Attachment A - Mandatory Questions

Mandatory Questions

These questions are Pass/Fail. To be considered responsive, responsible and eligible for award, you must answer all questions in this section.

DO NOT INCLUDE ANY COST INFORMATION IN YOUR RESPONSE TO THIS WORKSHEET.

Question #	Questions per Proposal Factors/Categories	Response by Offeror. Only Yes or No Answers	Upload Attachments ?	Attachment Name
	Proposal Factors			
1	List any criminal violations and/or convictions of the Proposer and/or any of its principals: (N/A is not an acceptable answer).	No	IF YES	
2	Completed and uploaded PSL Location Form	Yes	IF YES	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg53
3	Is firm a minority business?	No	IF YES	
4	Is the firm incorporated? Yes--No If yes, in what state?	Yes - Delaware	No	
5	List any judgements from lawsuits in the last five (5) years: (N/A is not an acceptable answer).	No	IF YES	
6	List any lawsuits pending or completed within the past five (5) years involving the corporation, partnership or individuals with more than ten percent (10%) interest: (N/A is not an acceptable answer).	Yes	IF YES	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg49
7	Has the Proposer or any of its principals ever been declared bankrupt or reorganized under Chapter 11 or put into receivership?	No	IF YES	
8	Submitted all licenses and certifications required to perform this project.	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg11
9	Submitted a copy of their Insurance Certificate for the type and dollar amount of insurance they currently maintain.	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg3
10	Completed and uploaded E-Verify Form	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg51
11	Completed and uploaded Drug Free Workplace Form	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg52
12	Completed and uploaded Consultant Code of Ethics	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg55
13	Completed and uploaded Non-Collusion Affidavit	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg57
14	Completed and uploaded Cone of Silence Form	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg54

15	Completed and uploaded Truth-In Negotiation Form	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg50
16	Submit W-9	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg2
17	Completed and uploaded Mandatory Scored Questions	Yes	Yes	Attachment B - Mandatory Scored Questions_Tetra Tech / & / eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments
18	Completed and uploaded Contractor General Information Worksheet.	Yes	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg59

Attachment B - Mandatory Scored Questions

Mandatory Scored Questions				
Offerors must answer all the questions in this spreadhseet in the cell provided.				
Failure to answer these questions will result in disqualification of the proposal.				
Offerors must indicate whether their proposal meets the individual requirement and provide a supporting narrative in the space provided. The narrative description, along with any required supporting materials, will be evaluated and awarded points in accordance with Section 6 "Proposal Evaluation, Negotiations and Award" of this eRFP. ONLY upload documents if there is a Yes in the "Upload Attachs with Additional Information?" column, to provide additional information about specific questions. Documents not requested in this column will not be evaluated.				
DO NOT INCLUDE ANY COST INFORMATION IN YOUR RESPONSE TO THIS WORKSHEET.				
Question #	Questions per Proposal Factors/Categories	Response by Offeror	Upload Attachments?	Attachment Name
1	**Please provide all documentation needed for Location.** **Proposer's Location** - Location shall mean a business which meets the following criteria: # of Miles from City Hall to Assigned Staff's Office location 0-60 Miles 61-80 Miles 81-100 Miles 101-120 Miles 121-140 Miles 140+ Miles	126 Miles	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg13
2	**Woman/Veteran/Minority Owned Business -** Does the Primary firm hold a Minority Business Certification by the Florida Department of Management Services, as described in section 8 of the document? If so, please attach.	No	No	
3	**EXECUTIVE SUMMARY -** This section should include the Firm's overall concept of the working relationship that will be required to successfully complete this project. The proposer shall provide an executive summary narrative containing information that indicates an understanding of the overall need for and purpose of the services presented in the RFP.	Please refer to attachment	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg14
4	**GENERAL SCOPE OF SERVICES** - Provide a general description of the types of services your firm is capable of providing.	Please refer to attachment	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg17
5	**PROGRAM MANAGEMENT SERVICES -** Provide a description of the program management services your firm can provide.	Please refer to attachment	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg18
6	**PLANNING SUPPORT -** Describe the types of planning your firm can provide.	Please refer to attachment	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg20
7	**QUALIFICATIONS & STAFF/PERSONNEL** - Please complete and attach Form 330 part I and II for evaluation of qualifications & staff/personnel.	Please refer to SF330 attachment	Yes	eRFP 20210093_File#3_PortStLucie_TetraTech_ SF330
8	**DESIGN SUPPORT** - Provide a list of at least 5 but no more than 10 projects within the last 5 years that your firm has done and describe what types of projects and services your firm provided.	Please refer to attachment	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg25

Attachment B - Mandatory Scored Questions

9	**CONSTRUCTION ENGINEERING AND INSPECTION SERVICES** - Describe the CEI services your firm can provide.	Please refer to attachment	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg40
10	**GRANT & LOAN FUNDING SUPPORT** - Provide examples of grants and loans your firm can provide.	Please refer to attachment	Yes	eRFP 20210093_ File#4_PortStLucie_TetraTech_ Forms & Attachments_pg42

PART I - CONTRACT-SPECIFIC QUALIFICATIONS

SECTION A. CONTRACT INFORMATION

1. TITLE AND LOCATION (CITY AND STATE)

Continuing Engineering Services for Utility Projects, City of Port St. Lucie, FL

2. PUBLIC NOTICE DATE	3. SOLICITATION OR PROJECT NUMBER
July 16, 2021	20210093

SECTION B. ARCHITECT-ENGINEER POINT OF CONTACT

4. NAME AND TITLE

James Christopher, PE, Client Services Manager

5. NAME OF FIRM

Tetra Tech, Inc.

6. TELEPHONE NUMBER	7. FAX NUMBER	8. E-MAIL ADDRESS
407.480.3906	407.839.3970	james.christopher@tetratech.com

SECTION C. PROPOSED TEAM

	PRIME	JV P.	SUB.	9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
a	☑			**Tetra Tech** ☑ Check if Branch Office	201 East Pine Street, Suite 1000 Orlando, FL 32801	• Project Management • Structural Engineering • Mechanical Engineering • Electrical Engineering • Water Supply & Treatment • Wastewater Treatment • Pipeline Design • Civil Stormwater Planning & Design • Hydraulic & Hydrologic Modeling • Utilities Master Planning • Asset Management & Rate Studies • Cybersecurity & AWIA Compliance • Electrical and I&C • HVAC & Plumbing • Surveying & GIS • Construction Management Construction • Engineering Inspection (CEI) • Hydrogeological & Water Use Permitting
b	☑			**Tetra Tech** ☑ Check if Branch Office	2000 Warrington Way, Suite 245 Louisville, KY 40222	• Structural Engineering • Architecture
c	☑			**Tetra Tech** ☑ Check if Branch Office	1899 Powers Ferry Road, Suite 400 Atlanta, GA 30339	• Water Supply & Treatment • QA/QC Review
d	☑			**Ardaman & Associates (A Tetra Tech Company)** ☑ Check if Branch Office	8008 South Orange Avenue Orlando, FL 32809	• Hydrogeological & Water Use Permitting
e	☑			**Ardaman & Associates (A Tetra Tech Company)** ☑ Check if Branch Office	460 Northwest Concourse Place #1 Port St. Lucie, FL 34986	• Geotechnical

SECTION D. ORGANIZATIONAL CHART OF PROPOSED TEAM

PRINCIPAL-IN-CHARGE
Jon Fox, PE *

CLIENT SERVICES MANAGER
James Christopher, PE, BCEE *

QA/QC REVIEW
Tracy Lewis, PE *
Jill Hudkins, PE

* Resume included in Section E

PRIMARY TECHNICAL DISCIPLINES

WATER SUPPLY & TREATMENT
Jon Bundy, PE *
Jarret Kinslow, PE *
Jennifer Ribotti, PE

WASTEWATER TREATMENT
John Toomey, PE *
Kevin Friedman, PE
Brenda Keenan, PE

PIPELINE DESIGN
Scott Smith, PE *
Burl Reardon, PE, LEED GA
Shannon Leicht, PE

CIVIL STORMWATER PLANNING & DESIGN
Michael Thatcher, PE *
Timothy Vanderwalker, PE
James Warner, PE, LEED AP BD+C

HYDRAULIC & HYDROLOGIC MODELING
Scott Smith, PE
Shannon Leicht, PE *
Stephen Rousseau, EI

INFRASTRUCTURE ASSET MANAGEMENT

UTILITIES MASTER PLANNING & FUNDING
Andrew Woodcock, PE *
Janine Alexander, PE *

ASSET MANAGEMENT & RATE STUDIES
Andrew Woodcock, PE
Alex Montalvo

CYBERSECURITY & AWIA COMPLIANCE
Mark McKinney , CISSP *
David Espy, CISSP

ENGINEERING TECHNICAL SUPPORT SERVICES

ARCHITECTURE
Quintin Biogi, RA, AIA, GPCP, NCARB. CDT, LEED AP BD+C *

STRUCTURAL ENGINEERING
Jason Burkett, PE *

ELECTRICAL AND I&C
David Burger, PE *
Banks Wason, PE

HVAC & PLUMBING
Michael Sutherland, PE, LEED AP BD+C *

GEOTECHNICAL
Dan Zrallack, PE *
Sharmila Pant, EI

SURVEYING & GIS
Lawrence Jenkins, PSM *
Betty Morris

CONSTRUCTION MANAGEMENT & CONSTRUCTION ENGINEERING INSPECTION (CEI)
Edward Wills, PE *
Andre'ya Ramos

HYDROGEOLOGICAL & WATER USE PERMITTING
Douglas Dufresne, PG*
Bruce Lafrenz, PG *
Miguel Garcia, PG
Anna Lee Woodson, GIT

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Jon Fox, PE	**Principal-in-Charge**	**31**	**31**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Environmental Engineering, University of Central Florida	Professional Engineer: FL, No. 49487

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Fox participates in many aspects of environmental engineering, including the planning, design, permitting, and construction administration of water and wastewater treatment facilities and distribution/collection systems. He has gained valuable experience in the hydraulic system analysis of water distribution systems and construction management services.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Cypress West Water Reclamation Facility Upgrade and Expansion, Phase IB, Toho Water Authority, Kissimmee, FL	PROFESSIONAL SERVICES 2018	CONSTRUCTION 2018
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Client Manager. Client Manager for the expansion upgrades from 6-12 MGD which includes disk membrane filtration, chlorine contact chambers, and effluent storage, and high-service pumping facilities.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Alternative Water Supply Design-Build, City of Tarpon Springs, Tarpon Springs, FL	PROFESSIONAL SERVICES 2015	CONSTRUCTION 2015
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Client Manager. Services include preliminary engineering, final design, permitting, and construction administration. Project consists of raw water supply wells and a new reverse osmosis water treatment plant capable of treatment up to 6.4 MGD which is designed for high salinity groundwater treatment.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Westside Water Main Loop, City of Clermont, Clermont, FL	PROFESSIONAL SERVICES 2014	CONSTRUCTION 2017
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Principal-in-Charge. Pipeline Corridor Evaluation Memo and final design construction plan drawings and specifications for 23,000 feet water main to loop and increase the hydraulic capacity of the City's transmission system and to abandon/ take out of service 6- to 12-inch diameter asbestos cement water mains. Project included preliminary cost and constructability analyses for varying methods of construction based on the project corridor and utility coordination, and pipe bursting, horizontal directional drilling, and open cut methods of installation were used.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Southwest 6 & 7 Utility Extension Program, City of Cape Coral, Cape Coral, FL	PROFESSIONAL SERVICES 2015	CONSTRUCTION 2015
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Principal-in-Charge. Expansion of the City's water, wastewater and irrigation systems to a 4-square mile area south of Pine Island Road. The project includes value engineering, hydraulic modeling for water, wastewater and irrigation systems, design, permitting, bidding, construction management and CEI with 9 full time construction oversight field personnel. The project includes over 200 miles of potable water, wastewater collection, wastewater transmission and irrigation utility piping; 18 lift stations and a stormwater canal pumping station to supplement reclaimed water during high demand periods.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT			
e	(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	Pump Stations No. 60 and 97 Improvements, Toho Water Authority, Kissimmee, FL	PROFESSIONAL SERVICES 2012	CONSTRUCTION 2012
	(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM
	Project Manager. Preliminary engineering, final design, permitting, bidding and construction phase services for the rehabilitation of two submersible wastewater pump stations. Improvements at each station included structural rehabilitation, installation of a triplex submersible pump system, above-grade discharge piping, odor control facilities, a standby generator set, new controls, and SCADA interface.		

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
James Christopher, PE, BCEE	**Client Services Manager**	**40**	**30**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
MS, Environmental Engineering and Science, University of Central Florida; BS, Chemistry, Duke University	Professional Engineer: FL, No. 34204; Board Certified Environmental Engineer (BCEE)

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Christopher is a vice president and practice leader for water treatment for Tetra Tech. His knowledge of water chemistry and water infrastructure design makes him highly qualified in defining, evaluating, and implementing water quality solutions to the most challenging problems. He has 40 years of professional engineering experience and is highly qualified in environmental engineering, with special expertise in wastewater treatment, effluent reuse/utilization/disposal, water resources, water quality and treatment, reverse osmosis and nanofiltration, granular activated carbon, pumping system analysis/station design, facility planning, construction administration.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
McCarty Ranch Master Water Supply Plan, City of Port St. Lucie, Port St. Lucie, FL	PROFESSIONAL SERVICES 2019	CONSTRUCTION N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager. The project includes the creation of 20-year growth projections for the water, wastewater, and reclaimed water systems; determining future water supply needs over the planning period; evaluating the capacity of the existing sources of supply; updating the system hydraulic models; developing future water supply alternatives; and preparing a conceptual layout and cost estimate for the selected water supply alternative.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Central Water Integration Project (CWIP), San Antonio Water System San Antonio, San Antonio, TX	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Technical Advisor/Water Quality Lead. Project consists of treatment facilities, conveyance pipelines, and improvements to existing pump stations and distribution facilities to integrate a new 48.0 MGD potable water supply source into the utility's potable water distribution system. The supply source for this project consisted of a $900 million P3 water supply project that will import groundwater from a wellfield that is 140 miles from the City of San Antonio. The designed treatment facilities include pressurized solution injection of carbon dioxide for pH adjustment, lime storage and batch slaking, lime saturators (solids contactors) for calcium remineralization, dual media pressure filters, a sodium hypochlorite on-site generation system, fluoride storage and feed, backwash recovery, filtered solids and lime sludge gravity thickener, sludge handling and dewatering using centrifuges, and associated polymer storage and feed systems. Managed the basis of design development, bench scale testing and final design of the carbon dioxide and lime feed systems.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Harmony Water Treatment Plant Disinfection By-Product Technology Review, Toho Water Authority, Kissimmee, FL	PROFESSIONAL SERVICES 2017	CONSTRUCTION 2017
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager. Review of technologies for disinfection by-products (DBPs) control for the Harmony water treatment plant as an alternate to the existing MIEX system. Services included the identification and listing of over 14 different treatment technologies to control or reduce disinfection by-product formation. A description and summary of each technology was developed to describe their application, performance, limitations, reliability, design criteria, equipment suppliers, cost, and example installations. Phased improvements were recommended for implementation of facilities to improve disinfection by-product compliance.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Alternative Water Supply Design/Build, City of Tarpon Springs, Tarpon Springs, FL	PROFESSIONAL SERVICES 2015	CONSTRUCTION 2015
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Design Manager. Project included design and technical services associated with the design/build construction of the City's 6.4 MGD alternative water supply facility. The facility is designed to accommodate high salinity brackish water from a group of 15 Floridan aquifer supply wells and includes 3 2 MGD reverse osmosis skids, degasification, biotrickling filters for odor control, chlorine contact, transfer pumping, 5 MG ground storage reservoir and high service pumping. Raw water system and reverse osmosis skids are designed using duplex stainless steel to accommodate high salinity and seawater membranes.

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Groundwater Replenishment (GWR) Feasibility Study and Advanced Pilot Plant Demonstration, City of Clearwater, Clearwater, FL	PROFESSIONAL SERVICES 2014	CONSTRUCTION N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Technical Leader. Responsible for oversight of the development of the preliminary process layout and cost estimates for a 3 MGD treatment system to convert reclaimed water from the Northwest WWTP to suitable quality for injection into the potable water aquifer to supplement the drinking water supply.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Tracy Lewis, PE	**QA/QC**	**25**	**1**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
MS/BS, Environmental Engineering, University of Florida	Professional Engineer: FL, No. 56795 Associate DBIA, No. AS-3064

18. OTHER PROFESSIONAL QUALIFICATIONS

Ms. Lewis's has 25 years of experience in design and management of wastewater treatment, water reclamation, and conveyance projects. In addition to her consulting experience, Tracy has a unique perspective of a utility employee as former chief engineer for one of the largest utilities in the southeastern United States. She excels in bringing resources together from the public and private sector to utilize the range of technical experts in the most beneficial way for clients. Tracy has significant experience with large, complex projects, managing multi-disciplinary teams in multiple geographies. Her experience involves master planning, analysis, design, permitting, and construction management of various greenfield, wastewater rehabilitation and expansion-related projects.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Iron Bridge Water Reclamation Facility, City of Orlando, Orlando, FL	2018	2018
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager. This project included the preparation of a preliminary design report and FDEP permit application to rerate the existing 24 MGD-AADF Bardenpho process to 40 MGD-AADF. The project also included improvements to the existing facility estimated at $40M, including pump modifications, enhancements to the BNR system, supplemental fine bubble aeration addition to the existing oxidation ditch aeration basins, clarifier modifications, additional filters and existing filter modifications, biosolids handling facility improvements, and odor control.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Eastern Water Reclamation Facility Expansion, City of Clermont, Clermont, FL	Ongoing	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

QA/QC. Expansion of the City's Eastern Wastewater Treatment Plant from 4.0 to 6.5 MGD, with a subsequent future expansion to 9.0 MGD. The facilities included a new preliminary treatment structure, flow equalization system, anoxic/aerobic biological nutrient removal structure featuring the Modified Ludzack-Ettinger (MLE) process, secondary clarifier, disk filtration facilities, an additional chlorine contact tank, aerated sludge holding tank, and a belt filter press for biosolids dewatering. The project also included significant electric and standby power improvements, as well as a new SCADA system. The preliminary design involved extensive sampling and process model development, as well as calibration to optimize basin sizing and aeration system design.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Integrated Utilities Master Plan, Palm Beach County, FL	2021	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Technical Advisor. Advising the development of an Integrated Utility Master Plan that guides the operations, maintenance, and capital improvements of the utility through 2050. Project is focused on developing a process rather than a document that leverages the County's CMMS, SCADA, and GIS information to identify issues and develop effective solutions for implementation. The goals and metrics to align with and support the County's goal to achieve ISO 55001 certification in Asset Management.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Chickasaw WWTP Expansion, City of Bartlesville, Bartlesville, OK	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

QA/QC. Plant expansion from 7.0 to 8.2 MGD, including treatment improvements. Plant is an advanced secondary plant with primary clarification, activated sludge, secondary clarification, chlorination, and dichlorination with the discharge into the Caney River. Sludge is anaerobically digested and land-applied as liquid sludge. Project includes treatment of 4.0 MGD of effluent to Indirect Potable Reuse standards.

