Drive Pembroke Pines, FL 33025 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 06/20/2018

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

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must 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	CONTACT NAME:	
1-415-486-7000 Aon Risk Insurance Services West, Inc. CIRTS_Support@jacobs.com 425 Market Street, 28th Floor San Francisco, CA 94105	PHONE (A/C, No, Ext): 1-415-486-7000	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : ZURICH AMER INS CO	16535
INSURED CH2M HILL ENGINEERS, INC. 9191 South Jamaica Street Englewood, CO 80112-5946	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** 53134870 **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	☐ OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ☐ NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ N / A						E.L. EACH ACCIDENT	$
	(Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$
A	Crime Coverage			FID 9028144 14	02/01/18	02/01/19	Per Loss	1,000,000

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

RE: Utilities Comprehensive Master Plan Services. CONTRACT END DATE: 6/20/2020. PROPOSAL NUMBER: PSUT-18-03. SECTOR: Public. *THIS IS A SAMPLE CERTIFICATE ONLY*. THE ACTUAL CERTIFICATE FOR THE PROPOSED PROJECT WILL COMPLY WITH THE TERMS AND CONDITIONS NEGOTIATED IN THE FINAL CONTRACT, CONSISTENT WITH POLICY TERMS AND CONDITIONS.

CERTIFICATE HOLDER

City of Pembroke Pines, FL

8300 South Palm Drive

Pembroke Pines, FL 33025 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 Insurance Services West, Inc.

SUPPLEMENT TO CERTIFICATE OF INSURANCE

DATE 06/20/2018

NAME OF INSURED: CH2M HILL ENGINEERS, INC.

Act Coverage. *THIS IS A SAMPLE CERTIFICATE ONLY*. THE ACTUAL CERTIFICATE FOR THE PROPOSED PROJECT WILL COMPLY WITH THE TERMS AND CONDITIONS NEGOTIATED IN THE FINAL CONTRACT, CONSISTENT WITH POLICY TERMS AND CONDITIONS.

SUPP (10/00)

Jacobs Engineering Group Inc.
C/O Global Risk Management
600 Wilshire Blvd., Suite 1000
Los Angeles, CA 90017

June 20, 2018

City of Pembroke Pines, FL
8300 South Palm Drive
Pembroke Pines, FL 33025

Re: **CH2M HILL ENGINEERS, INC. – Privacy and Network Security**

To Whom It May Concern:

This is to advise you that with regard to insurance for Privacy and Network Security ("Cyber-risk"), CH2M HILL ENGINEERS, INC. a wholly owned subsidiary of Jacobs Engineering Group Inc., self insures for this type of liability as would otherwise be provided by such insurance.

In lieu of insurance, CH2M HILL ENGINEERS, INC. will be financially responsible for liability as a result of Cyber-risk claims. In no event will such financial responsibility exceed the terms or conditions of the contractual liability.

Please note that Jacobs' net earnings totaled $210 million on revenues of $11.6 billion for its fiscal year ended September 30, 2016.

Should you have any questions, please contact me at (626) 578-6886 or ruth.lindstrom@jacobs.com.

Sincerely,

Ruth Lindstrom

Ruth Lindstrom, ARM
Senior Risk Manager
Global Risk Management

CONTRACT COMMENTS

We have reviewed your Request for Proposals and the proposed Contractual Service Agreement and find it to be generally acceptable as the basis for the negotiation of a mutually-agreed-to final contract between the parties. However, we have the following comments concerning the terms and conditions:

1. **Indemnity & Liability.**

   We ask that Engineer's indemnification not include the obligation to "defend" the Owner and that it be on a comparative negligence basis and be limited to injuries or damages resulting from Engineer's negligence. We further ask that Owner be responsible for injuries which are due to its own negligence, for loss of or damage to its own property and employees, for changes which it directs against Engineer's recommendations or which have the effect of reducing safety related features, and for injury or damage resulting from the release of or exposure to hazardous/toxic substances. Lastly, we ask that a waiver of consequential and indirect damages be included in the contract.