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Sabine Creek WWTP Facility Feasibility Study and Master Plan, North Texas Municipal Water District, TX	PROFESSIONAL SERVICES 2021	CONSTRUCTION N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

QA/QC. Developing a Facility Master Plan providing a comprehensive improvement plan for the plant. Plan includes a condition and criticality assessment and focused evaluation on capital expansion, asset renewal, and planning for future potential regulatory requirement needs. Condition assessments performed for all disciplines, including process, structural, electrical and mechanical assets.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Jon Bundy, PE	**Water Supply & Treatment**	**25**	**1**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
MS, Environmental Engineering, Georgia Institute of Technology; BS, Environmental Engineering, University of Central Florida	Professional Engineer: FL, No. 62561

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Bundy has 25 years of experience in the analysis, design, and permitting of water treatment facilities, including the design and analysis of treatment processes and treatment alternatives, design, optimization and rehabilitation of chemical feed and storage systems, design of water treatment pumping stations, and membrane treatment processes. He also has experience in the development of utility master plans and hydraulic modeling of potable water, reclaimed water, and manifolded wastewater pumping systems. Mr. Bundy's experience also includes construction of a range of water and wastewater treatment projects, ranging from small rehabilitation projects to expansion and construction of large water treatment facilities.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
McCarty Ranch Master Water Supply Plan, City of Port St. Lucie, Port St. Lucie, FL	2019	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. The project includes creating 30-year growth projections for the water, wastewater, and reclaimed water systems; determining future water supply needs over the planning period; evaluating the capacity of the existing sources of supply; updating the system hydraulic models; developing future water supply alternatives; performing a cost and non-cost evaluation of alternatives; and preparing a conceptual layout and cost estimate for the selected water supply alternative. Future water supply alternatives evaluated included expansion of the brackish water wellfield, indirect potable reuse, seawater desalination, and withdrawal of surface water from the C-23 canal for storage in a reservoir, treatment facility, and ASR facility proposed to be constructed on the 3,900-acre McCarty Ranch site owned by the City as a water supply alternative. Provided a cost budget phasing plan and schedule for the selected alternative.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Lakeland-Bartow-Polk County Utilities Potable Water Interconnect Evaluation, City of Lakeland, Lakeland, FL	Ongoing	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Manager. Project Manager. Evaluation of a proposed interconnect between the City of Lakeland, City of Bartow, and Polk County Utilities for emergency water transfers between each system for enhanced reliability. The evaluation included a hydraulic review of each utility's potable water hydraulic model and the development of a combined hydraulic model to evaluate the amount of water that can be transferred between systems and determine the infrastructure requirements for providing an emergency interconnect. The project also included a water quality evaluation to determine if the compatibility of the water sources. The water quality evaluation included the review of historical water quality from each utility as well as the development of a sampling plan for sampling key parameters in each system near the proposed interconnect site. Evaluated available parcels for potential sites for the interconnect in the vicinity of where three water systems service areas converge. The project included a report summarizing the results with a conceptual site plan and engineer's opinion or probable construction cost.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Malcolm Road Water Supply Facility, Orange County Utilities, Orange County, FL	2020	2020
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Manager. Project Engineer. The project included final design, permitting, and construction management services for a new 8.64 MGD potable water supply facility in west Orange County. The treatment facility consists of six lower Floridan aquifer supply wells and vertical turbine well pumps enclosed in well houses, raw water main piping, two 2.0 MG ground storage tanks, high service pumping within a treatment facility building, and sodium hypochlorite and fluoride storage and feed systems. The project also included 2,400 feet of 36-inch water main to connect to the County's water distribution system.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Hodge Street Water Production Facility Improvements, Polk County Utilities, Polk County, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Manager. Project included the design and construction of granular activated carbon and tray aeration treatment process modifications for controlling disinfection byproducts at the Hodge Street Water Production Facility. The proposed facility improvements included replacement of the existing raw water well pump with a new vertical turbine well pump, addition of 0.5 MGD granular activated carbon contactors, addition of a new 140,000-gallon GST with a tray aerator with recirculation pump, and a high service pumping station to meet fire flow requirements, yard piping modifications, and associated electrical and instrumentation and control modifications. This integrated approach to DBP control allows for both capital and operational cost savings. Services included a conceptual design report, final design, permitting, bidding and construction administration services.

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
T.B. Williams WTP Filter Valves and Lime Sludge Thickener, City of Lakeland, Lakeland, FL	PROFESSIONAL SERVICES 2012	CONSTRUCTION 2014
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Manager. Responsible for the design of improvements to the City's lime sludge thickener and filter control valves. Services provided included a preliminary design technical memorandum, design services, permitting, bidding and construction administration services.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
John Toomey, PE	**Wastewater Treatment**	**41**	**21**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Environmental Engineering, University of Central Florida	Professional Engineer: FL, No. 40264

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Toomey has four decades of nationally recognized water and wastewater engineering experience in planning, design, and construction administration of various projects. He has extensive experience in the development and evaluation of large pumping systems and wastewater treatment plants, designing over 30 wastewater treatment facilities across Florida. Located in central Florida, Mr. Toomey currently serves as the technical lead of wastewater infrastructure projects and provides technical oversight on Tetra Tech's most critical projects.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Lift Station Improvements, City of Orlando, FL	PROFESSIONAL SERVICES: Ongoing	CONSTRUCTION: Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Senior Project Engineer. Tetra Tech has provided continuing miscellaneous professional engineering services to the City of Orlando since 2000. Projects have included numerous lift station refurbishments, utility infrastructure improvements and other miscellaneous engineering services as required. Services include: conversion and rehabilitation of two duplex lift stations from dry pit to wet pit, assistance developing city standard electrical/instrumentation CADD details, site improvements at 10 lift stations, and standby power improvement for master lift station.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Cypress West Water Reclamation Facility Upgrade & Expansion, Tohopekaliga Water Authority, Kissimmee, Florida	PROFESSIONAL SERVICES: 2017	CONSTRUCTION: 2018
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Lead. This project involved a full range of engineering services including survey, permitting, preliminary design, final design, permitting, and construction administration. The project involved increasing Toho Water Authority's Poinciana WRF No. 2 permitted capacity to 6.0 MGD with provisions for future expansion to a capacity of 12.0 MGD. As part of the expansion, the existing SBR process was abandoned in favor of the Modified Ludzack Ettinger (MLE) process and new cloth media filtration facilities were provided, as well as improvements to the disinfection system.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Parkway Water Reclamation Facility Decommissioning Hydraulics, Toho Water Authority, Kissimmee, FL	PROFESSIONAL SERVICES: Ongoing	CONSTRUCTION: Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager. Responsible for resource allocation, technical guidance, and client communication. The project includes the design and engineering services for the rehabilitation of the existing headworks structure at the Northside Wastewater Treatment Plant, an activated sludge facility with a permitted design capacity of 8.0 MGD. The preliminary treatment structure (headworks) includes screening, grit removal, and flow splitting. Tetra Tech evaluated and provided replacement alternatives for the bar screens to the age and condition of the existing equipment. Long term exposure of the western channel walls to gases generated from the raw wastewater has caused deterioration of the existing concrete substrate. The project also includes structural engineering services to arrest and repair this deterioration.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Wastewater System Evaluation Study, City of Lakeland, FL	PROFESSIONAL SERVICES: 2014	CONSTRUCTION: N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager. A detailed study of the City's wastewater collection, treatment, and disposal facilities for a 20-year planning period. The project included an evaluation of various regional and sub-regional treatment options, as well as an evaluation of pretreatment alternatives for a high-strength industrial wastewater. The project included a large computer model of the City's wastewater transmission system to evaluate various options under existing and projected flow conditions. A phased capital improvements plan was also developed as part of the project.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Harmony Water Reclamation Facility Upgrade& Expansion, Toho Water Authority, Kissimmee, FL	PROFESSIONAL SERVICES 2013	CONSTRUCTION 2016
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Manager. Project Manager. Upgrade and expansion of an existing 0.13 MGD package WWTP to provide a capacity of 0.50 MGD with provisions for future expansion to 2.50 MGD. The facility features two circular process basins that include anoxic, aeration, and settling stages with provisions for future conversion of the structures to clarifiers as plant capacity is increased.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Scott Smith, PE	**Pipeline Design**	**22**	**8**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
MS / BS, Civil/Environmental Engineering, University of Cincinnati	Professional Engineer: FL, No. 59505

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Smith has 22 years of engineering experience specializing in pipeline design, water and wastewater treatment, hydraulics, pumping and storage systems, hydraulic modeling, water reclamation and reuse, Geographic Information Systems (GIS), and project management. He is thoroughly familiar with all aspects of permitting, design, bidding, and construction of large high-profile public works projects. Mr. Smith has a demonstrated history of successful completion of complex projects on time and under budget as well as providing outstanding client service that earns repeat business.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Glendale WWTF Dewatering Improvements, City of Lakeland, Lakeland, FL	2020	2020
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Lead Designer. Performed dewatering equipment alternatives analysis and then preliminary and final design for installation of new decanter centrifuge equipment for production of Class AA biosolids (22% solids) from anaerobic digested sludge at City's Glendale WWTF. Evaluated and compared sizing, prices, relevant design parameters, and expected energy consumption of available centrifuge units with sufficient hydraulic and solids loading capacity to operate under 5-day/8-hour schedule under current conditions and expected future higher sludge concentrations following digester enhancements. Developed owner direct purchase specification and P&ID for procurement of 2,250 dry lb/hr rated centrifuges allowing Andritz, Centrysis, and Alfa Laval. Prepared preliminary design report with equipment selections and cost estimates, and final design drawings and specifications for installation of two new centrifuge within existing building. Design included mixing systems for existing sludge retention basins, rotary lobe sludge pumps and piping (in existing building), new shaftless screw conveyor system for transfer of dewatered cake, polymer activation/feed systems, emergency power, and centrate drain piping.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Reclaimed Water Storage, Pumping, and Transmission Facilities, City of Tarpon Springs, Tarpon Springs, FL	2017	2017
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Lead Designer. Designed new remote reclaimed water storage and pumping facility, consisting of 5.0 MG tank and 5.2 MGD high service pump station located at City municipal golf course to help manage and expand the reclaimed water system, meet water conservation goals, and decrease discharge to surface water. Provided preliminary engineering, final design, cost estimating, and permitting, for new facility. Coordinated site plan layout of new facility to keep out of field of play, and used trees, landscaping and architectural features for screening and blending with golf course. Designed 5.0-MG ground storage tank as prestressed AWWA D-110 style concrete tank with domed roof and "parapet wall" system to collect rainwater and route it into tank, resulting in net reduction of runoff to stormwater system. Designed new 5.2 MGD capacity high service pump station to provide ease of access and minimal maintenance for City personnel while providing effective security/access controls. Selected horizontal split case centrifugal pumps for ease of maintenance and incorporated motorized chain monorail hoist into structure to facilitate loading of pumps/motors. Selected VFD-driven pumps to operate near best efficiency to reduce wear on bearings and seals and increase pump life. The station also incorporated a VFD-driven jockey pump to maintain pressure during low demands. Designed approx. 2,000 feet of parallel 16" ductile iron transmission pipelines including jack and bore installation under County road. Responsible for coordinating with state and local permitting agencies, seeking permit modifications or exemptions, and obtaining construction permits for these facilities.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Carica Pump Station Improvements, Collier County, FL	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Engineer. To resolve ongoing problems and increase effective station capacity, performed a forensic evaluation of existing Carica Booster Pumping Station and recommended solutions to alleviate identified problems.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Iron Bridge Master Lift Station Influent Channel Rehabilitation Alternatives Analysis, City of Orlando, Orlando, FL	PROFESSIONAL SERVICES 2007	CONSTRUCTION 2007
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Process Engineer. Performed engineering for final design, bidding, and construction of public access reclaimed water pumping and storage systems at Iron Bridge Water Reclamation Facility. Designed 58 MGD reclaimed water transfer pump station, a 4 MG circular concrete ground storage tank, and 54 MGD high service pump station. Design also included new electrical building, flow meters with vaults, site work including stormwater management systems, and yard piping. Developed drawings and specifications and obtained and incorporated client review comments at 30, 50, 90, and 100% completion levels. Performed bidding services including analysis of bid packages and provided letter of award recommendation to City. Currently provide general services during construction including attendance at biweekly construction progress meetings, review of shop drawings and other submittals such as test procedures, and response to contractor's requests for information (RFI's).

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Hillsborough Co. Northwest Regional Water Reclamation Facility Expansion (Design-Build), Hillsborough County FL.	PROFESSIONAL SERVICES 2019	CONSTRUCTION 2020
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Process Engineer. Developed proposal and performed design for expansion of Northwest Regional Water Reclamation Facility (NWWRF) to 60 MGD peak capacity to allow County to retire two older wastewater plants and consolidate treatment in the northwest service area at the NWWRF. Developed proposal sections including 30% drawings for centrifuge sludge dewatering system with truck scales in building, reclaimed water high service and plant reject pump stations, modifications to existing high service pump station to serve as the effluent pump station, and reclaimed water and reject concrete ground storage tanks. Performed design of all yard piping (up to 60-inch diameter, predominantly ductile iron) in accordance with County standards and project design criteria. Yard piping drawings including full plan and profile sheets (Civil 3-D) for plant pipes 12-inch and larger per design-build contractor request. Performed QC review for plant pumping stations to ensure compliance with HI standards. Reviewed shop drawings and provided engineering support to contractor on construction related issues. Coordinated all permitting/clearances for new potable water piping.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Michael Thatcher, PE	**Civil Stormwater Planning & Design**	**9**	**9**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Civil Engineering, University of Hartford	Professional Engineer: FL, No. 83331; Construction Documents Technologist (CDT); Envision Sustainability Professional (ENV SP), No. 21794; FDEP Qualified Stormwater Management Inspector, No. 40808; Construction Safety and Health, 10-Hour OSHA Training

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Thatcher has wide-ranging experience in the execution of stormwater management projects. He has an extensive background in the design and implementation of stormwater infrastructure improvements; including municipal capital improvement projects, regional stormwater management, flood mitigation and retrofit projects, and stormwater master planning. He is also an expert in the conventional and innovative use and evaluation of best management practices (BMPs), and is proficient in the preparation of construction documents, including drawings and comprehensive project manuals.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Groundwater Replenishment, City of Clearwater, Clearwater, FL	2019	Pending
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Responsible for site, roadway and drainage improvements at the proposed City of Clearwater Groundwater Replenishment Facility. Responsible for roadway design and analyses, driveway connections, signage and pavement markings, as well as grading, and hydrologic and hydraulic analysis.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Islesboro Subdivision Stormwater and Utility Improvements, City of New Smyrna Beach, New Smyrna Beach, FL	2016	2020
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Design of 20,000 LF of stormwater pipeline improvements to reduce flooding within the 500-acre subdivision. Included was the design of 13,000 LF of watermain improvements, 4,300 LF of wastewater expansion and improvements, and roadway improvements for 6 miles of roadway in the subdivision. Due to its proximity to the ocean and bay, tidal surges are prevalent, and were accounted for in design. Performed hydrologic and hydraulic analysis of the project area, design of utility improvements, relocation, and expansion, coordination with utility agency owners, as well as preparation of construction documents, obtaining of SJRWMD ERP and USACE permits, bidding procurement, and construction administration services. Engineer of Record (EOR) for water and wastewater clearances, and project record drawings.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Stormwater Pump Stations Condition Assessments, City of Hollywood, Hollywood, FL	2020	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Condition assessment for the rehabilitation of ten (10) stormwater pump stations, including effects and mitigation measures related to sea level rise and lunar tide events. The assessments included both submersible pump stations as well as enclosed pump stations within buildings.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Northeast Service Area Water Treatment Plant Improvements, Collier County / City of Naples, Naples, FL	2018	2018
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Design of site, grading, and drainage elements due to improvements at the 0.75 million gallon per day (MGD) facility.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

	(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	Northwest Area Stormwater Management Improvements, City of Deltona, Deltona, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION Ongoing
	(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM
e	*Project Manager and Engineer.* Design of 7,600 LF of stormwater underdrain improvements to control high groundwater levels along six local roadways within the City. Included was the design of a lift station to manifold into an existing 10-inch forcemain, which discharges into Deep Creek. Performed hydrologic and hydraulic analysis of the project area, design of utility relocations, coordination with utility agency owners, as well as preparation of construction documents, obtaining of an ERP permit through SJRWMD, bidding procurement, and construction administration services.		

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Shannon Leicht, PE	**Hydraulic & Hydrologic Modeling**	**6**	**4**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Environmental Engineering, University of Florida	Professional Engineer: FL, No. 85389

18. OTHER PROFESSIONAL QUALIFICATIONS

Ms. Leicht is a Water Resources Engineer with more than six years of consulting experience. Her experience in Civil and Environmental Engineering includes master planning, new and retrofit design, alternative materials evaluation, retention/detention water quality improvements, storm sewer networks, hydrologic and hydraulic modeling, floodplain analysis, water control structure evaluation/design, gravity sewer collection systems and transmission mains utilizing open trench and trenchless designs for force mains and reclaimed water mains. Ms. Leicht is proficient in computer modeling software suites and packages, which include: PCSWMM, XPSWMM, and AdICPR (v3 and v4), contributing to large scale hydrologic and hydraulic models of watersheds including riverine and open channel hydraulics, interconnected lake systems and complex land locked lakes.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
McCarty Ranch Water Supply Plan, City of Port St. Lucie, Port St. Lucie, FL	2019	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer for the existing and future conditions hydraulic modeling of this project. The project included confirming existing infrastructure and using current billing data to generate accurate water demands for the system. Population and water demand projections were used to create future modeling scenarios to assess problem areas to address in the next 30 years.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Lake Minnehaha Stormwater Master Plan Update, City of Clermont, Clermont, FL	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Project Engineer for the existing conditions and future scenarios hydrologic and hydraulic modeling of this project. Project includes creating a new AdICPR hydrologic and hydraulic model, designing water quality improvements and level of service criterion, and developing Capital Improvement Projects.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Cypress Street Flood Improvement Design/Build Project, City of Tampa, Tampa, FL	2019	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Project wide H&H Modelling, design of 7,500 LF of box culvert, varying in size from 5'x6' to 8'x16', to implement a regional stormwater conveyance system to reduce flooding within a 220-acre basin.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Integrated Utility Master Plan, Palm Beach County, FL	Ongoing	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Project Engineer for the existing and future conditions hydraulic modeling for the reclaimed water systems of this project. The project includes confirming existing infrastructure and using current billing data to generate accurate demands for the system. Population and demand projections will be used to create future modeling scenarios to evaluate the ability of the systems to meet projected demands at 5 year, 10 year, 15 year, and 20 year timeframes.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

	(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	Corbin Park Area Stormwater Management Improvements, City of New Smyrna Beach, New Smyrna Beach, FL	PROFESSIONAL SERVICES 2020	CONSTRUCTION 2020
	(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM
e	*Project Engineer.* Development of a 2D adICPR 4 hydrologic and hydraulic (H&H) model for this 475-acre watershed within the Corbin Park neighborhood to assess the level of service of the existing stormwater management facilities. Project includes preparing an alternatives analysis to assist the City with planning for future capital improvements to increase the level of service of the study area. Prepared a Preliminary Design Report (PDR) which included preliminary designs of the various alternatives, a benefit versus cost analysis to compare these alternatives, and recommendations for the prioritization of the alternative solutions.		

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Andrew Woodcock, PE	**Utilities Master Planning & Funding; Asset Management / Rate Studies**	**31**	**30**

15. FIRM NAME AND LOCATION
Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
MBA, Rollins College; MS, Environmental Engineering / BS, Environmental Engineering, University of Central Florida	Professional Engineer: FL, No. 47118

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Woodcock has special expertise in utility master planning, due diligence investigations, utility valuations, financial feasibility analyses, and business plans. His skills include assisting utilities prepare operating and capital programs and supporting those programs with a series of rates and charges to provide for their successful implementation. He is experienced in conducting economic and feasibility analyses and serves as an expert witness on utility rate regulatory matters.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Integrated Utilities Master Plan, Palm Beach County, FL	Ongoing	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager. Develop an Integrated Utility Master Plan that guides the operations, maintenance and capital improvements of the utility through 2050. The project is focused on developing a process rather than a document that leverages the County's CMMS, SCADA and GIS information to identify issues and develop effective solutions for implementation. The goals and metrics to align with and support the County's goal to achieve ISO 55001 certification in Asset Management.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
State Revolving Fund Facilities Plan, City of Orlando, Orlando, FL	2017	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager. Facilities plan prepared to meet requirements of the Clean Water State Revolving Fund (CWSRF) loan funding for seven waste-water projects estimated at $66,300,000 over the next five years. The plan described alternative methods for addressing identified projects and proposed a specific course of action for each project. The plan also considered the projected growth in the City's service area and identified the need for each project. Tetra Tech evaluated two alternatives for each project, including estimated costs for each alternative and other nonmonetary factors. The analysis also considered environmental effects including project benefits and potential impacts to surface waters, endangered/ threaten species, and flood zones were also considered in the analysis. The implementation plan included preparation of the projects schedules, capital financing plan, and support in developing the adopting resolution and the public participation hearing. The plan was presented to the Florida Department of Environmental Protection.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Potable Water Ground Storage Tank and Pump Station, City of Daytona Beach, Daytona Beach, FL	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Client Manager. Project included preliminary and final design of a 5.0 million gallon (MG) potable water ground storage tank and high service pump station with chemical metering facilities and standby power. The new facility also includes multi-discipline design and coordination of electrical/instrumentation systems, mechanical, structural and architectural building design, civil/stormwater and process mechanical design. The project included preliminary and final design of the site and facilities layout, coordination with existing utility infrastructure, site survey, ecological investigations, geotechnical investigations, preliminary design report, regulatory requirements, permitting, bidding assistance, and construction administration. Tetra Tech coordinated the multiple disciplines involved for facility design, project deliverables, schedule, and client coordination. We also assisted the City with preparation of documents suitable for Florida Department of Environmental Protection State Revolving Fund (SRF) funding, which includes alternatives analysis, public involvement efforts (neighborhood meetings, renderings, etc.), and coordination with SRF loan subcontractor for compliance.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Pine Valley McCullough Water Treatment Plant(s) Facility Plans, Colorado Springs Utilities, Colorado Springs, CO	PROFESSIONAL SERVICES 2020	CONSTRUCTION N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Technical Project Manager. Mr. Woodcock served as the technical Project Manager, provides guidance and expertise on the Facility Plan components and ensures that technical resources are coordinated for the project. The Pine Valley WTP (84 MGD) and McCullough WTP (75 MGD) are conventional filtration plants with coagulation, flocculation sedimentation, filtration and disinfection processes. The work included data collection, demand projections, water quality criteria analyses, regulatory compliance evaluation, perform evaluations of the process design criteria and regulatory requirements for individual processes, condition assessments for process equipment and facility wide assets, preparation of a 20-year prioritized capital improvements plan.

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Water Conserv I WRF Consolidation Study, City of Orlando, Orlando, FL	PROFESSIONAL SERVICES 2018	CONSTRUCTION N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer and Financial Analyst. Responsible for the City's examination of the economic and nonmonetary factors associated with two options: Option 1—Retire the Water Conserv 1 Water Reclamation Facility (WC1WRF) and direct all wastewater flow within the Conserv 1 Service Area to the Iron Bridge Regional Water Reclamation Facility (IBRWRF) or Option 2—Re-furbish, upgrade, and expand the WC1WRF and continue to use the facility to provide wastewater service to the Conserv 1 Service Area. Analysis included updating the flow projections in the WCIWRF Service Area, developing a hydraulic model to evaluate the transmission system alternatives, and determining treatment facility up-grades at the WCIWRF to meet the projected flows. Each process was evaluated and sized based on the current projections. Effluent reuse and disposal considerations were evaluated and factored into the study. A detailed cost analysis was performed, and nonmonetary factors were then considered before the final report was presented to the City. Based upon the analysis and considering the significant amount of projected development within the WC1WRF Service Area, Tetra Tech recommended the City refurbish, upgrade, and expand the WC1WRF and continue its operation.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Janine Alexander, PE	**Utilities Master Planning & Funding**	**25**	**7**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Environmental Engineering, University of Central Florida	Professional Engineer: FL, No. 59244

18. OTHER PROFESSIONAL QUALIFICATIONS

Ms. Alexander has 25 years of utility experience, including project management for the master planning of utility systems, funding support, design of new facilities, relocations of existing facilities, utility coordination, permitting, construction administration, construction management, inspections, and certifications for numerous public and private-sector projects.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Distribution System Improvements Sections 1-3, Charlotte Harbor Water Association, Punta Gorda, FL	2019	2020

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

QA/QC Reviewer. Replacement and installation of potable water distribution system improvements. The project aims to replace and upsize approximately 99,000 linear feet of potable water mains with of 4-inch, 6-inch, 8-inch, and 10-inch diameter PVC and HDPE water mains. Improvements are proposed to replace existing, aged water mains including smaller diameter mains, asbestos cement (AC) mains, and to provide sufficient service and fire protection. Improvements included the installation of water mains, fire hydrants, isolation valves, water service connections, water meters, and other potable water appurtenances. Existing water mains replaced by the project that are less than 4-inch shall be abandoned in place. Existing water mains replaced by the project that are 4-inch and greater shall be grouted and abandoned in place. The project includes preliminary and final design, permitting, bidding assistance, and construction administration services. Oversaw project's USDA Rural Development funding.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Water Infrastructure Finance and Innovation Act (WIFIA) Letter of Interest (LOI) and Application, Toho Water Authority, Kissimmee, FL	2020	N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Senior Project Manager for WIFIA LOI preparation and submittal for a combined total of $81.8M of gravity sewer rehabilitation projects, of which approximately $40M was funded by the WIFIA loan for this regionally significant project. The project is divided into two classifications: Gravity Main Rehabilitation Project 1- High Priority Mains and the Gravity Main Rehabilitation Project 2- Critical Repairs, collectively known as The Accelerated Gravity Sewer Assessment and Rehabilitation Project. Project improvements consist of approximately: 75 miles of cleaning and CCTV of existing infrastructure, 17 miles of cured-in-place piping (CIPP) lining for 6-inch to 24-inch diameter mains, 8 miles of gravity sewer replacements for 8-inch to 24-inch diameter mains, 450 manhole replacements, and 312 manhole rehabilitations via coating. The LOI was submitted in July of 2018 and approved by the EPA for the Application process in November 2018. Funding negotiations were finalized and anticipated funding was secured in January of 2020.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Water Main Replacement Program, City of Hollywood, FL	Ongoing	Ongoing

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Senior Project Manager. Tetra Tech is providing surveying, geotechnical evaluations, design, permitting, and construction administration services on multiple projects concurrently. To date, Tetra Tech's program project comprises over 225,000 LF (42 miles) of water main replacement, over 1,000 service connections, new fire hydrants, conflict resolution for numerous underground and overhead utilities, permitting through multiple regulatory agencies, and construction within schedule and budget. The projects are also State Resolving Funded (SRF) projects, which included document control, payroll reviews, and compliance reviews for Davis Bacon, American Iron and Steel (AIS), and other requirements.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Skyview Utilities Water System Improvements, City of Lakeland, FL	PROFESSIONAL SERVICES 2016	CONSTRUCTION 2016
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Senior Project Manager. Construction administration project phase, which the City of Lakeland and Polk County, along with CDBG funding, are making improvements to the Skyview Utilities system to meet the City's acceptance standards for taking over ownership of the water utility systems. Water system improvements consisted of grouting and abandonment of 6,550 feet of asbestos cement water main; 7,900 feet of 6-inch DR-18 PVC water main; 130 new single and double water services; and 11 new fire hydrants. Bidding services included preparation of bid documents, pre-bid meeting, bid questions/ clarifications, bid tabulation, and evaluation with recommendation of award. Construction administration services included shop drawing review and approvals, monthly progress meetings, review of contractor pay applications, RFIs, requests for proposals, change orders, and CDBG funding assistance. In addition, field directives, inspections, As-Built review, record drawing production, and FDEP clearances and certifications were performed. Total construction cost: $9,315,519 for the wastewater and water system improvements.

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Lift Station 42P-47P and 54P Gravity Sewer Rehabilitation, Polk County, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Senior Project Manager and Engineer of Record. WIFIA-funded gravity sewer rehabilitation project including cleaning and CCTV of 2,040 linear feet (LF) of 8-inch gravity mains, replacement of approximately 136 feet of 8-inch gravity sewer mains (last runs into the lift station site) and 2 manholes (up to 14-feet deep), 1,718 feet of 8-inch gravity sewer mains CIPP lined, coating of 64 VF of manholes, and 20 LF of 4-inch force main removed and replaced with DR-18 PVC force main. Coordination with Kissimmee Utility Authority for power pole relocations for poles in close proximity to the manholes and gravity main repairs. The project also included construction administration services with shop drawing reviews, site inspections, RFIs, schedule reviews, WIFIA-funding compliance including Davis Bacon and American Iron and Steel compliance, change order reviews, progress meetings, and record drawings preparation.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Mark McKinney, PE	**Cybersecurity & AWIA Compliance**	**21**	**<1**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BA, Criminology & Criminal Justice, University of Alabama MSIM, Park University	CISSP-ISSAP; NSA-IAM; CISA, CRISC; CEH; CTIA, Certified Threat Counter-Intelligence Analyst; CFE, CCFE, CDFE, CFI, CDCMP, VCP6-DCV, CNMP; AWS Security Operations; Certified Anti-Terrorism Specialist; PSP, CPP, ASI H3 Physical Security Operations, ALICE; Certified Field Protection and Safety Officer, US EPA

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. McKinney serves as the Director of Cyber and Physical Security for Tetra Tech's US infrastructure division. He is a recognized expert in technology, cybersecurity, and risk management and has more than 36 years of experience in the management, design, and certification of information and cybersecurity programs and systems, including active and passive measures designed to prevent unauthorized access to facilities, materials, information, equipment, and personnel. His extensive portfolio includes the development of resilient multi-vertical technology and security architectures within the water/wastewater, energy, transportation, commercial, nuclear, and defense industries.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
America's Water Infrastructure Act of 2018 (AWIA 2018), US Senate Committee of Environment and Public Works, Washington, DC	PROFESSIONAL SERVICES 2018	CONSTRUCTION N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☐ PROJECT WORKED WITH CURRENT FIRM

Program Manager, SME.. Participated in the work groups and draft committees to amend the Clean Water Act and Safe Drinking Water Act (Section 1433(a)) to require community water systems to develop or update risk and resilience assessments and emergency response plans.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Water and Electric System Risk and Resiliency Assessment and Emergency Response Plan for Water, Electric, Sanitary, and Broadband Utilities, Jefferson County Public Utility District, Port Townsend, WA	PROFESSIONAL SERVICES 2021	CONSTRUCTION N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Program Manager. Water system risk and resilience assessment addressing IT and SCADA cybersecurity, physical security, and dependency/proximity vulnerabilities. Facilitating the process of identifying system dynamics and interrelationships, prioritizing critical facilities, defining potential threats to the system. Analyzing consequences of malevolent acts and developed physical, electronic, operational and management safeguards to protect the system and developing mitigation measures to reduce risk and increase resilience.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
AMI/SCADA Security Assessment, Orlando Utilities Commission, Orlando, FL	PROFESSIONAL SERVICES 2014	CONSTRUCTION N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Program Manager./Security Planner. Performed the first qualified security assessment of a new smart grid, including the Elster MDM, MV90 data collectors, substations, neighborhood mesh collectors, and Zigbee ESI for a municipal electric utility.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Cybersecurity Master Plan, Confidential Client, VA	PROFESSIONAL SERVICES 2019	CONSTRUCTION N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Program Manager. Developed the comprehensive Cybersecurity Master Plan for a large electric and water utility. Plan included all electric and water operations, corporate operations, SCADA, and CIP compliance.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Water Cybersecurity, City of Houston, Houston, TX	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	
Cybersecurity Program Manager. Tetra Tech performed an assessment of the City's existing SCADA network for both Drinking Water Operations and Wastewater Operations Groups, including source water supply systems, for compliance with current cybersecurity best practices and guidance.		

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Quintin Biagi, RA, LEED AP BD+C	**Architecture**	**34**	**11**

15. FIRM NAME AND LOCATION

Tetra Tech (Louisville, KY)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
Bachelor of Architecture, University of Kentucky	Registered Architect, Florida, No. 94240, 2008; National Council of Architectural Registration Boards, No. 43,061, 1992; LEED AP® BD+C, Center for Green Schools™ at the U.S. Green Building Council®, No. 10424763, 2010

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Biagi, a Senior Project Architect, has been in the architectural business for 34 years. He has demonstrated great skill at listening to and evaluating clients' needs to create informed designs, which address the priorities of their projects. Coordinating team efforts between all the design disciplines through all design phases, he is able to offer solutions tailored to each clients' unique program requirements and needs.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Groundwater Replenishment Advanced Water Purification Plant, City of Clearwater, Clearwater, FL	2017	2017
(3) Brief Description and Specific Role	☑ PROJECT WORKED WITH CURRENT FIRM	

Architect of Record. Responsible for the design of a Full Advanced Treatment (FAT) for indirect potable reuse program which will be the first facility of its kind in the State of Florida. The program includes an administration and operation building as well as a learning center to provide community education for the plant that utilizes tertiary treated reclaimed as a water source for the purification treatment processes, which include pressure-driven ultrafiltration, reverse osmosis, UV/peroxide AOP, membrane contactors, and various post treatment chemical feeds for stabilization and assimilating the treated water to the quality of the native groundwater. The project will incorporate an open platform UF membrane skid design that is directly coupled to the Reverse Osmosis process.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Alternative Water Supply (Design/Build), City of Tarpon Springs, Tarpon Springs, FL	2015	2015
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Architect. Responsible for conceptual design, final design, and construction services related to a 6.4 MGD brackish water reverse osmosis water treatment facility on a green-field site. The project was delivered under the design build approach and design responsibilities includes brackish supply wells, pretreatment and RO treatment facilities, post treatment and finished water storage and pumping buildings.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
East Service Area Pump Station, Orange County, FL	2014	2014
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Architect. The 12,288-square-foot pump facility provides new pump rooms for PW and RW pumps, PW sodium hypochlorite room, generator, electrical rooms, and administration offices.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Cypress Lake Water Treatment Plant, Toho Water Authority, Kissimmee, FL	2014	2014
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Architectural Team Leader. Responsible for the preparation of the conceptual and preliminary design reports, cost budgets, and schedules for a proposed 34.0 MGD regional reverse osmosis water treatment supply facility, raw water supply well field, and deep injection well disposal system.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Pompano Beach Water Treatment Plant Structural Retrofit Design, City of Pompano Beach, Pompano Beach, FL	PROFESSIONAL SERVICES 2017	CONSTRUCTION 2017
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Architect of Record. Provided design drawings for five existing buildings to be strengthened to meet the current hurricane wind forces. The buildings were constructed from 1960 through 1988 and are critical to the communities drinking water supply and needs to remain operational during and after a major storm event. The existing drawings were reviewed and a field investigation was performed to verify the information on the record drawings and document as-built information that was not available. After the investigation phase, a retrofitting design was performed to strengthen the buildings for 180 mph design wind speeds.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Jason Burkett, PE	**Structural Engineering**	**15**	**10**

15. FIRM NAME AND LOCATION

Tetra Tech (Louisville, KY)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
MS / BS, Civil Engineering (Structures and Foundations), University of Central Florida	Professional Engineer: FL, No. 69879

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Burkett is a structural engineer who is experienced with many structural systems including composite steel, prestressed/precast concrete, concrete framing, steel framing, masonry, timber, tilt-up concrete panels, light-gauge steel, and aluminum. He has completed water treatment facilities projects for the federal government, Department of Defense, and local municipalities, plus in industrial, commercial, residential, healthcare, education, aviation, and marine construction markets. His work has also included roofing components, hurricane shelters, high-velocity hurricane zones, renovations, additions, and investigations.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Malcolm Road Water Supply Facility (WSF), Orange County Utilities, Orange County, FL	2014	2016
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Engineer of Record. Design of water treatment building that includes space for chemical storage, electrical equipment, generator, and pipe gallery. Building construction consists of concrete masonry unit walls, hollow core roof diaphragm, and cold formed steel trusses.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Groundwater Replenishment Advanced Water Purification Plant, City of Clearwater, Clearwater, FL	2015	2017
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Engineer of Record. Responsible for the design of a 3 MGD Advanced Water Purification Plant (AWPP) to treat reclaimed water to a purified water quality with the objective of replenishing the aquifer within the City using four aquifer recharge wells. Structures included a main process building, administration building, pretreatment basin, well pads, pump stations, and bulk chemical storage.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Orange County Eastern Water Treatment Plant Expansion, Orlando, FL	2012	2012
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Lead Structural Engineer. Responsible for the design of five new building structures, including standby power building, chemical feed building, high-service pump building, well houses, transfer pump station, and other miscellaneous structural additions.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Reverse Osmosis Water Treatment Plant, Punta Gorda, FL	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Engineer of Record. Responsible for the design of the process structures and building for the new 4 MGD reverse osmosis (RO) water treatment plant. Structural design includes a new CMU building for the RO equipment, clearwell basin, degasification equipment support, chemical storage/containment slabs, and generator slab.