2. **Standard of Care and Warranty.**

   Engineer shall perform the services to the degree of care and skill of like professionals customarily found in the general area of the project. Engineer shall provide a twelve (12) month warranty that its work will conform with generally accepted industry standards. Implied warranties of merchantability and fitness for a particular purpose are disclaimed. We request that Engineer's sole liability with respect to any deficient services be the reperformance of such services at no cost to Owner for a twelve month time period after the performance of such services and that Engineer have no liability for the repair or replacement of equipment or facilities.

3. **Termination.**

   In the event of termination for Convenience, we ask that Engineer be compensated its costs to the date of termination plus reasonable demobilization and subcontract/purchase order termination expenses, if any. In the event of termination for cause, we ask that Engineer be paid for all costs incurred to the date of termination.

4. **Delay and Force Majeure.**

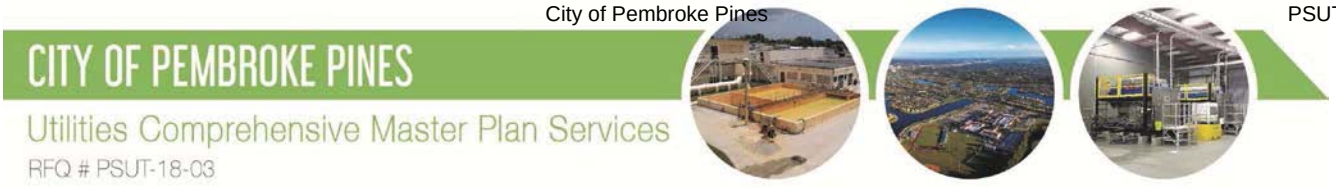
   Engineer should not be responsible for any delay in performance of work caused by any unforeseen circumstance or for circumstance beyond the reasonable control of Engineer for such delay not caused by the acts or omissions of Engineer including those of the Owner. Engineer shall be entitled to an extension of time equal to the extent of such delay regardless of the period of delay. Engineer should be entitled to an equitable adjustment in compensation as well for delays in excess of 90 days.

5. **Bonds and Liquidated Damages.**

   Engineer requests the removal of the possible requirement for payment and performance bonds as they typically do not apply to professional engineering services. Also, Engineer considers it relationship with the Owner to be that of a partner for which arbitrary dates and deadlines only interfere and create unnecessary conflict. Therefore, all liquidated damages should be removed from the Contract in all respects.

TAB 8

Additional Information



Tab 8 – Additional Information

CH2M is confident that we have included a wealth of information throughout this proposal in support of our extensive Master Planning qualifications and record of performance. If there are any specific areas of interest that are related to this project that the City would like to discuss, CH2M will be happy to provide information on additional services.

Supplier: **CH2M**

City of Pembroke Pines

Attachment A

CONTACT INFORMATION FORM

IN ACCORDANCE WITH **"RFQ #PSUT-18-03" dated** titled **"Utilities Complrehensive Master Plan Services"** attached hereto as a part hereof, the undersigned submits the following:

A) Contact Information

The Contact information form shall be electronically signed by one duly authorized to do so, and in case signed by a deputy or subordinate, the principal's properly written authority to such deputy or subordinate must accompany the proposal. This form must be completed and submitted through www.bidsync.com as part of the bidder's submittal. The vendor must provide their pricing through the designated lines items listed on the BidSync website.

COMPANY INFORMATION:

COMPANY: **CH2M HILL Engineers, Inc.**
STREET ADDRESS: **550W, Cypress Creek Road**
CITY, STATE & ZIP CODE: **Fort Lauderdale, FL 33309**

PRIMARY CONTACT FOR THE PROJECT:

NAME: **GJ Schers, PMP** TITLE: **Project Manager**
E-MAIL: **gj.schers@ch2m.com**
TELEPHONE: **954.513.1540** FAX:

AUTHORIZED APPROVER:

NAME: **Francois Didier Menard** TITLE: **Vice President**
E-MAIL: **didier.menard@ch2M.com**
TELEPHONE: **407.650.2104** FAX:
SIGNATURE: **Francois Didier Menard**

Supplier: **CH2M**

City of Pembroke Pines

Attachment C

NON-COLLUSIVE AFFIDAVIT

BIDDER is the **Representative**,
(Owner, Partner, Officer, Representative or Agent)