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Reverse Osmosis Water Treatment Plant, Tarpon Springs, FL	2013	2013
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Lead Structural Engineer. Responsible for the design of all the process structures and buildings for the new reverse osmosis water treatment plant.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
David Burger, PE	**Electrical and I&C**	**32**	**7.5**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Electrical Engineering, Gannon University	Professional Engineer: FL, No. 47146

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Burger has 32 years of experience in the design of electric power, controls, instrumentation, SCADA, telemetry, fire alarm, lighting, lightning protection, grounding, and gas detection for water/wastewater, commercial, industrial, and military projects working for municipal, state and federal, commercial and industrial clients. His experience includes lift stations, master pump stations, reverse osmosis, and surface and well water treatment as well as CSO and wastewater treatment.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Western Reuse Pump Station, Toho Water Authority, Kissimmee, FL	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Electrical Engineer. Tetra Tech serves Tohopekaliga Water Authority as the design engineer for the Western Reuse Service Area Storage and Pumping Facility project. The project is designed to provide 4.00 MGD, based on average day demand of reclaimed water storage and pumping facilities near the Champions Gate Development. The facility is designed to provide 6.68 MGD of reclaimed water at maximum day demand. The facility will be a major distribution center that provides reclaimed water directly to the customers at pressures that will minimize the need for booster pumping.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Malcolm Road Water Supply Facility (WSF), Orange County Utilities, Orange County, FL	2014	2019
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Senior Electrical Engineer. Preliminary design of a 7.6 MGD green-field potable water treatment facility. Currently serving as QA/QC reviewer for the project during the final design phase. The project includes development of a 64-acre site that is situated near a large scale rapid infiltration basin system. The treatment facility will consist of six lower Floridian aquifer supply wells, a 2.0 MG ground storage tank, a high service pump system within a treatment facility building, and related chemical storage and feed facilities.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
4.0 MGD Reverse Osmosis Water Treatment Plant, City of Punta Gorda, Punta Gorda, FL	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Senior Electrical Engineer. Services to be provided for the project include pilot testing, final design, permitting, and construction administration for the proposed 4.0 MGD expandable to 8.0 MGD reverse osmosis treatment facilities. The proposed improvements include conversion of two existing ASR wells to be used for RO supply wells and construction of an on-site deep injection well. The proposed RO treatment facilities will be located on undeveloped land at the existing surface water treatment plant site.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
East Service Area Potable and Reclaimed Water Storage and Re-pump Facility, Orange County, FL	2014	2014
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Senior Electrical Engineer: Provided design oversight, duct-bank layouts, P&ID schematic plans, and QA/QC for new site with control building, lift station, water and reclaim water pump systems and storage tanks, gated access and control, security, SCADA, site lighting, electrical service, coordination with electric utility, and generator backup.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT			
e	(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	Cypress Lake Water Treatment Plant, Wellfield, and Raw Water Main Preliminary Design Report, oho Water Authority Kissimmee, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION Ongoing
	(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM
	Senior Electrical Engineer. Process selection and preliminary design of a 34.0 MGD alternative water supply project to supply a consortium of five water utilities in the Central Florida region. The proposed project is anticipated to be the first large capacity in-land brackish water RO treatment facility in Florida and one of the largest such facilities in the country. The proposed treatment process will provide desalination treatment of brackish groundwater using a high recovery reverse osmosis treatment process to maximize the use of supply resources and minimize costs of reverse osmosis concentrate disposal. The project includes all aspects of raw water supply, treatment process, finished water conveyance, and concentrate disposal.		

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Michael Sutherland, LEED AP BD+C	**HVAC / Plumbing**	**11**	**4.5**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Mechanical Engineering, University of Central Florida	Professional Engineer: FL, No. 78587

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Sutherland has 11 years of engineering and management experience in building mechanical systems for municipal, federal, commercial, and industrial clients. His specific design experience includes heating, ventilation, and air conditioning (HVAC), plumbing design, fire protection design, LEED design submission, drafting, and construction administration for water and wastewater treatment plants and various other projects. Mr. Sutherland has experience in the design and installation of compressed air systems, chillers, cooling towers, ventilation systems, fueling systems and odor control systems. His designs include system expansions and total replacement and new facility construction.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Groundwater Replenishment Advanced Water Purification Plant, City of Clearwater, Clearwater, FL	2015	2017
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Mechanical Engineer. Mr. Sutherland is serving as mechanical engineer of record for the HVAC, Plumbing, and Fire Protection design of a new 13,000 sq.ft advanced water purification plant with connected 9,000-sf office/administration area. Plant mechanical design consists of ventilation fans and unit heaters. The office administration area mechanical design consists of an air-cooled variable refrigerant flow heat pump system with ducted concealed fan coil units that are supported by a dedicated outside air system.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Malcolm Road Water Supply Facility, Orange County Utilities, Orange County, FL	2020	2020
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Engineer of Record. Mr. Sutherland is serving as mechanical engineer of record for the HVAC and Plumbing design of the new water supply facility. The project consists of a high service pump building including chemical storage/metering rooms. The high service pump building includes administration air conditioning systems, plumbing systems, industrial ventilation systems, and fuel system design.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
DC Water, Tunnel Dewatering Pump Station / Enhanced Clarification Facility, Blue Plains, Washington, DC	2016	2016
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Mechanical Engineer. Mr. Sutherland served as the lead building mechanical model coordinator and technical reviewer for the multiple phase Design/Build project for buildings in support of the DC Water combined sewer overflow treatment project. The design includes a 160-foot-deep tunnel dewatering pump station and associated buildings for the treatment of combined sewer overflow.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Cypress Lake Water Treatment Plant, Wellfield, and Raw Water Main Preliminary Design Report, Toho Water Authority, Kissimmee, FL	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Senior Electrical Engineer. Process selection and preliminary design of a 34.0 MGD alternative water supply project to supply a consortium of five water utilities in the Central Florida region. The proposed project is anticipated to be the first large capacity in-land brackish water RO treatment facility in Florida and one of the largest such facilities in the country. The proposed treatment process will provide desalination treatment of brackish groundwater using a high recovery reverse osmosis treatment process to maximize the use of supply resources and minimize costs of reverse osmosis concentrate disposal. The project includes all aspects of raw water supply, treatment process, finished water conveyance, and concentrate disposal.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
East Service Area Potable and Reclaimed Water Storage and Re-pump Facility, Orange County, FL	PROFESSIONAL SERVICES 2014	CONSTRUCTION 2014
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM
Senior Electrical Engineer. Provided design oversight, duct-bank layouts, P&ID schematic plans, and QA/QC for new site with control building, lift station, water and reclaim water pump systems and storage tanks, gated access and control, security, SCADA, site lighting, electrical service, coordination with electric utility, and generator backup.		

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Dan Zrallack, PE	**Senior Geotechnical Engineer**	**24**	**24**

15. FIRM NAME AND LOCATION

Ardaman & Associates: A Tetra Tech Company (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Civil Engineering, University of Central Florida	Professional Engineer: FL, No. 63911

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Zrallack has more than 24 years of experience in geotechnical and environmental engineering and in construction materials testing and inspections. He serves as Branch Manager and Senior Project Engineer for various projects, including bridge replacements and new bridge designs, utility services engineering, stormwater management and design projects, roadway soil surveys, subsurface soil explorations, retention pond evaluations, construction materials testing and inspections, quality control, and structural steel and threshold inspection projects.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Geotechnical Engineering and Construction Materials, Testing Services, City of Port St. Lucie, Port St. Lucie, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Mr. Zrallack provides full service geotechnical engineering services on a wide range of projects including roadways, bridges, culvert replacements, water and wastewater treatment plants, parking garages and buildings. Some of the relevant projects include the following:

- Various Roadway Projects including Becker Road Phase III, California Boulevard Turn lanes, Melaleuca Blvd.
- Roadway Bridges and Pedestrian Bridges at Crosstown Pkwy., Savona Blvd., Darwin Blvd. & Selvitz Rd.
- Various Drainage Canal Stabilization Projects (D-17 Canal, D-9 Canal, E-8 Canal & Kingsway Waterway)
- Various Sidewalk Projects (Rosser Blvd., Savona Blvd. Selvitz Road, Bayshore Blvd., Cameo Blvd. & Village Green)
- Port St. Lucie Civic Center, Digital Domain and Torrey Pines Institute

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Continuing Service Contract for Geotechnical Engineering and Construction Materials Testing Services, St. Lucie County, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Mr. Zrallack provides full service geotechnical engineering services on a wide range of projects including roadways, bridges, culvert replacements, water and wastewater treatment plants, parking garages and buildings. Some of the relevant projects include the following:

- Midway Road Widening Project from West of Selvitz Road to South 25th Street
- North 2nd Street Roadway and Drainage Improvements
- Lakewood Park Various Culvert Replacements (Palomar, Winter Garden Pkwy., Sebastian Rd. and Lakeland Rd.)
- San Lucie, Harmony Heights and Paradise Park Master Drainage Plan Improvements
- Angle Road Pavement Evaluation and South Rock Road Extension Soil Survey
- Various Culvert Replacements (Midway Road, Sneed Road, Shinn Road, Russo Road, Christensen Road, etc.)
- SLC International Airport Runway 9L-27R
- aylor Creek Dredged Material Maintenance Area

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Continuing Service Contract, Geotechnical and Environmental Engineering & Construction Materials Testing & Inspections, Indian River County, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Mr. Zrallack provides full service geotechnical and environmental engineering services and construction materials testing and inspection services on a wide range of projects including roadways, bridges, water and wastewater treatment plants, parking garages and buildings.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
City of Fort Pierce, Continuing Services Contract for Geotechnical Engineering and Construction Materials Testing, Fort Pierce, Florida	PROFESSIONAL SERVICES 2019	CONSTRUCTION N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Mr. Zrallack provides full service geotechnical engineering services on a wide range of projects including utility engineering, stormwater management, roadways, bridges, culvert replacements, water and wastewater treatment plants, parking garages and buildings. Ardaman's services include subsurface exploration and geotechnical engineering analyses along with construction materials testing of soils, concrete, pavement materials (asphalt, base, and subgrade), and masonry units. Projects include utility services, roadways, stormwater systems, parking garages and buildings. Some relevant projects include the following:

- A1A Reconstruction Blue Heron Blvd. to South Causeway
- 13th Street Reconstruction
- 10th Street Reconstruction
- Moore's Creek Retrofit and Roadway Bridges
- Melody Lane Fishing Pier
- 2nd Street Reconstruction

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Martin County, Continuing Service Contract for Geotechnical Engineering and Construction Materials Testing Services, Martin County, Florida	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Mr. Zrallack provides full service geotechnical engineering services on a wide range of projects including utility engineering, stormwater management, roadways, bridges, culvert replacements, water and wastewater treatment plants, parking garages and buildings. Ardaman's services include subsurface exploration and geotechnical engineering analyses along with construction materials testing of soils, concrete, pavement materials (asphalt, base and subgrade), and masonry units. Projects include utility services, roadways, stormwater systems, parking garages and buildings. Some relevant projects include the following:

- Britt Road Ridge Replacement & Neighborhood Improvements.
- Willoughby Creek – Various drainage and infrastructure improvements.
- Heritage Ridge Neighborhood Improvements – Various drainage, infrastructure improvements and resurfacing.
- Tropical Farms Neighborhood Improvements – Various drainage, infrastructure improvements and resurfacing.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Lawrence Jenkins, PSM	**Surveying & GIS**	**37**	**30**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
Valencia Community College; Mid-Florida Technical Institute	Professional Surveyor and Mapper: FL, No. 5364

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Jenkins has been a resident of Florida for the past 34 years and has practiced land surveying since 1984 in both office and field. His experience includes route/right-of-ways surveys, mortgage surveys, topographic surveys, glo/sectional surveys, construction layout, metes and bounds surveys, as-built surveys, easement vacations, and electrical field book collection. As field supervisor and senior office survey manager, Mr. Jenkins is involved in all aspects of surveying.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Miscellaneous City Route Surveys, Various Locations, FL	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Surveyor. Led by Mr. Jenkins, Tetra Tech has provided Water and Wastewater surveying services for multiple Florida municipalities including: Orange County Utilities, City of Bartow, Marion County, Palm Bay, Lake City, Port St. Lucie, Deltona, Clermont, St. Johns County, and Toho Water Authority.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Lift Station 201 & 205 Force Main Replacement, City of Orlando, Orlando, FL	2018	2018
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Surveyor. Topographic rout survey for approximately 5,300 LF across City of Orlando property for the replacement of force mains between lift stations 201, 205 and 215 with an 8-inch and 10-inch force main. Surveying services included research of title information pertaining to existing easements and deeded right-of-way and related pertinent right-of-way maps, maintenance maps, and plats. Coordinated with subcontractors for the underground utility locations, soft digs, and GPS control.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
15 Pump Stations, Orange County Utilities , Orange County, FL	2018	N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Surveyor. Surveying Services for the OCU wastewater R/R program for 10 duplexes and 5 triplex pump stations and the adjacent roadways. Surveying services included Boundary and Topographic surveys, including underground utility locates and subsurface utility exploration (SUE) for use in preparing preliminary site plans for each station.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
WTPs Treatment Improvements, City of Deltona, Deltona, FL	2014	2014
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Surveyor. Surveying Services for the WTP Treatment Improvements located at twelve (12) active sites. the topographic surveys for a 12 site The survey included traditional survey methods, GPS and subsurface Ground Penetrating Radar (GPR) and Electromagnetic induction (EM) to verify underground locations of unknown private/public utilities.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Wastewater Force Main System Phase 1, City of Orlando, Orlando, FL	PROFESSIONAL SERVICES 2019	CONSTRUCTION 2019
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Surveyor. Surveying Services for approximately 11,00 LF (2 Miles) across City of Orlando rights-of-way from lift Station 2 to the existing 30-inch force main on Illinois Street and Palm Drive. A topographic survey along the proposed corridor for the preparation of construction drawings within the limits of the project. Obtained Title information pertaining to existing easements and deeded right-of-way and related pertinent right-of-way maps, maintenance maps, plats, and similar documents. Coordinated with subcontractors for the underground utilities and soft digs.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Edward Wills, PE	**Construction Management & CEI**	**19**	**5**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Environmental Engineering, University of Central Florida	Professional Engineer: FL, No. 69065

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Wills specializes in environmental engineering and has experience in assisting clients in areas of permitting, conceptual and preliminary design, final design, and engineering services during construction. Mr. Wills provides construction administrative and resident project representative services. His duties include assisting in responding to requests for information, developing and evaluating cost changes for field modifications, developing meeting agenda and minutes, organizing progress meetings, reviewing pay applications, reviewing construction activities and mechanical installations, reviewing the construction schedule, and preparing the closeout documentation including punch list, as-builts, record drawings, as well as operation and maintenance manuals.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Eastern Water Reclamation Facility Expansion – Replacement Filters, City of Clermont, Clermont, FL	PROFESSIONAL SERVICES 2019	CONSTRUCTION 2020
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Responsible for the construction administration including include assisting in responding to requests for information, developing and evaluating cost changes for field modifications, developing meeting agenda and minutes, organizing progress meetings, reviewing pay applications, reviewing construction activities and mechanical installations, reviewing the construction schedule, and preparing the closeout documentation including punch list, as-builts, and Record Drawings. Scope of services include for the WRF Expansion Filter Project includes the replace the existing Duna-Sand filters with a cloth media type filter system.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Cypress West Water Reclamation Facility Upgrade, Toho Water Authority, Kissimmee, FL	PROFESSIONAL SERVICES 2016	CONSTRUCTION 2016
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Responsible for providing assistance with the specifications, drawings, equipment selection and process design including the yard piping and process equipment evaluation and recommendation. Scope of services included Upgrade and expansion of an existing facility included: additional process aeration blowers; additional internal recycle pumps; cloth filtration facilities; new dual-chamber chlorine contact tank with effluent transfer pumps; new sodium hypochlorite storage and feed facilities; two 7.5 MG wet-weather storage tanks; new reclaimed water pumping facility; blowers and coarse bubble aeration system s to convert two existing package treatment structures into aerated sludge holding basins; and various appurtenant facilities such as an electrical building and standby power system. Iron Bridge Regional Water Reclamation Facility, City of Orlando, FL. 2015. Project Engineer. Responsible for providing the preliminary and final design services and construction phase services Scopes of services include installation of replacement air release valves for the wetlands transmission main. Scope of services include upgrade of the air release valves, and associated piping, valves and vaults.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Conserv II Water Reclamation Facility, City of Orlando, Orlando, FL	PROFESSIONAL SERVICES 2014	CONSTRUCTION 2014
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Engineer. Provided construction administrative services including answering requests for information, developing and evaluating cost changes for field modifications, reviewing and responding to meeting minutes, reviewing construction activities and mechanical installations. Scopes of services include upgrade of the City's Water Conserv II WRF Facilities including blower replacement, replacement of the aeration basin diffusers, new air piping, aeration basin structural repairs, aeration basin structural modifications, new IR pumps and piping, clarifier mechanism upgrades; intermediate pumping modifications, and replacement of influent piping.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Eastern Water Reclamation Facility Expansion, Phase IV B, Orange County Utilities, Orlando, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION Ongoing

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM

Project Engineer. The project consisted of professional services in connection with the design, permitting, bidding, and construction for the expansion of the Eastern Water Reclamation Facility Expansion. Mr. Wills assisted in the design and development of preliminary and final design drawings and specifications for the addition of a reuse ground storage tank, reuse effluent pumping station, associated yard piping, and transmission pipelines to and from the site.