BIDDER is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

Such Bid is genuine and is not a collusive or sham Bid;

Neither the said BIDDER nor any of its officers, partners, owners, agents, representative, employees or parties in interest, including this affidavit, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other BIDDER, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted; or to refrain from bidding in connection with such Contract; or have in any manner, directly or indirectly, sought by agreement or collusion, or communications, or conference with any BIDDER, firm, or person to fix the price or prices in the attached Bid or any other BIDDER, or to fix any overhead, profit, or cost element of the Bid Price or the Bid Price of any other BIDDER, or to secure through any collusion conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Contract;

The price of items quoted in the attached Bid are fair and proper and are not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the BIDDER or any other of its agents, representatives, owners, employees or parties in interest, including this affidavit.

Printed Name/Signature **Francois Didier Menard**

Title **Vice President**

Name of Company **CH2M HILL Engineers, Inc.**

Supplier: **CH2M**

City of Pembroke Pines Attachment D

SWORN STATEMENT
ON PUBLIC ENTITY CRIMES
UNDER FLORIDA STATUTES CHAPTER 287.133(3)(a).

1. This sworn statement is submitted **CH2M HILL Engineers, Inc.** (name of entity submitting sworn statement) whose business address is **550W, Cypress Rd., Fort Lauderdale, FL** and (if applicable) its Federal Employer Identification Number (FEIN) is **32-0100027**. (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: .)

2. My name is **Francois Didier Menard** and my
(Please print name of individual signing)

relationship to the entity named above is **Vice President**.

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

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

5. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:

    1. A predecessor or successor of a person convicted of a public entity crime: or

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

6. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any

natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

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

☑ A) Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ B) The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND **(Please indicate which additional statement applies.)**

☐ B1) There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. **(Please attach a copy of the final order.)**

☐ B2) The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. **(Please attach a copy of the final order.)**

☐ B3) The person or affiliate has not been placed on the convicted vendor list. **(Please describe any action taken by or pending with the Department of General Services.)**

Francois Didier Menard	**CH2M HILL Engineers, Inc.**	**6/25/2018**
Bidder's Name/Signature	Company	Date

Supplier: **CH2M**

City of Pembroke Pines

Attachment E

LOCAL VENDOR PREFERENCE CERTIFICATION

SECTION 1 GENERAL TERM

LOCAL PREFERENCE

The evaluation of competitive bids is subject to section 35.36 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to local businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with either of the following objective criteria as of the bid or proposal submission date stated in the solicitation. A local business shall be defined as:

1. "Local Pembroke Pines Vendor" shall mean a business entity which has maintained a permanent place of business with full-time employees within the City limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the City of Pembroke Pines.

OR;

2. "Local Broward County Vendor" shall mean or business entity which has maintained a permanent place of business with full-time employees within the Broward County limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the Broward County or the city within Broward County where the business resides.

A preference of five percent (5%) of the total evaluation point, or five percent (5%) of the total price, shall be given to the **Local Pembroke Pines Vendor(s);** A preference of two and a half percent (2.5%) of the total evaluation point for local, or two and a half percent (2.5%) of the total price, shall be given to the **Local Broward County Vendor(s)**.

COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

SECTION 2 AFFIRMATION

LOCAL PREFERENCE CERTIFICATION:

☐ Place a check mark here only if affirming bidder meets requirements above as a Local Pembroke Pines Vendor. In addition, the business must attach a current business tax receipt from the City of Pembroke Pines along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.

☑ Place a check mark here only if affirming bidder meets requirements above as a Local Broward County Vendor. In addition, the business must attach a current business tax receipt from the Broward County or the city within Broward County where the business resides along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.

☐ Place a check mark here only if affirming bidder does not meet the requirements above as a Local Vendor.

Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for Local Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for Local Vendor Preference based on their sub-contractors' qualifications.