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Water Reclamation Facility Expansion, City of Apopka, Apopka, FL	PROFESSIONAL SERVICES 2017	CONSTRUCTION 2019

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM

Resident Project Representative. Mr. Wills provided on-site construction phase services, including assisting in responding to requests for information, developing and evaluating cost changes for field modifications, developing meeting agenda and minutes, organizing progress meetings, reviewing pay applications, reviewing construction activities and mechanical installations, reviewing the construction schedule, and preparing the closeout documentation including punch list, as-builts, record drawings, and operation and maintenance manual.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Douglas Dufresne, PG	**Hydrogeological & Water Use Permitting**	**32**	**22**

15. FIRM NAME AND LOCATION

Ardaman & Associates: A Tetra Tech Company (Port St. Lucie, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
MS, Geology, University of Florida B.S., Earth Sciences, University of New Orleans	Professional Geologist: FL No.1527

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Douglas Dufresne, with Ardaman & Associates, Inc., has provided professional geological and hydrogeological services to municipalities, water and wastewater utilities, engineering companies, and private industry for over 32 years. Services he provided include geological and hydrogeological studies, groundwater flow modeling, contaminant transport modeling, groundwater monitoring, water resource assessment, water use permitting, well and wellfield design, well construction observation services, aquifer performance testing, alternative water supply planning, aquifer storage and recovery, deep injection wells, environmental site assessments, and expert witness services. He has presented and published over 40 technical papers at several regional, national, and international conferences on various hydrogeological topics.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Richard McLaughlin Water Supply Well RM-3, Toho Water Authority, Kissimmee, FL	2019	N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Project Director. Mr. Dufresne was the project director for the Toho Water Authority Floridan aquifer production well project with a design capacity of 3,500 gpm, 24-inch diameter casing set to 320 feet and a total depth of 600 feet. The project encompassed well design, construction management and observation, and testing of the well, which included step drawdown test, constant rate discharge testing, geophysical and video logging, water quality testing, plumbness and alignment testing, and preparation of a well completion report.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Well F8 Evaluation, Testing and Rehabilitation, City of Port St. Lucie, Port St. Lucie, FL	2021	N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Project Director. Mr. Dufresne was project director for the project including the following hydrogeological services: review of existing water quality data, well and total wellfield pumping data, and original logging; well testing and remediation oversight; well testing including geophysical logging, flow logging, video logging, packer testing, aquifer performance testing, specific capacity testing, and water quality testing; and well remediation including back plugging, acidization, and development.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Wellfield Management Plan, Prineville and JEA Floridan Aquifer Wellfields, City of Port St. Lucie, Port St. Lucie, FL	2016	N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Senior Project Manager. Mr. Dufresne was the senior project manager for the project which was designed to help the City operate and maintain their wellfields and prioritize reduction of chloride concentrations in routinely pumped wells. The project addressed the City's objectives to maintain and increase production capacity of existing wells, to stabilize raw water quality, and to minimize drawdown through wellfield management.

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Westport Reclaimed Water ASR Well Re-permitting, Port St. Lucie, FL	2016	N/A

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE — ☑ PROJECT WORKED WITH CURRENT FIRM

Principal-in-Charge. Mr. Dufresne was the principal-in-charge of the Westport Reclaimed Water Aquifer Storage and Recovery Well project, which included the design of an aquifer storage and recovery well and monitoring system; preparation of permit application, extensive area of review, and supporting documentation; and responding to requests for additional information. The system is designed to store a target storage volume of 420 million gallons. Ardaman re-permitted the ASR well in 2016.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT			
	(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	Center Road Deep Injection Well Class I Operation Re-permitting Venice, FL	PROFESSIONAL SERVICES 2015	CONSTRUCTION N/A
	(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM
e	*Project Director*. Mr. Dufresne was the project director for the Center Road Deep Injection Well Operation Repermitting for Sarasota County. The compliance permit report included updating the well survey for the area of review; providing maps and cross-sections; analysis of twenty (20) years of operational and monitoring data including injection pressures, injection flow rates, injection pumping volume, annular pressure, groundwater level monitoring, groundwater quality monitoring for 20 different parameters, and specific injectivity; and updating the financial assurance requirements.		

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Bruce Lafrenz, PG	**Hydrogeological & Water Use Permitting**	**35**	**19**

15. FIRM NAME AND LOCATION

Tetra Tech (Orlando, FL)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
MS / BS, Geology, University of Florida	Professional Geologist: FL, No. 1228

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Lafrenz has managed and executed numerous studies of groundwater resource development, testing, protection, simulation, permitting, and monitoring. He has particular expertise in computer modeling of groundwater related problems and in developing computer applications for hydrogeologic and engineering solutions. Mr. Lafrenz has been qualified and has testified in administrative hearings and courts of law as an expert in: geology; hydro-geology; well and wellfield siting and design; aquifer performance test design, implementation and analysis; water use permitting and regulation; groundwater flow and transport modeling; water use impacts mitigation; contamination assessment and cost-to-correct estimation; and mineral resource assessment.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Sediment Sampling for Turning Basin Dredging Permitting, City of Tarpon Springs, Tarpon Springs, FL	PROFESSIONAL SERVICES: 2020	CONSTRUCTION: N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Hydrogeologist. Tetra Tech provided as geologist to record coring of sediments in an area of the Anclote River proposed for deepening of a turning basin. Field geologist collected and classified core samples, prepared samples for transport to a geotechnical laboratory (AAI – Orlando), and prepared a summary report of field activities and laboratory results.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Sunburst WTP Lower Floridan Aquifer Testing, and Disston Avenue LFA Exploratory Testing, City of Clermont, Clermont, FL	PROFESSIONAL SERVICES: 2018	CONSTRUCTION: N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Hydrogeologist. Two projects to investigate using the Lower Floridian aquifer as an alternative source of water for potable supply. Our work comprised design, bidding, well-site observation, lithologic and groundwater sampling, drill-stem sampling, observation and interpretation of geophysical and borehole video logs, analysis of collected data, aquifer performance testing, and summary reporting for two exploratory/test production wells at the Sunburst WTP and for one well at the Disston Avenue site, Test/production wells were constructed to total depths between 1,710 and 1,760 feet below land surface. Project included submittal of well construction and testing summary report and recommendations for development (or not, for the Disston site) of the LFA as a water supply source.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Consumptive Use Permitting, City of Clermont, Clermont, FL	PROFESSIONAL SERVICES: 2020	CONSTRUCTION: N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Hydrogeologist. Optimized ground-water supply pumping among Upper Floridan aquifer (UFA) and Lower Floridan aquifer (LFA) wells to minimize apparent impacts at Minimum Flows and Levels (MFL) regulatory constraint points; predicted drawdown impacts using MODFLOW groundwater model, completed consumptive use permitting application for submittal to the St. Johns River Water Management District (SJRWMD).

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Lower Floridan Aquifer Testing, City of Clermont, Clermont, FL	PROFESSIONAL SERVICES: 2018	CONSTRUCTION: N/A
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Technical Lead. Performed as technical lead for well location evaluation, design of Floridan aquifer production and observation wells, well and aquifer testing plan design, geophysical log interpretation, flow zone characterization, aquifer test analysis, performed MODFLOW simulations to estimate LFA yield limitations.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Well Construction and Aquifer Performance Testing of the Claiborne Aquifer, Northwest Florida Water Management District, FL	PROFESSIONAL SERVICES 2018	CONSTRUCTION 2018

(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Senior Hydrologist. Managed the project and lead well construction oversight, aquifer testing, data analysis, and reporting. Tetra Tech oversaw construction of two Claiborne aquifer production wells and two surficial aquifer monitoring wells for the Northwest Florida Water Management District (NWFWMD). This project provided initial testing of the Claiborne aquifer within the Jackson Blue Spring contribution area for suitability as an alternative water supply. Testing showed that the aquifer was fully confined throughout the duration of the one-day constant rate discharge test (CRDT).

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS OF EXPERIENCE	
		a. TOTAL	b. WITH FIRM
Jarret Kinslow, PE	**Water Supply & Treatment**	**21**	**21**

15. FIRM NAME AND LOCATION

Tetra Tech (Atlanta, GA)

16. EDUCATION	17. PROFESSIONAL REGISTRATION / CERTIFICATION
BS, Environmental Engineering, University of Central Florida	Professional Engineer: FL, No. 63900

18. OTHER PROFESSIONAL QUALIFICATIONS

Mr. Kinslow has extensive experience in the implementation of water treatment projects and alternative water supply programs, with a combined experience of more $500M in constructed facility cost. He is an active member of the American Water Works Association (AWWA) and serves on multiple technical committees, as well as the American Membrane Technology Association (AMTA) and the Southeast Desalting Association (SEDA) where he serves on the Board of Directors and is also a past president. He has authored and coauthored numerous professional papers related to conventional and advanced water treatment projects and technologies.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Central Water Integration Project (CWIP), San Antonio Water System San Antonio, San Antonio, TX	Ongoing	Ongoing
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager/Design Lead for Treatment Facilities. Treatment facilities, conveyance pipelines, and improvements to existing pump stations and distribution facilities to integrate a new 48 MGD potable water supply source into the utility's potable water distribution system. The supply source for this project consisted of a $900M P3 water supply project that will import groundwater from a wellfield that is 142 miles from the City of San Antonio.

b

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Groundwater Replenishment Advanced Water Purification Plant, City of Clearwater, Clearwater, FL	2015	2017
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Manager and Engineer of Record. Responsible for the design and permitting of a full-scale Full Advanced Treatment for Indirect Potable Reuse program that will be the first facility of its kind in the State of Florida. The program utilized tertiary treated reclaimed as a water source for the purification treatment processes, which include pressure-driven ultrafiltration, reverse osmosis, UV/peroxide advanced oxidation processes, membrane contactors, and various post treatment chemical feeds for stabilization and assimilating the treated water to the quality of the native groundwater. The project incorporated an open platform ultrafiltration membrane skid design that is directly coupled to the reverse osmosis process.

c

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION
Cypress Lake Water Treatment Plant, Toho Water Authority, FL	2014	2014
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑ PROJECT WORKED WITH CURRENT FIRM	

Project Engineer. Responsible for the process selection and preliminary design of a 34 MGD alternative water supply project to supply a consortium of five water utilities in the Central Florida region. The proposed project is anticipated to be the first large capacity inland brackish water reverse osmosis treatment facility in Florida and one of the largest such facilities in the country. The proposed treatment process will provide desalination treatment of brackish groundwater using a high recovery reverse osmosis treatment process to maximize the use of supply resources and minimize costs of reverse osmosis concentrate disposal. The project includes all aspects of the raw water sup-ply, treatment process, finished water conveyance, and concentrate disposal.

E. RESUME OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

d

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
Peer Review of Blowdown Disposal Improvements, Collier County, Collier County, FL	PROFESSIONAL SERVICES 2015	CONSTRUCTION 2015
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Manager. Peer review of construction plans and specifications and previous studies of an acid dosing system to reduce the pH of scrubber blowdown and allow blending with membrane concentrate for disposal via deep injection well. Improvements at both the South County Regional water treatment plant and North County regional water treatment plant were evaluated. The project included sampling and characterization of the blowdown water quality, benchtop trials, and desktop analysis to confirm the acid doses required to obtain the target adjusted pH of the blowdown prior to blending. Geochemical modeling was also conducted for the blended blowdown and concentrate process streams to provide an indication of the potential operational impacts to the County's deep injection wells. Tetra Tech provided a summary technical memo of findings from the peer review and possible optimizations that could be considered for future implementation.

e

(1) TITLE AND LOCATION	(2) YEARS COMPLETED	
LFA Alternative Water Supply Feasibility Study, City of Deltona, Deltona, FL	PROFESSIONAL SERVICES 2016	CONSTRUCTION 2017
(3) BRIEF DESCRIPTION AND SPECIFIC ROLE	☑	PROJECT WORKED WITH CURRENT FIRM

Project Manager. Responsible for feasibility study to provide treatment of brackish groundwater from the lower Floridan aquifer as a potential source of drinking water. The study included evaluation of site-specific constraints relative to water supply, treatment, residuals or by-product disposal, and conveyance to the existing potable water distribution system. Based on an initial screening of alternatives, a conceptual design was developed for a reverse osmosis treatment facility to treat the brackish water. Evaluation of concentrate disposal options included deep well injection, which is not well established in the region, as well as zero liquid dis-charge technologies.

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER 1

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
City of Cape Coral Continuing Professional Services Cape Coral, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
City of Cape Coral	Jody Sorrels, PE	239.242.3227

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

Tetra Tech has provided continuing miscellaneous professional engineering services to the City of Cape Coral for a variety of utility related projects since 2000, and prior to that for preparation of the City's Annual Reports as required for compliance with their Utility Bond covenants. Specific projects have included lift station refurbishment design, water and wastewater treatment plant modifications, utility infrastructure improvements and other engineering services as needed:

- **Southwest Biosolids Improvements.** Design, permitting, bidding, and construction oversight for the installation of three centrifuges to replace the aging belt presses at the Southwest WRF. The project included the design for the centrifuges and supporting conveyor system which is used to divert dewatered sludge to a truck system.
- **Lift Station Upgrades.** Design, permitting, bidding, and construction management for nearly 15 lift station upgrades for the City. The upgrades have included conversion from dry pit to wet pit, wet well rehabilitation, pump and electrical upgrades and pipe replacement through the valve vault
- **42-inch Wastewater Force Main Study.** Due to continued issues with a 42-inch force main that delivers wastewater to the Southwest WRF, Tetra Tech performed an evaluation for sizing and routing of a new force main. The route selection considered trench sizing, available easement/right-of-way space, and proximity to vacant lots that could be purchased to assist with ease in construction. Modeling efforts determined that an automated diversion valve could be installed to assist in diverting flow to other force mains during high flow periods. As a result, the force main was downsized to 36 inches. After the study, Tetra Tech proceeded with design, and the force main is currently under construction.
- **Everest Blower Upgrades.** The Everest Parkway Water Reclamation Facility (WRF) utilizes dissolved oxygen (DO) probes to control air flow to the aeration zones of the biological treatment process. Desired DO levels are used to control in-line valves which control the volume of air released to the tanks. In addition, the City uses multiple single-stage blowers and one (1) multi-stage blower for air supply. The blowers are automated and connected to the Everest Parkway WRF's SCADA system. However, the City hadissues with the automated control of the multi-stage blower and retained tetra Tech to perform ladder logic modifications to return the unit to automation as designed.
- **State Road 78 Utility Relocations.** Due to the proposed widening, a portion of the CITY's potable water main system will need to be relocated as it will interfere with construction and be located within the proposed traveled lanes. The subject area is located between SW 20th Ave (Nott Road) and Commercial Park Place). Tetra Tech was retained to perform the design, permitting and assist with oversight and certification.

Relevance to City of Port St. Lucie's Contract

- ☑ Wastewater facility permitting
- ☑ Lift station rehabilitations
- ☑ Evaluations and inspections of utility systems
- ☑ Wastewater biosolids improvements
- ☑ Permit compliance
- ☑ Collection and force main system upgrades and replacements

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER 2

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
City of Clearwater Continuing Services Engineer of Record Clearwater, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
City of Clearwater	Jeremy Brown, PE	727.562.4815

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

Tetra Tech has served as an Engineer of Record Consultant to the City of Clearwater since 2009. These services include studies, design, permitting, bidding, construction administration, and public outreach services for water, wastewater, reclaimed water and potable reuse projects. To date, our services include the following projects:

- **CMMS Software RFP Support.** Tetra Tech is assisting the City in evaluating various CMMS (computerized maintenance management system) software to determine the software most suitable for tracking activities related to maintaining the City's utility equipment and tracking employee utility asset work.
- **Marshall Street WRF Chlorine Contact Tank Repair** Providing design, permitting and construction assistance for repair of the inner chlorine contact chamber at the City's Marshall Street Water Reclamation Facility
- **Corrosion Inhibitor Evaluation .** Tetra Tech conducted a desktop study of the City's existing polyphosphate corrosion inhibitor utilized in the potable water system and provided a coupon testing plan with recommended potential inhibitors to test in a corrosion test rack. Tetra Tech is providing testing support, evaluation of results and a summary report.
- **Groundwater Replenishment (GWR) Program.** Desing, Permitting, Bidding, and Public Outreach services for the Advanced Water Purification Plant (AWPP) and related pipelines and pumping systems to treat reclaimed water to a purified water quality with the objective of replenishing the aquifer within the City utilizing four (4) aquifer recharge wells. The AWPP design includes ultrafiltration (UF), reverse osmosis (RO), advanced oxidation process (AOP), membrane contactors, and post treatment stabilization. Tetra Tech is providing full-service design services for site planning and development, stormwater management, building programming, surveying, pipeline design, recharge wellhead design, advanced water purification treatment, purified water stabilization, and membrane concentrate water quality.

Relevance to City of Port St. Lucie's Contract

- ☑ Asset Management
- ☑ Bench and pilot scale treatment studies
- ☑ Public meeting/outreach support
- ☑ Water and wastewater treatment plant upgrades/repair
- ☑ Water treatment equipment selection and design
- ☑ Indirect potable water reuse equipment selection and design
- ☑ Feasibility studies
- ☑ Wastewater collection system master planning
- ☑ Structural engineering services

- **Water Treatment Plant #3 Reverse Osmosis Addition.** The City contracted Tetra Tech to provide design of the expansion of the City's existing WTP#3, including the addition of pretreatment and reverse osmosis (RO) treatment to address changes in source water (groundwater) quality. Work completed included site planning and preliminary design. The capacity of the pretreatment and RO process is approximately 1.0 MGD.
- **Collection System Master Plan.** Tetra Tech prepared the 2020 Master Plan for the City's 72 lift stations, 370 miles of gravity sewer, 38 miles of force main, and over 8,300 manholes spared over three wastewater service areas.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER 3

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
City of Hollywood Water Main Replacement and Sewer Expansion Programs Hollywood, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
City of Hollywood	Jody Sorrels, PE	239.242.3227

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

The City of Hollywood is undertaking several integrated programs for water main replacement, and sewer expansion throughout the City. Tetra Tech has been assisting the City with this program since 2010 and multiple projects have been successfully designed, permitted, constructed, and are in operation. Tetra Tech has provided surveying, geotechnical evaluations, design, permitting, and construction management for multiple projects under this program. To date,the program includes the replacement of nearly 300,000 feet of water mains ranging in size from 4-inches to 24-inches in diameter, utilizing various pipe materials including PVC, HDPE, DIP, steel, and PCCP. Construction methods include open cut for roadways and horizontal directional drilling (HDD) and jack and bore installations under major intersections, the FEC railroad, and the Intracoastal Waterway. In addition, Tetra Tech is assisting the City with implementation of its city-wide sewer program, where the city is converting areas served by septic tanks to sewer systems connected to the City's wastewater treatment plant. To date, approximately 60,000 feet of gravity sewers and force mains have been designed for construction, including pump stations.

Relevance to City of Port St. Lucie's Contract

- ☑ Water distribution and wastewater collection systems evaluation and design
- ☑ Utility surveys
- ☑ MOT plans
- ☑ FDOT coordination and permitting
- ☑ Pump station design

- **Hollywood Boulevard to Johnson Street.** 27,000 linear feet of water main replacement and roadway pavement restoration. Designed, permitted, constructed, and in operation.
- **Hollywood Boulevard to Sheridan Street East of Federal Highway.** 99,000 linear feet of water main replacement and pavement restoration and 10,000 linear feet of storm sewers (designed by the City). Designed, permitted, constructed and in operation.
- **Hollywood Boulevard to Sheridan Street West of Federal Highway.** 9,000 linear feet of water main replacement and pavement restoration and 23,000 linear feet of gravity sewers and force main, with lift station improvements and septic tank and private lift station abandonment. Designed, permitted, and under construction.
- **Hollywood Boulevard from City Hall Circle to West Dixie Highway.** 3,000 linear feet of water main replacement with FDOT Complete Streets project, which included storm sewers and pavement restoration (by FDOT). Designed, permitted, under construction.
- **Pembroke Road to Hollywood Boulevard from North 52nd Avenue to State Road 411**. ncludes 70,000 linear feet of water main replacement and pavement restoration and 30,000 linear feet of gravity sewers connecting to existing systems. Currently under design.
- **Hollywood Beach Utility Improvements.** Includes 50,000 linear feet of water main replacement 10,000 linear feet of gravity sewers and force mains connecting to existing systems or new lift stations. This project also includes three horizontal directional drills for water mains across the bay to the mainland.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER 4

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
City of Lakeland Continuing Professional Services Lakeland, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
City of Lakeland	Tom Mattiacci, PE	863.834.6173

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

Tetra Tech has provided continuing miscellaneous professional engineering services to the City of Lakeland since 1991. Our services have included but not limited to — Surface Water Control Structures, Master Plans for wastwater collection, treament, and reclaimed water resuse systems, Hydraulic modeling, Utility systen expansions (potable water distribution and transmission system desing), Wastewater treatment plant pretreatment anailysis, Permitting through FDEP, Polk County, FDOT, and SWFWMD, Utility System Finacning, State Revolving Fund program, and inter-local agreements and negotations. Projects have included:

- **Northeast Water Transmission System – Southern Route.** The Tetra Tech project team provided route planning, preliminary design, surveying, final design, permitting and construction administration services for 228 linear feet (LF) of 8-inch water main, 57 LF of 12-inch water main, and 21,706 LF of contiguous 30-inch water main. Over 8,000 LF of the 30-inch water main was installed, by directional drilling, in the public road right-of-way for Fish Hatchery Road. Over 200 LF of 30-inch HDPE water main was for a non-perpendicular crossing of Fish Hatchery Road. Approximately 54 LF of 48-inch steel casing was installed by boring and jacking methods for crossing State Road 33A with a 30-inch ductile iron water main.
- **T.B. Williams 51.0 MGD WTP Filter Improvements** Tetra Tech was chosen to perform this project based on the team's experience working on previous improvements to this water treatment plant. The previous project involved evaluation of the existing gravity filtration and chemical feed systems at the T.B. Williams WTP. Tasks associated with the project included upgrading the existing backwash system from surface water agitation to the combination air/water, installing media retaining effluent launders, and recoating basin interiors.
- **Skyview Utilities Water and Wastewater Improvements.** Tetra Tech was chosen to provide engineering support for the replacement and rehabilitation of approximately 23,000 linear feet of gravity sewer piping and 78 associated manholes, as well as the demolition of the existing Skyview WWTP. Everest Blower Upgrades.
- **Glendale Wastewater Treatment Plant Grit Study.** Tetra Tech performed a grit study, which included characterization of grit and economic assessment of high-efficiency grit removal technology.
- **City of Lakeland Edgewood Irrigation Well.** The City of Lakeland owns and operates the Edgewood Irrigation well that provides irrigation water to the Cleveland Heights Golf Course. The Edgewood Irrigation Well Improvements project included the demolition of the existing well building, the exiting pump and motor, and the existing electrical equipment. A new well pump and motor, discharge piping, building, and electrical service were constructed as part of the improvements. Services provided by Tetra Tech included preliminary design, final design, permitting, bidding and construction administration.

Relevance to City of Port St. Lucie's Contract

- ☑ SRF funding assistance
- ☑ Water use permitting
- ☑ Water treatment plant evaluation and upgrade design
- ☑ Wastewater treatment plant evaluation and upgrade design
- ☑ Water transmission system design and permitting
- ☑ Master planning

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER 5

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
City of Orlando Continuing Consulting Services Orlando, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
City of Orlando	Hector Sanchez, PE	407.246.3756

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

Tetra Tech has provided continuing professional engineering services to the City of Orlando Water Reclamation Division since 2000. Projects have included treatment facilities and process improvements/evaluations, thirty-five (35) lift station improvement projects, force main replacements, sewer system studies, asset management, and other engineering services. Services provided: Wastewater Transmission Improvements, Lift Station Upgrades, Permitting Services, SRF Loan Applications, Construction Administration, and Conceptual Studies.

Relevance to City of Port St. Lucie's Contract

- ☑ Lift station improvements
- ☑ Sewer system studies, master plan, and improvements
- ☑ SRF loan assistance
- ☑ Asset management support
- ☑ Wastewater treatment plant evaluation
- ☑ Wastewater system master planning
- ☑ Preparation of alternatives analysis and capital planning

- **State Revolving Loan Asset Management Plan.** Preparing documentation for a system wide asset management plan to meet the fiscal sustainability requirements of the FDEP SRF Loan Program. Coordinate and document the City's existing asset management and provide recommendations on other plan requirements to support the City's SRF loans.
- **Iron Bridge Regional Water Reclamation Facility Aeration System Improvements.** Evaluated four diffuser replacement options at the City's 40 MGD Water Reclamation Facility including efficiency and life cycle costs, UV and chlorine resistance, and warranty.
- **Water Conserv I WRF Consolidation Study.** Performed a present-worth cost evaluation to estimate capital costs for improvements associated with the two options for planning the future of the Water Conserve I WRF. Tetra Tech recommended the City refurbish, upgrade, and expand the WC1WRF and subsequently operate this facility well into the future.
- **Lift Stations 28, 54, 60 and 67 Upgrades .** Preliminary and final design, permitting, bidding and construction services for replacement of four existing wet-dry pit pump stations with new submersible stations meeting City standards.
- Lift Station 201 and Lift Station 205 Force Main Replacements The City has experiences multiple failures on the existing 8- and 10-inch asbestos cement force mains from these lift stations. Evaluated the service areas of the lift stations to size the new force mains and design replacement mains. Replace 6,100 feet of 8-inch and 10-inch force main
- **State Revolving Fund (SRF) Facilities Plan.** The City requested and obtained funding for seven projects through the State Clean Water SRF Program. Prepared alternative analysis, cost estimates, implementation plan, capital financial plan and other documentation required to meet FDEP requirements for funding of $66 million in loans for the seven projects.
- **Downtown District Sewer Master Plan.** Master planning analysis of the gravity sewer collection system tributary to Lift Station Nos. 1 and 7 and Lift Station No. 5 that serve the Downtown and Parramore areas of Orlando. Completed an hydraulic analysis of over 32 miles of gravity sewer and identified areas of excess capacity capable of accommodating the Orlando City MLS Stadium.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER 6

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
City of Rockledge Continuing Professional Services Rockledge, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
City of Rockledge	Jim Elmore	321.221.7540

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

The City of Rockledge selected Tetra Tech to provide continuing engineering services including a range of professional municipal engineering and related tasks in the areas of stormwater, reclaimed water, wastewater collection and treatment, paving, drainage, construction engineering, inspection and administration, plan reviews, and development of technical documents. Continuing engineering services average $332K annually and consist of tasks such as:

Relevance to City of Port St. Lucie's Contract

- ☑ Lift station improvements
- ☑ Water quality treatment
- ☑ Wastewater treatment
- ☑ Preparation of alternatives analysis and capital planning
- ☑ Biosolids feasibility study

- **Indian River Lagoon.** The City of Rockledge (City) is moving forward with capital improvement projects to help increase the quality of surface water flow into the Indian River Lagoon (IRL). These projects are also helping the City to comply with its obligations under the Basin Management Action Plan (BMAP) for this area.
- **Gus Hipp Canal.** Tetra Tech is performing the water quality assessment, engineering design and permitting for the installation of biosorption activated media (BAM) in the bottom of regional canals to date, the City has installed 6,000 linear feet of BAM in the Gus Hipp Canal. Tetra Tech is initiating design and permitting of an additional 3,000 of material in the canal system in the northwest corner of the intersection of the Gus Hipp Canal and Rockledge Blvd (US 1).
- **Equalization Basin Improvements.** The City has been interested in adding an equalization basin (EQB) upstream of the secondary treatment process to dampen diurnal flow and loading variations. In addition, the City is also looking for cost effective ways to reduce nitrogen levels in the reclaimed water produced by the plant to ultimately help reduce nitrogen loads to the Indian River and Banana River Lagoon. Tetra Tech has designed a 1.4 MG EQB with transfer pumps for the City's wastewater treatment plant.
- **Biosolids Thickening and Digestion Improvements.** Three alternative biosolids treatment processes for meeting Class B biosolids standards for pathogen reduction were evaluated in that study. The City authorized Tetra Tech to design the selected anoxic/aerobic digestion improvements. Associated yard piping, site civil, structural, HVAC, electrical, and I&C improvements.
- **Lift Station 42 Forcemain Aerial Canal Crossing**. The purpose of this project is to prepare design documents & provide construction phase assistance for the LS 42 Discharge Force Main Modifications.
- **Wastewater Collection System Hydraulic Modeling.** Tetra Tech developed a model for the existing wastewater transmission system will allow the City to computer-simulate scenarios within the wastewater transmission system such that the interaction between lift stations can be simulated, and an optimized system solution can be established. The model has helped with assessing the impact to upstream and downstream stations in the existing transmission system during the two proposed operational scenarios (booster or bypass) identified for LS No. 8.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER 7

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
City of Tarpon Springs Continuing Professional Utilities Services Tarpon Springs, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
City of Tarpon Springs	Bob Robertson, PE	727.942.5638

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

The City has selected Tetra Tech, since 2016, to serve as a Utilities Engineering Services Consultant. Our services include support to the City's Public Services and Utilities Departments for multiple projects ranging from GIS support services, wells, water mains, master plans, and feed systems. Each of these projects involved coordinating with the City, stakeholders, permitting agencies, and team members on design, making sure that the City's goals and needs are met, and projects are successfully completed. In addition to Tetra Tech's design work, other responsibilities as a part of the ongoing contract included bidding services, construction support, permitting coordination, public outreach, funding assistance, and as-needed assistance and updates.
Sample Projects include:

- **GIS Support Services – Wastewater Assets** Tetra Tech is providing Geographic Information System (GIS) assistance to the City for geo-location with Global Positioning System (GPS) equipment the horizontal positions of the City's wastewater assets. For field data collection, Tetra Tech is utilizing ESRI's ArcGIS Collector Application installed on internet enabled mobile devices in conjunction with a remote GPS antenna transmitting high accuracy coordinate data to the mobile device via Bluetooth communication. The work also includes providing as-needed assistance and updates to the City's GIS program
- **Reverse Osmosis Water Facility (ROWF) Solar Design Criteria**): Tetra Tech prepared the design criteria for the Solar System – Phase 1 project at the City's ROWF. This first phase included the system interconnect and the solar power systems including photovoltaic (PV) panels, inverters and structures and systems required to support the PV equipment. Tetra Tech provided bidding services and is providing construction support
- **Wells 10, 11, 14 and Raw Water Main.** Tetra Tech is providing design, permitting, bidding and construction services for the installation of pumps and wellhead equipment for three new raw water wells, Wells 10, 11 and 14, and a 2,500 LF raw water main within Duke Energy's transmission line right-of-way (ROW). Tetra Tech performed hydraulic and water hammer potential modeling utilizing WaterGEMS software to confirm the new raw water pipeline diameter and operation
- **Groundwater Well Condition Monitoring Plan** Tetra Tech developed a maintenance program for the City's groundwater wells, using biological monitoring tools and scheduled maintenance, to increase the reliability of the groundwater wells
- **State Road 78 Utility Relocations.** Due to the proposed widening, a portion of the CITY's potable water main system will need to be relocated as it will interfere with construction and be located within the proposed traveled lanes. The subject area is located between SW 20th Ave (Nott Road) and Commercial Park Place). Tetra Tech was retained to perform the design, permitting and assist with oversight and certification.

Relevance to City of Port St. Lucie's Contract

- ☑ Surveying, mapping and GIS services
- ☐ Post construction operational support services
- ☑ Electrical systems and alternative energy design
- ☑ Pilot plant evaluations
- ☑ Water treatment plant upgrade design
- ☑ Raw water well facility design
- ☑ As needed support to water system operation

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER
	8

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
Collier County Continuing Professional Utility Services Collier County, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
Collier County Utilities	Tom Chmelik	239.252.6213

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

Tetra Tech has been serving Collier County for miscellaneous utility engineering assignments since 1998. Engineering assignments have ranged from feasibility studies to engineering design. Some of the tasks performed by Tetra Tech for Collier County include the following:

- Design, permitting, and construction management for the installation of aerial crossings of the Cocohatchee Canal for a 12-inch raw water main, an 8-inch potable water main, a 12-inch wastewater main, and a 24-inch reclaimed water main
- Design, permitting, and bidding for the installation of miscellaneous water mains and force mains throughout the utility service system.
- Development of a noise study at the NCRWTP to identify noise sources within the treatment process.
- Preparation of a short-term residuals stabilization study, which analyzed alternatives for sludge treatment and disposal on a temporary basis, for both wastewater treatment plants.
- Design, bidding, and construction services for the expansion of the chlorine storage facilities at the SCRWTP to allow 21 full cylinders to be placed on line, up from 10
- Design, permitting, bidding, and assistance with easement negotiations and related services for the development of an exploratory test well program for the supply of raw water.
- Design for emergency power supply to multiple lift stations throughout the County's wastewater system.
- CT analysis and compliance documentation to meet the current groundwater rule requirements.
- Design and construction engineering inspection services for multiple lift station improvements, including the addition of an odor control system, new generators, and lift station refurbishment (wet well refurbishment, recoating, piping, pumps, controls, etc.).
- Development of Utility Standards for generators, diesel pumps, VFDs, and lightning protection for wastewater pump stations.
- Utility valuation of Orange Tree Utilities for acquisition
- Potable water meter auditing
- SCADA design, installation, and programming for control upgrades to the SCRWRF.

Relevance to City of Port St. Lucie's Contract

- ☑ SCADA system design and upgrades
- ☑ Electrical system design and upgrades
- ☑ Wastewater system evaluation and design
- ☑ Construction engineering services
- ☑ Utility standards development
- ☑ Easement acquisition support
- ☑ Treatment plant upgrade design
- ☑ Biosolids feasibility study
- ☑ Regulatory compliance

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER
	9

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
Orange County Utilities Continuing Professional Engineering Services Orange County, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
Orange County Utilities	Tad Parker, PE	407.254.9729

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

Tetra Tech has provided continuing professional engineering services directly to Orange County Utilities (OCU) since 2016. Projects have included numerous wastewater pump station refurbishments, utility infrastructure improvements, and other utilities engineering services. Services provided: Water Distribution Improvements, Water, Wastewater, and Reclaimed Water Hydraulic Evaluations, Wastewater Pump Station Upgrades, Permitting Services, Construction Administration and CEI, Surveying / GIS. Select Projects Include:

- **Eastern Regional Water Supply Facility Sodium Hypochlorite System Conversion to Bulk.** Tetra Tech is providing design, permitting, bidding assistance and construction administration services related to replacing the County's existing sodium hypochlorite generation system with a bulk storage and feed system. This includes demolition of the existing generation equipment, replacing the existing storage tanks, replacing metering pumps and replacing piping. New piping and feed pumps will be sized for a sodium hypochlorite strength of 12 percent. The sodium hypochlorite storage and feed system will be separated in to pre and post storage and feed areas in existing buildings to keep minimize the feed piping to each location. The design includes provision for a temporary storage and feed system to maintain treatment capabilities during construction. The project will include expanding the plant from 50 MGD to 62.5 MGD as the existing sodium hypochlorite generation system is the limiting factor in the existing capacity.
- **Town Center and South Central Master Pump Stations Improvements** Tetra Tech provided preliminary design, final design, permitting, and construction management services for a complete renovation of the County's Town Center Master Pump Station (MPS) and replacement of the South Central MPS. The Town Center MPS is a triplex pump station, and the improvements included removal of all equipment and facilities except the wet well, which was rehabilitated and coated, new odor control system, standby power generation, and three 90 hp submersible pumps. This station capacity was designed for 5.5 MGD. The new South Central MPS replaced the existing 26-year-old station. The South Central MPS included duel wet wells, odor control, standby power, electrical building and six 140 hp submersible pumps. The South Central MPS station capacity was designed for a pumping capacity of 26.1 MGD.
- **Alternative Water Supply Blending Study**. This study included an evaluation of the potential impacts for the County to purchase a surface water supply source to be blended in the Eastern Service Area which is currently supplied by groundwater sources and provides recommendations and the basis of design for any facilities required for the alternative water supply to be implemented. Technologies evaluated include granular activated carbon, ion exchange, and nanofiltration for DBP formation potential control. The evaluation also includes a route study, review of regulatory impacts, hydraulic evaluation, and finished water stability and blending evaluation.

Relevance to City of Port St. Lucie's Contract

- ☑ Surveying and GIS services
- ☑ Wastewater pump station evaluations and upgrade design
- ☑ Water treatment plant evaluation and upgrade design
- ☑ Process evaluation studies
- ☑ Water distribution evaluation and design

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	20. EXAMPLE PROJECT KEY NUMBER 10

21. TITLE AND LOCATION (CITY AND STATE)	22. YEAR COMPLETED	
Tohopekaliga Water Authority Continuing Professional Services Kissimmee, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (*if applicable*) Ongoing

23. PROJECT OWNER'S INFORMATION

A. PROJECT OWNER	B. POINT OF CONTACT NAME	C. POINT OF CONTACT TELEPHONE NUMBER
Tohopekaliga Water Authority	Deborah Beatty, PE	407.944.5023

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (*include scope, size, and cost*)

Tetra Tech has provided continuing professional engineering services to the Toho Water Authority since 1995. Projects have included numerous lift station upgrades and refurbishments, pipelines and other engineering services. Services provided include: Alternative water supply exploration and water use permitting, Water distribution (up to 24-inch) design, permitting and construction, Wastewater and reclaimed water/ transmission (up to 24-inch) design and permitting, Wastewater gravity system collection rehabilitation, Water use permitting and compliance, Wastewater lift station upgrades and refurbishments, Raw water supply wells and transmission mains, SRF and WFIA loan application and supporting documents, Permitting through FDEP, FDOT, SJRWMD, ACOE, Osceola County, and City of Kissimmee.