COMPANY NAME: **CH2M HILL Engineers, Inc.**

PRINTED NAME / AUTHORIZED SIGNATURE: **Francois Dider Menard**

Supplier: **CH2M**

City of Pembroke Pines

Attachment F

VETERAN OWNED SMALL BUSINESS (VOSB) PREFERENCE CERTIFICATION

SECTION 1 GENERAL TERM

VETERAN OWNED SMALL BUSINESS (VOSB) PREFEREENCE

The evaluation of competitive bids is subject to section 35.37 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to veteran owned small businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with the following objective criteria as of the bid or proposal submission date stated in the solicitation. A veteran owned small business shall be defined as:

1. "Veteran Owned Small Business" shall mean a business entity which has received a "Determination Letter" from the United States Department of Veteran Affairs Center for Verification and Evaluation notifying the business that they have been approved as a Veteran Owned Small Business (VOSB).

A preference of two and a half percent (2.5%) of the total evaluation point, or two and a half percent (2.5%) of the total price, shall be given to the **Veteran Owned Small Business (VOSB)**. This shall mean that if a **VOSB** submits a bid/quote that is within 2.5% of the lowest price submitted by any vendor, the **VOSB** shall have an option to submit another bid which is at least 1% lower than the lowest responsive bid/quote. If the **VOSB** submits a bid which is at least 1% lower than that lowest responsive bid/quote, then the award will go to the **VOSB**. If not, the award will be made to the vendor that submits the lowest responsive bid/quote. If the lowest responsive and responsible bidder IS a **"Local Pembroke Pines Vendor" (LPPV)** or a **"Local Broward County Vendor" (LBCV)** as established in Section 35.36 of the City's Code of Ordinances, entitled "Local Vendor Preference", then the award will be made to that vendor and no other bidders will be given an opportunity to submit additional bids as described herein.

If there is a **LPPV**, a **LBCV**, and a **VOSB** participating in the same bid solicitation and all three vendors qualify to submit a second bid, the **LPPV** will be given first option. If the **LPPV** cannot beat the lowest bid received by at least 1%, an opportunity will be given to the **LBCV**. If the **LBCV** cannot beat the lowest bid by at least 1%, an opportunity will be given to the **VOSB**. If the **VOSB** cannot beat the lowest bid by at least 1%, then the bid will be awarded to the lowest bidder.

If multiple **VOSBs** submit bids/quotes which are within 2.5% of the lowest bid/quote and there are no **LPPV** or **LBCV** as described in Section 35.36 of the City's Code of Ordinance, entitled "Local Vendor Preference", then all **VOSBs** will be asked to submit a **Best and Final Offer (BAFO)**. The award will be made to the **VOSB** submitting the lowest **BAFO** providing that that **BAFO** is at least 1% lower than the lowest bid/quote received in the original solicitation. If no **VOSB** can beat the lowest bid/quote by at least 1%, then the award will be made to the lowest responsive bidder.

COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

SECTION 2 AFFIRMATION

VETERAN OWNED SMALL BUSINESS (VOSB) PREFEREENCE CERTIFICATION:

☐ Place a check mark here only if affirming bidder meets requirements above as a Veteran Owned Small Business. In addition, the bidder must attach the "Determination Letter" from the U.S. Dept. of Veteran Affairs Center.

☑ Place a check mark here only if affirming bidder does not meet the requirements above as a VOSB.

Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for VOSB Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for VOSB Preference based on their sub-contractors' qualifications.

COMPANY NAME: **CH2M HILL Engineers, Inc.**

PRINTED NAME / AUTHORIZED SIGNATURE: **Francois Didier Menard**

Supplier: **CH2M**

City of Pembroke Pines

Attachment G

EQUAL BENEFITS CERTIFICATION FORM
FOR DOMESTIC PARTNERS AND ALL MARRIED COUPLES

Except where federal or state law mandates to the contrary, a Contractor awarded a Contract pursuant to a competitive solicitation shall provide benefits to Domestic Partners and spouses of its employees, irrespective of gender, on the same basis as it provides benefits to employees' spouses in traditional marriages.

The Contractor shall provide the City and/or the City Manager or his/her designee, access to its records for the purpose of audits and/or investigations to ascertain compliance with the provisions of this section, and upon request shall provide evidence that the Contractor is in compliance with the provisions of this section upon each new bid, contract renewal, or when the City Manager has received a complaint or has reason to believe the Contractor may not be in compliance with the provisions of this section. Records shall include but not be limited to providing the City and/or the City Manager or his/her designee with certified copies of the Contractor's records pertaining to its benefits policies and its employment policies and practices.