Relevance to City of Port St. Lucie's Contract

- ☑ Raw water well design
- ☑ SRF and WFIA loan and funding support
- ☑ Water use permitting
- ☑ Wastewater treatment facility evaluation and design
- ☑ Water treatment facility upgrade design
- ☑ Wastewater transmission system design
- ☑ Wastewater treatment feasibilty studies
- ☑ Process evaluation studies

- **WIFIA Letter of Interest and Loan Application.** Tetra Tech assisted with preparation of a Water Infrastructure Finance and Innovation Act (WIFIA) Letter of Interest to the United States Environmental Protection Agency for the Accelerated Gravity Sewer Assessment and Rehabilitation project, which spans 65 wastewater pumping station basins including over 900,000 feet of gravity mains of which 44 percent were considered to have a higher consequence of failure. Tetra Tech received $81.5M in funding approval..
- **Sandhill Road WRF Rerating.** The existing Sandhill Road WRF has an existing permitted capacity of 6.0 MGD. Tetra Tech performed a rerating study to examine flow trends, influent characteristics, unit process loadings, hydraulics, and historical performance in order to rerate the capacity of the existing facility.
- **Cypress West WRF Upgrade and Expansion.** The Cypress West WRF has a permitted capacity of 3.0 MGD and utilizes the Modified Ludzack Ettinger (MLE) process. Previously, preliminary treatment improvements were implemented in conjunction with conversion to the MLE Process and construction of external clarifiers. This project expanded the facility capacity to 6.00 MGD via construction of aeration, filtration, chlorine contact, effluent storage, and reclaimed water pumping improvements.
- **16-inch Celebration Force Main Replacement.** Survey, final design, permitting, bidding assistance, and construction administration services to replace three sections of existing 16-inch force main piping along West Irlo Bronson Memorial Highway totaling approximately 5,550 feet in areas previously identified by others where the existing ductile iron main has been evaluated for gas pockets and/or thinning pipe wall thickness.
- **Camelot West Pond Modifications.** Site review, survey, FDEP letter of modification, and coordination with the City of Kissimmee to add an additional concrete pad within the existing dry retention pond at the Camelot West Water Treatment Facility.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Tetra Tech	Orlando, FL	Prime

G. MATRIX

26. NAMES OF KEY PERSONNEL	27. ROLE IN CONTRACT	28. SECTION F EXPERIENCE CATEGORIES									
		1	2	3	4	5	6	7	8	9	10
Jon Fox, PE	Principal-in-Charge	X	X	X	X	X	X	X		X	X
James Christopher, PE	Client Services Manager	X	X		X		X	X	X	X	X
Tracy Lewis, PE	QA / QC	*See resume for project experience*									
Jon Bundy, PE	Water Supply & Treatment					X				X	X
John Toomey, PE	Wastewater Treatment				X	X	X			X	X
Scott Smith, PE	Pipeline Design				X	X	X	X	X	X	X
Michael Thatcher, PE	Civil Stormwater Planning & Design					X	X		X	X	X
Shannon Leicht, PE	Hydraulic & Hydrologic Modeling	*See resume for project experience*									
Andrew Woodcock, PE	Utilities Master Planning & Funding	X			X	X			X	X	X
Mark McKinney, PE	Cybersecurity & AWIA Compliance										X
Quintin Biagi, RA	Architecture	X	X	X	X		X	X		X	X
Jason Burkett, PE	Structural Engineering				X	X	X			X	X
David Burger, PE	Electrical and I&C	X			X	X	X			X	X
Michael Sutherland, LEED AP BD+C	HVAC & Plumbing	X			X	X	X				X
Dan Zrallack, PE	Geotechnical					X	X				
Lawrence Jenkins, PSM	Surveying & GIS				X	X	X			X	X
Edward Wills, PE	Construction Management & CEI	X			X	X	X			X	X
Douglas Dufresne, PG	Hydrogeological & Water Use Permitting				X					X	X
Bruce Lafrenz, PG	Hydrogeological & Water Use Permitting				X	X					X
Jarret Kinslow, PE	Water Supply & Treatment		X			X		X	X	X	X
Janine Alexander, PE	Utilities Master Planning & Funding			X						X	

29. TITLE OF EXAMPLE PROJECTS (FROM SECTION F)			
1	City of Cape Coral Continuing Professional Services	6	City of Rockledge Continuing Professional Services
2	City of Clearwater Continuing Services Engineer of Record	7	City of Tarpon Springs Continuing Professional Utilities Services
3	City of Hollywood Water Main Replacement and Sewer Expansion Programs	8	Collier County Continuing Professional Utility Services
4	City of Lakeland Continuing Professional Services	9	Orange County Utilities Continuing Professional Engineering Services
5	City of Orlando Continuing Consulting Services	10	Tohopekaliga Water Authority Continuing Professional Services

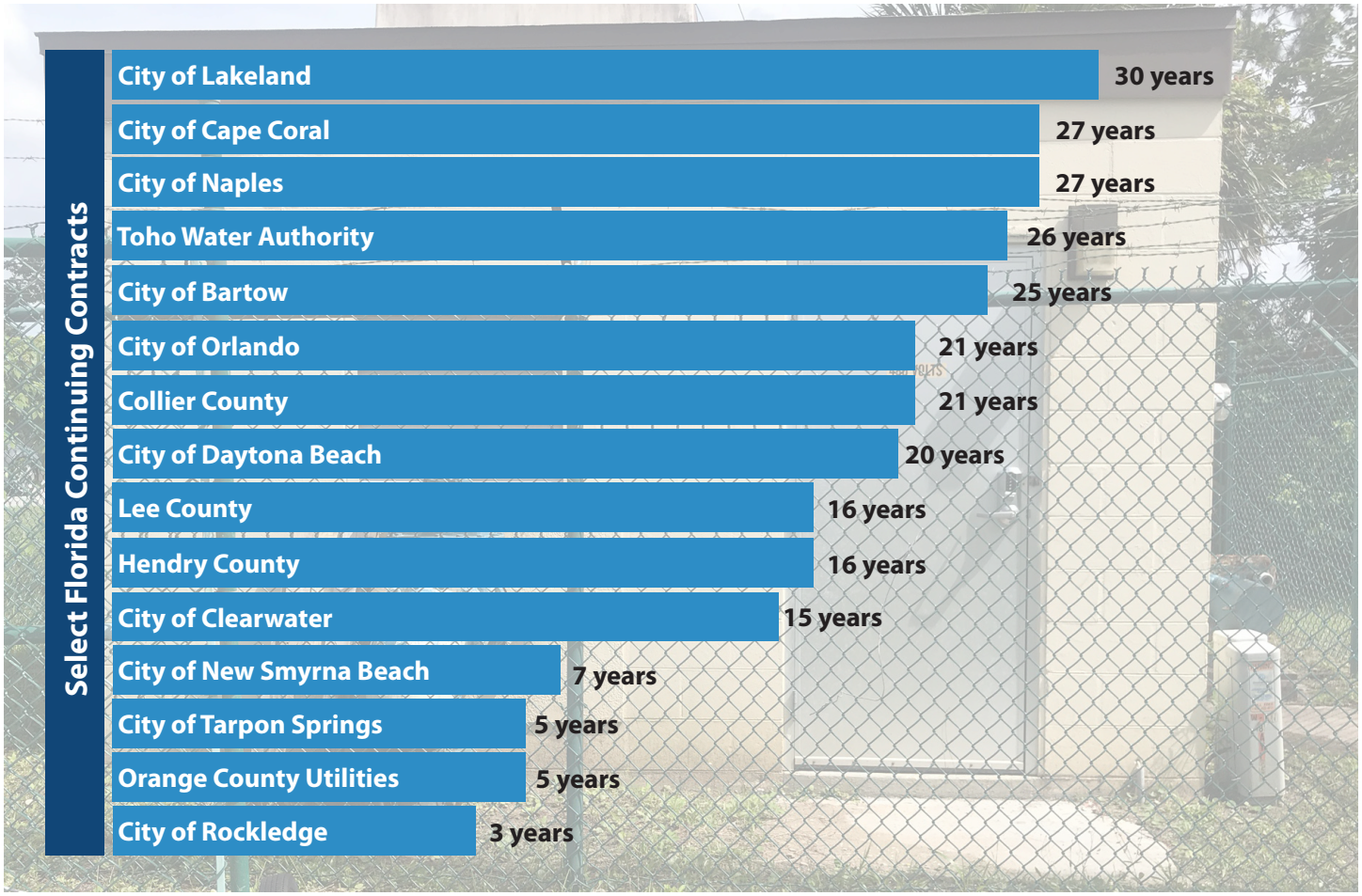
H. ADDITIONAL INFORMATION

30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. Attach additional sheets as needed.

Available to tackle projects of varying size and scope; our portfolio includes hundreds of projects from minor treatment plant rehabilitation and improvements and treatability studies to major treatment plant improvements and expansions. We understand the unique nature of continuing contracts and the necessity to provide timely responses while maintaining tight schedules and limited budgets.

Since continuing engineering services contracts are comprised of multiple and varied tasks, Tetra Tech begins planning early in the project to allocate the correct skilled staff and appropriate resources to complete assigned tasks on time and within established budgets so that valuable time is not lost. In addition, during our review of assigned tasks, we actively integrate lessons learned from previous projects increasing efficiency and reducing the potential of schedule delays due to unanticipated issues. Our standard approach is to work as an extension of our clients' staff, allowing the Tetra Tech team to leverage its understanding of client operations, processes and procedures; and develop customized solutions.

The graph below illustrates our long history of serving municipalities throughout Florida through similar continuing contracts:



I. AUTHORIZED REPRESENTATIVE

(The foregoing is a Statement of Facts)

31. SIGNATURE	32. DATE
	August 16, 2021
33. NAME AND TITLE	
Jon Fox, PE, Vice President	

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER: 20210093

PART II - GENERAL QUALIFICATIONS

2a. FIRM (OR BRANCH OFFICE) NAME: **Tetra Tech — Orlando, FL**			3. YEAR ESTABLISHED: 1966	4. UNIQUE ENTITY IDENTIFIER: 801215968 / 7HS97
2b. STREET: 201 E. Pine Street, Suite 1000			5. OWNERSHIP a. TYPE: Large Business Corporation	
2c. CITY: Orlando	2d. STATE: Florida	2e. ZIP CODE: 32801	b. SMALL BUSINESS STATUS: N/A	
6a. POINT OF CONTACT NAME AND TITLE: Lawrence Jenkins- Office Manager			7. NAME OF FIRM (*if block 2a is a branch office*): Tetra Tech, Inc.	
6b. TELEPHONE NUMBER: 407.480.3922	6c. E-MAIL ADDRESS: Eddie.Jenkins@tetratech.com			
8a. FORMER FIRM NAME(S): N/A			8b. YEAR ESTABLISHED: N/A	8c. UNIQUE ENTITY IDENTIFIER: N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	1,735	17
08	CADD Technician	259	7
12	Civil Engineer	754	23
15	Construction Inspector	250	1
21	Electrical Engineer	495	4
23	Environmental Engineer	553	3
24	Environmental Scientist	495	2
29	Geographic Information System Specialist	424	3
30	Geologist	475	5
38	Land Surveyor	91	3
42	Mechanical Engineer	660	2
48	Project Manager	1,918	18
52	Sanitary Engineer	129	3
57	Structural Engineer	228	1
58	Technician/Analyst	809	2
60	Transportation Engineer	226	3
	Financial Analysts	99	2

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

a. Profile Code	b. Experience	c. Revenue Index Number
A12	Automation; Controls; Instrumentation	1
B02	Bridges	1
C07	Coastal Engineering	1
C08	Codes; Standards; Ordinances	1
C10	Commercial Building (low rise); Shopping Centers	1
C11	Community Facilities	1
C14	Conservation and Resource Management	1
C15	Construction Management	3
C18	Cost Estimating; Cost Engineering and Analysis; Parametric Costing; Forecasting	1
D04	Design-Build - Preparation of Requests for Proposals	1
E01	Ecological & Archeological Investigations	1
E03	Electrical Studies and Design	3
E04	Electronics	1
E10	Environmental and Natural Resource Mapping	1
E11	Environmental Planning	1
E12	Environmental Remediation	1
G01	Garages; Vehicle Maintenance Facilities; Parking Decks	1
H04	Heating; Ventilating; Air Conditioning	1
H07	Highways; Streets; Airfield Paving; Parking Lots	1
H11	Housing (Residential, Multi-Family; Apartments; Condominiums)	1
H12	Hydraulics & Pneumatics	1
I01	Industrial Buildings; Manufacturing Plants	1
I03	Industrial Waste Treatment	5
I05	Interior Design; Space Planning	1
L02	Land Surveying	1
L06	Lighting (Exteriors; Streets; Memorials; Athletic Fields, Etc.)	1
P05	Planning (Community, Regional, Areawide and State)	3
P06	Planning (Site, Installation, and Project)	1
R03	Railroad; Rapid Transit	1
R04	Recreation Facilities (Parks, Marinas, Etc.)	1
R11	Rivers; Canals; Waterways; Flood Control	1
S04	Sewage Collection, Treatment and Disposal	6
S06	Solar Energy Utilization	2
S07	Solid Wastes; Incineration; Landfill	1
S09	Structural Design; Special Structures	1
S10	Surveying; Platting; Mapping; Flood Plain Studies	2
S13	Storm Water Handling & Facilities	4
T02	Testing & Inspection Services	1
T03	Traffic & Transportation Engineering	4
T04	Topographic Surveying and Mapping	1
U03	Utilities (Gas and Steam)	1
W01	Warehouses & Depots	1
W02	Water Resources; Hydrology; Ground Water	3
W03	Water Supply; Treatment and Distribution	7

				W04	Wind Tunnels; Research/Testing Facilities Design	1
	Other Employees	10,715	0	Z01	Zoning; Land Use Studies	1
	Total	**20,315**	**99**			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a. Federal Work	2
b. Non-Federal Work	8
c. Total Work	**8**

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

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

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE

April 8, 2021

c. NAME AND TITLE

Lawrence Jenkins- Office Manager

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER: 20210093

PART II - GENERAL QUALIFICATIONS

2a. FIRM (OR BRANCH OFFICE) NAME: Tetra Tech — Atlanta		3. YEAR ESTABLISHED: 1966	4. UNIQUE ENTITY IDENTIFIER: 105569359 / 5NYY9
2b. STREET: 1899 Powers Ferry Road, Suite 400			5. OWNERSHIP a. TYPE: Large Business Corporation
2c. CITY: Atlanta	2d. STATE: Georgia	2e. ZIP CODE: 30339	b. SMALL BUSINESS STATUS: N/A
6a. POINT OF CONTACT NAME AND TITLE: Lauren Springer – Office Manager			7. NAME OF FIRM (*if block 2a is a branch office*): Tetra Tech, Inc.
6b. TELEPHONE NUMBER: 770.738.6056	6c. E-MAIL ADDRESS: lauren.springer@tetratech.com		
8a. FORMER FIRM NAME(S): N/A		8b. YEAR ESTABLISHED: N/A	8c. UNIQUE ENTITY IDENTIFIER: N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	1,735	8
10	Chemical Engineer	517	1
12	Civil Engineer	754	17
15	Construction Inspector	250	4
16	Construction Manager	799	3
18	Cost Engineer/Estimator	168	1
21	Electrical Engineer	495	1
23	Environmental Engineer	553	5
24	Environmental Scientist	495	4
29	Geographic Information System Specialist	424	1
30	Geologist	475	4
34	Hydrologist	253	1
39	Landscape Architect	35	1
48	Project Manager	1,918	15
50	Risk Assessor	408	1
52	Sanitary Engineer	129	1
58	Technician/Analyst	809	1
59	Toxicologist	58	1
	Contract/Procurement Specialists	375	1
	Information/Data Management Specialists	257	1
	UXO Certified Specialists (EOD)	171	29
	Other Employees	9,237	0
	Total	**20,315**	**101**

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

a. Profile Code	b. Experience	c. Revenue Index Number
C15	Construction Management	6
E03	Electrical Studies and Design	1
E09	Environmental Impact Studies, Assessments or Statements	1
E11	Environmental Planning	2
E12	Environmental Remediation	1
G02	Gas Systems (Propane; Natural, Etc.)	1
H07	Highways; Streets; Airfield Paving; Parking Lots	1
I01	Industrial Buildings; Manufacturing Plants	2
I02	Industrial Processes; Quality Control	2
I03	Industrial Waste Treatment	4
P04	Pipelines (Cross-Country - Liquid & Gas)	1
P06	Planning (Site, Installation, and Project)	1
P12	Power Generation, Transmission, Distribution	1
R04	Recreation Facilities (Parks, Marinas, Etc.)	1
S04	Sewage Collection, Treatment and Disposal	5
S07	Solid Wastes; Incineration; Landfill	1
S13	Storm Water Handling & Facilities	3
W02	Water Resources; Hydrology; Ground Water	1
W03	Water Supply; Treatment and Distribution	4

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a. Federal Work	4
b. Non-Federal Work	7
c. Total Work	7

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

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

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE: Lauren Springer

b. DATE: April 08, 2021

c. NAME AND TITLE: Lauren Springer – Office Manager

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER: 20210093

PART II - GENERAL QUALIFICATIONS

2a. FIRM (OR BRANCH OFFICE) NAME: **Tetra Tech — Louisville, KY**			3. YEAR ESTABLISHED: 1966 / 4. UNIQUE ENTITY IDENTIFIER: 124408969 / 3W4P2
2b. STREET: 2000 Warrington Way, Suite 245			5. OWNERSHIP a. TYPE: Large Business Corporation
2c. CITY: Louisville	2d. STATE: Kentucky	2e. ZIP CODE: 40222	b. SMALL BUSINESS STATUS: N/A
6a. POINT OF CONTACT NAME AND TITLE: William Nieport, Vice President			7. NAME OF FIRM (*if block 2a is a branch office*): Tetra Tech, Inc.
6b. TELEPHONE NUMBER: 502.569.9007	6c. E-MAIL ADDRESS: bill.nieport@tetratech.com		
8a. FORMER FIRM NAME(S): N/A			8b. YEAR ESTABLISHED: N/A / 8c. UNIQUE ENTITY IDENTIFIER: N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	1,735	2
06	Architect	207	3
08	CADD Technician	259	3
10	Chemical Engineer	517	1
12	Civil Engineer	754	2
24	Environmental Scientist	495	2
29	Geographic Information System Specialist	424	1
30	Geologist	475	1
48	Project Manager	1,918	8
57	Structural Engineer	228	4
	Other Employees	13,303	0
	Total	**20,315**	**27**

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

a. Profile Code	b. Experience	c. Revenue Index Number
A05	Airports; Navaids; Airport Lighting; Aircraft Fueling	1
A06	Airports; Terminals and Hangars; Freight Handling	1
A11	Auditoriums & Theaters	1
C08	Codes; Standards; Ordinances	3
C11	Community Facilities	1
C13	Computer Facilities; Computer Service	1
D04	Design-Build - Preparation of Requests for Proposals	1
E03	Electrical Studies and Design	2
E07	Energy Conservation; New Energy Sources	1
E11	Environmental Planning	1
E12	Environmental Remediation	1
F03	Fire Protection	1
H02	Hazardous Materials Handling and Storage	5
H04	Heating; Ventilating; Air Conditioning	1
H07	Highways; Streets; Airfield Paving; Parking Lots	1
H09	Hospital & Medical Facilities	1
H11	Housing (Residential, Multi-Family; Apartments; Condominiums)	1
I06	Irrigation; Drainage	1
L06	Lighting (Exteriors; Streets; Memorials; Athletic Fields, Etc.)	1
M05	Military Design Standards	1
O01	Office Buildings; Industrial Parks	1
P05	Planning (Community, Regional, Areawide and State)	1
P06	Planning (Site, Installation, and Project)	1
P12	Power Generation, Transmission, Distribution	1
R04	Recreation Facilities (Parks, Marinas, Etc.)	1
R05	Refrigeration Plants/Systems	3
R06	Rehabilitation (Buildings; Structures; Facilities)	3
R08	Research Facilities	1
R11	Rivers; Canals; Waterways; Flood Control	1
S04	Sewage Collection, Treatment and Disposal	4
S09	Structural Design; Special Structures	4
S10	Surveying; Platting; Mapping; Flood Plain Studies	1
S13	Storm Water Handling & Facilities	1
T03	Traffic & Transportation Engineering	1
T04	Topographic Surveying and Mapping	1
V01	Value Analysis; Life-Cycle Costing	1
W03	Water Supply; Treatment and Distribution	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS	
a. Federal Work	6
b. Non-Federal Work	6
c. Total Work	7

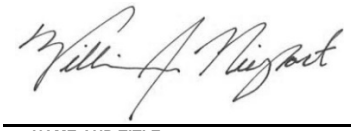
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

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

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

1a. SIGNATURE



b. DATE

April 8, 2021

c. NAME AND TITLE

William Nieport, Vice President

Ardaman & Associates, Inc.