The Contractor must conspicuously make available to all employees and applicants for employment the following statement:

> **"During the performance of a contract with the City of Pembroke Pines, Florida, the Contractor will provide Equal Benefits to its employees with spouses, as defined by Section 35.39 of the City's Code of Ordinances, and its employees with Domestic Partners and all Married Couples".**

The posted statement must also include a City contact telephone number and email address which will be provided to each contractor when a covered contract is executed.

SECTION 1 DEFINITIONS

1. **Benefits** means the following plan, program or policy provided or offered by a contractor to its employees as part of the employer's total compensation package which may include but is not limited to sick leave, bereavement leave, family medical leave, and health benefits.

2. **Cash Equivalent** mean the amount of money paid to an employee with a domestic partner or spouse in lieu of providing benefits to the employee's domestic partner or spouse. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee for his or her spouse from a traditional marriage.

3. **Covered Contract** means a contract between the City and a contractor awarded subsequent to the date when this section becomes effective valued at over $25,000 or the threshold amount required for competitive bids as required in section 35.18(A) of the Procurement Code.

4. **Domestic Partner** shall mean any two (2) adults of the same or different sex who have registered as domestic partners with a governmental body pursuant to state or local law authorizing such registration, or with an internal registry maintained by the employer of at least one of the domestic partners. A contractor may institute an internal registry to allow for the provision of equal benefits to employees with domestic partners who do not register their partnerships pursuant to a governmental body authorizing such registration, or who are

located in a jurisdiction where no such governmental domestic partnership registry exists. A contractor that institutes such registry shall not impose criteria for registration that are more stringent than those required for domestic partnership registration by the City of Pembroke Pines.

5. **Equal benefits** means the equality of benefits between employees with spouses and/or dependents of spouses and employees with domestic partners and/or dependents of domestic partners, and/or between spouses of employees and/or dependents of spouses and domestic partners of employees and/or dependents of domestic partners.

6. **Spouse** means one member of a married pair legally married under the laws of any state within the United States of America or any other jurisdiction under which such marriage is legally recognized, irrespective of gender.

7. **Traditional marriage** means a marriage between one man and one woman.

SECTION 2 CERTIFICATION OF CONTRACTOR

The firm providing a response, by virtue of the signature below, certifies that it is aware of the requirements of Section 35.39 "City Contractors providing Equal Benefits for Domestic Partners and all Married Couples" of the City's Code of Ordinances, and certifies the following (**Check only one box below)**:

☑ **A.** Contractor currently complies with the requirements of this section; or

☐ **B.** Contractor will comply with the conditions of this section at the time of contract award; or

☐ **C.** Contractor will not comply with the conditions of this section at the time of contract award: or

☐ **D.** Contractor does not comply with the conditions of this section because of the following allowable exemption **(Check only one box below):**

☐ **1.** The Contractor does not provide benefits to employees' spouses in traditional marriages;

☐ **2.** The Contractor provides an employee the cash equivalent of benefits because the Contractor is unable to provide benefits to employees' Domestic Partners or spouses despite making reasonable efforts to provide them. To meet this exception, the Contractor shall provide a notarized affidavit that it has made reasonable efforts to provide such benefits. The affidavit shall state the efforts taken to provide such benefits and the amount of the cash equivalent. Cash equivalent means the amount of money paid to an employee with a Domestic Partner or spouse rather than providing benefits to the employee's Domestic Partner or spouse. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee's spouse;

☐ **3.** The Contractor is a religious organization, association, society, or any non-profit charitable or educational institution or organization operated supervised or controlled by or in conjunction with a religious organization, association, or society;

☐ **4.** The Contractor is a governmental agency;

The certification shall be signed by an authorized officer of the Contractor. Failure to provide such certification (by checking the appropriate boxes above along with completing the information below) shall result in a Contractor being deemed non-responsive.

COMPANY NAME: **CH2M HILL Engineers, Inc.**

AUTHORIZED OFFICER NAME / SIGNATURE: **Francois Didier Menard**