ARCHITECT- ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*:

PART II - GENERAL QUALIFICATIONS

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

2a. FIRM *(or Branch Office)* NAME	Ardaman & Associates, Inc.
2b. STREET	460 NW Concourse Place – Unit #1
2c. CITY	Port St. Lucie
2d. STATE	FL
2e. ZIP CODE	34986
3. YEAR ESTABLISHED	1987
4. UNIQUE ENTITY IDENTIFIER	844891465
5. OWNERSHIP	
a. TYPE	Corporation
b. SMALL BUSINESS STATUS	
6a. POINT OF CONTACT NAME AND TITLE	Daniel J. Zrallack, P.E., Asst. Vice President / Branch Manager
6b. TELEPHONE NUMBER	(772) 878-0072
6c. E-MAIL ADDRESS	dzrallack@ardaman.com
7. NAME OF FIRM *(If Block 2a is a Branch Office)*	Ardaman & Associates, Inc. 8008 S. Orange Avenue Orlando, FL 32809
8a. FORMER FIRM NAME(S) *(If any)*	
8b. YEAR ESTABLISHED	
8c. UNIQUE ENTITY IDENTIFIER	

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. Number of Employees (1) FIRM	c. Number of Employees (2) BRANCH
02	ADMINISTRATIVE	56	2
08	CADD TECHNICIAN	17	
14	COMPUTER PROGRAMMER	2	
15	CONSTRUCTION INSPECTOR	54	
23	ENVIRONMENTAL ENGINEER	4	
24	ENVIRONMENTAL SCIENTIST	5	
27	FOUNDATION / GEOTECHNICAL ENGINEER	95	2
29	GIS SPECIALIST	1	
30	GEOLOGIST	10	
40	MATERIALS ENGINEER	3	
58	TECHNICIAN / ANALYST	92	4
62	WATER RESOURCES ENGINEER	1	
	DRILLERS	40	
	Other Employees		
	Total	**380**	**8**

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

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
D02	Dams *(Earth; Rock)*; Dikes; Levees	1
E02	Educational Facilities; Classrooms	1
E09	Environmental Impact Studies, Assessments or Statements	2
H03	Hazardous, Toxic, Radioactive Waste Remediation	1
H07	Highways; Streets; Airfield Paving; Parking Lots	2
I03	Industrial Waste Treatment	1
M06	Mining & Mineralogy	1
S04	Sewage Collection, Treatment and Disposal	1
S05	Soils & Geologic Studies; Foundations	2
S07	Solid Wastes; Incineration; Landfill	1
T02	Testing & Inspection Services	2
W02	Water Resources; Hydrology; Ground Water	1
	Instrumentation	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	2
b. Non-Federal Work	2
c. Total Work	4

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

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

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: July 1, 2021

c. NAME AND TITLE: Daniel J. Zrallack, P.E., Asst. Vice President / Branch Manager

Ardaman & Associates, Inc.

ARCHITECT- ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*

PART II - GENERAL QUALIFICATIONS

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

2a. FIRM *(or Branch Office)* NAME
Ardaman & Associates, Inc. (Orlando Division / Corporate)

3. YEAR ESTABLISHED
1959

4. UNIQUE ENTITY IDENTIFIER
060253853

2b. STREET
8008 S. Orange Avenue

5. OWNERSHIP

a. TYPE
Corporation

2c. CITY
Orlando

2d. STATE
FL

2e. ZIP CODE
32809

b. SMALL BUSINESS STATUS

6a. POINT OF CONTACT NAME AND TITLE
Jason M. Parker, P.E., Assistant Vice President

6b. TELEPHONE NUMBER
(407) 855-3860

6c. E-MAIL ADDRESS
jparker@ardaman.com

7. NAME OF FIRM *(If Block 2a is a Branch Office)*
Ardaman & Associates, Inc.
8008 S. Orange Avenue
Orlando, FL 32809

8a. FORMER FIRM NAME(S) *(If any)*

8b. YEAR ESTABLISHED

8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. Number of Employees (1) FIRM	c. Number of Employees (2) BRANCH
02	ADMINISTRATIVE	56	30
08	CADD TECHNICIAN	17	15
14	COMPUTER PROGRAMMER	2	2
15	CONSTRUCTION INSPECTOR	54	20
23	ENVIRONMENTAL ENGINEER	4	1
24	ENVIRONMENTAL SCIENTIST	5	2
27	FOUNDATION / GEOTECHNICAL ENGINEER	95	47
29	GIS SPECIALIST	1	1
30	GEOLOGIST	10	9
40	MATERIALS ENGINEER	3	1
58	TECHNICIAN / ANALYST	92	29
62	WATER RESOURCES ENGINEER	1	1
	DRILLERS	40	11
	Other Employees		
	Total	**380**	**169**

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

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
D02	Dams *(Earth; Rock);* Dikes; Levees	5
E02	Educational Facilities; Classrooms	3
E09	Environmental Impact Studies, Assessments or Statements	5
F05	Forensic Engineering	1
H03	Hazardous, Toxic, Radioactive Waste Remediation	5
H07	Highways; Streets; Airfield Paving; Parking Lots	7
I03	Industrial Waste Treatment	7
M06	Mining & Mineralogy	6
S04	Sewage Collection, Treatment and Disposal	5
S05	Soils & Geologic Studies; Foundations	7
S07	Solid Wastes; Incineration; Landfill	6
T02	Testing & Inspection Services	7
W02	Water Resources; Hydrology; Ground Water	6
A06	Airports; Terminals and Hangars; Freight Handling	5
P12	Power Generation, Transmission, Distribution	6
	Instrumentation	3
	Port / Marina Projects	5

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	4
b. Non-Federal Work	8
c. Total Work	9

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

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

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE
July 1, 2021

c. NAME AND TITLE
Jason M. Parker, P.E., Assistant Vice President

Table of Contents

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

Request for Taxpayer Identification Number and Certification

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

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

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.
TETRA TECH INC.

2 Business name/disregarded entity name, if different from above
TETRA TECH INC.

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.
201 EAST PINE STREET, SUITE 1000

Requester's name and address (optional)

6 City, state, and ZIP code
ORLANDO, FL 32801

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
9	5	–	4	1	4	8	5	1	4

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 ▶** Caroline T Hall | **Date ▶** March 24, 2021

General Instructions

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

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

Purpose of Form

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

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

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

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

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 09/24/2020

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

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

PRODUCER Aon Risk Insurance Services West, Inc. Los Angeles CA Office 707 Wilshire Boulevard Suite 2600 Los Angeles CA 90017-0460 USA	**CONTACT NAME:** **PHONE (A/C. No. Ext):** (866) 283-7122 **FAX (A/C. No.):** (800) 363-0105 **E-MAIL ADDRESS:**
INSURED Tetra Tech, Inc. 201 East Pine Street Suite 1000 Orlando FL 32801 USA	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A:** Lexington Insurance Company 19437 **INSURER B:** Zurich American Ins Co 16535 **INSURER C:** American International Group UK Ltd AA1120187 **INSURER D:** **INSURER E:** **INSURER F:**

COVERAGES **CERTIFICATE NUMBER:** 570084053666 **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. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR X X,C,U Coverage GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:			GLO181740602	10/01/2020	10/01/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$2,000,000 $1,000,000 $10,000 $2,000,000 $4,000,000 $4,000,000
B	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			BAP 1857085 02	10/01/2020	10/01/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$5,000,000
C	X **UMBRELLA LIAB** X OCCUR **EXCESS LIAB** CLAIMS-MADE DED X RETENTION $100,000			62785232	10/01/2020	10/01/2021	EACH OCCURRENCE AGGREGATE	$10,000,000 $10,000,000
B B	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WC254061602 WC185708702	10/01/2020 10/01/2020	10/01/2021 10/01/2021	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	 $1,000,000 $1,000,000 $1,000,000
A	Env Contr Prof			028182375 Prof/Poll Liab SIR applies per policy terms & conditions	10/01/2019	10/01/2021	Each Claim Agggregate	$1,000,000 $1,000,000

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

RE: Job Description: Contract Number: 20170121. City of Port St. Lucie, a municipality of the State of Florida, its officers, employees and agents and Contract #20170121 McCarty Ranch Master Water Supply Plan are included as Additional Insured in accordance with the policy provisions of the General Liability and Automobile Liability policies as required by written contract. General Liability policy evidenced herein is Primary to other insurance available to Additional Insured, but only in accordance with the policy's provisions as required by written contract. A Waiver of Subrogation is granted in favor of Certificate Holder in accordance with the policy provisions of the General Liability, Automobile Liability and Workers' Compensation policies as required by written contract. Stop Gap Coverage for the following states: OH, ND, WA, WY.

CERTIFICATE HOLDER

City of Port St. Lucie, Florida
121 S.W. Port St. Lucie Boulevard
Port St. Lucie FL 34984-5099 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.

Holder Identifier : FGHLMZ2

Certificate No : 570084053666

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

Blanket Notification to Others of Cancellation or Non-Renewal

ZURICH

Policy No.	Eff. Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer No.	Add'l. Prem	Return Prem.
BAP 1857085-02	10/01/2020	10/01/2021		75272000	INCL	

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the:

Commercial Automobile Coverage Part

A. If we cancel or non-renew this Coverage Part by written notice to the first Named Insured, we will mail or deliver notification that such Coverage Part has been cancelled or non-renewed to each person or organization shown in a list provided to us by the first Named Insured if you are required by written contact or written agreement to provide such notification. However, such notification will not be mailed or delivered if a conditional notice of renewal has been sent to the first Named Insured. Such list:

1. Must be provided to us prior to cancellation or non-renewal;
2. Must contain the names and addresses of only the persons or organizations requiring notification that such Coverage Part has been cancelled or non-renewed; and
3. Must be in an electronic format that is acceptable to us.

B. Our notification as described in Paragraph **A.** of this endorsement will be based on the most recent list in our records as of the date the notice of cancellation or non-renewal is mailed or delivered to the first Named Insured. We will mail or deliver such notification to each person or organization shown in the list:

1. Within seven days of the effective date of the notice of cancellation, if we cancel for non-payment of premium; or
2. At least 30 days prior to the effective date of:
   a. Cancellation, if cancelled for any reason other than nonpayment of premium; or
   b. Non-renewal, but not including conditional notice of renewal.

C. Our mailing or delivery of notification described in Paragraphs **A.** and **B.** of this endorsement is intended as a courtesy only. Our failure to provide such mailing or delivery will not:

1. Extend the Coverage Part cancellation or non-renewal date;
2. Negate the cancellation or non-renewal; or
3. Provide any additional insurance that would not have been provided in the absence of this endorsement.

D. We are not responsible for the accuracy, integrity, timeliness and validity of information contained in the list provided to us as described in Paragraphs **A.** and **B.** of this endorsement.

All other terms and conditions of this policy remain unchanged.

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY **WC 00 03 13**

POLICY NUMBER: WC 2540616-02 (Ed. 4-84)

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

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

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

Schedule

ALL PERSONS AND/OR ORGANIZATIONS THAT ARE REQUIRED BY WRITTEN CONTRACT OR AGREEMENT WITH THE INSURED, EXECUTED PRIOR TO THE ACCIDENT OR LOSS, THAT WAIVER OF SUBROGATION BE PROVIDED UNDER THIS POLICY FOR WORK PERFORMED BY YOU FOR THAT PERSON AND/OR ORGANIZATION

WC 00 03 13
(Ed. 4-84)

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY **WC 42 03 04 B**

POLICY NUMBER: WC 2540616-02 (Ed. 6-14)

TEXAS WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

This endorsement applies only to the insurance provided by the policy because Texas is shown in Item 3.A. of the Information Page

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule, but this waiver applies only with respect to bodily injury arising out of the operations described in the Schedule where you are required by a written contract to obtain this waiver from us.

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

The premium for this endorsement is shown in the Schedule.

Schedule

1. (☐) Specific Waiver
   Name of person or organization

   (☒) Blanket Waiver
   Any person or organization for whom the Named Insured has agreed by written contract to furnish this waiver.

2. Operations:
   ALL PERSONS AND/OR ORGANIZATIONS THAT ARE REQUIRED BY WRITTEN CONTRACT OR AGREEMENT WITH THE INSURED, EXECUTED PRIOR TO THE ACCIDENT OR LOSS, THAT WAIVER OF SUBROGATION BE PROVIDED UNDER THIS POLICY FOR WORK PERFORMED BY YOU FOR THAT PERSON AND/OR ORGANIZATION.

3. Premium:
   The premium charge for this endorsement shall be _____ percent of the premium developed on payroll in connection with work performed for the above person(s) or organization(s) arising out of the operations described.

4. Advance Premium:

WC 42 03 04 B
(Ed. 6-14)

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY **WC 43 03 05**

POLICY NUMBER: WC 2540616-02 (Ed. 7-00)

UTAH WAIVER OF SUBROGATION ENDORSEMENT

This endorsement applies only to the insurance provided by the policy because Utah is shown in Item 3.A. of the Information Page.

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

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule. Our waiver of rights does not release your employees' rights against third parties and does not release our authority as trustee of claims against third parties.

Schedule

ALL PERSONS AND/OR ORGANIZATIONS THAT ARE REQUIRED BY WRITTEN CONTRACT OR AGREEMENT WITH THE INSURED, EXECUTED PRIOR TO THE ACCIDENT OR LOSS, THAT WAIVER OF SUBROGATION BE PROVIDED UNDER THIS POLICY FOR WORK PERFORMED BY YOU FOR THAT PERSON AND/OR ORGANIZATION.

WC 43 03 05
(Ed. 7-00)

Commercial Marine Hull Policy

LIBERTY MUTUAL INSURANCE COMPANY

(A Massachusetts Stock Insurance Company, hereinafter the "Company")

Effective Date:	10/1/2020
Policy Number:	LIUH-00270-03
Issued To:	Tetra Tech, Inc.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL ASSUREDSAND WAIVER OF SUBROGATION ENDORSEMENT

It is agreed that this policy also covers the subsidiary, affiliated, or interrelated companies of the Assured be the owners and/or charterers and/or operators and/or in whatever capacity. It is further agreed that these insurers waive any right of subrogation against said subsidiary, affiliated or interrelated companies of the Assured and/or their vessel. Such provision shall be granted at the specific written request of the Insured prior to loss or causality.

Privilege is hereby granted the Assured to name others as required by written contract or for whom the Assured is performing work as additional assureds on the policy, provided the Assured shall have exercised this option prior to the loss. Privilege is also granted the Assured to release from liability others as required by contract or for whom the Assured is performing operations or who are performing operations for the Assured, provided the Assured shall have exercised this option in writing prior to loss and these insurers waive all rights of subrogation against any parties so released. Any phraseology required to be incorporated in this policy by parties favored by the Assured with any of the above options shall be deemed to be incorporated herein, but to no greater extent than the privilege allowed by the above options.

Notwithstanding the proceeding provisions, no party shall be deemed and additional Assured or favored with a waiver of subrogation on any vessel insured hereunder which not actually engaged or involved in the intended operations at the time of the loss, if any.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

1 1

M-1231-HULL-E020(08-14)

ENDORSEMENT

This endorsement, effective 12:01 AM 10/01/2019

Forms a part of policy no.: 028182375

Issued to: TETRA TECH, INC., ET AL

By: LEXINGTON INSURANCE COMPANY

ADVICE OF CANCELLATION TO ENTITIES OTHER THAN THE NAMED INSURED LIMITED TO E-MAIL NOTIFICATION

This policy is amended as follows:

In the event that the **Insurer** cancels this policy for any reason other than non payment of premium, and

1. The cancellation effective date is prior to this policy's expiration date;

2. The **First Named Insured** is under an existing contractual obligation to notify a certificate holder when this policy is canceled (hereinafter, the "Certificate Holder(s)"); and has provided to the **Insurer**, either directly or through its broker of record, the email address of the contact at such entity,

and the **Insurer** received this information after the **First Named Insured** receives notice of cancellation of this policy and prior to this policy's cancellation effective date, via an electronic spreadsheet that is acceptable to the **Insurer**,

the **Insurer** will provide advice of cancellation (the "Advice") via e-mail to such Certificate Holders.

Proof of the **Insurer** emailing the Advice, using the information provided by the **First Named Insured**, will serve as proof that the **Insurer** has fully satisfied its obligations under this endorsement.

This endorsement does not affect, in any way, coverage provided under this policy or the cancellation of this policy or the effective date thereof, nor shall this endorsement invest any rights in any entity not insured under this policy.

The following Definitions apply to this endorsement:

1. **First Named Insured** means the Named Insured shown on the Declarations Page of this policy.
2. **Insurer** means the insurance company shown in the header on the Declarations Page of this policy.

All other terms, conditions and exclusions shall remain the same.

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY **WC 99 06 43**

BLANKET NOTIFICATION TO OTHERS OF CANCELLATION OR NONRENEWAL ENDORSEMENT

This endorsement adds the following to Part Six of the policy.

PART SIX
CONDITIONS

Blanket Notification to Others of Cancellation or Nonrenewal

1. If we cancel or non-renew this policy by written notice to you, we will mail or deliver notification that such policy has been cancelled or non-renewed to each person or organization shown in a list provided to us by you if you are required by written contract or written agreement to provide such notification. However, such notification will not be mailed or delivered if a conditional notice of renewal has been sent to you. Such list:
   a. Must be provided to us prior to cancellation or non-renewal;
   b. Must contain the names and addresses of only the persons or organizations requiring notification that such policy has been cancelled or non-renewed; and
   c. Must be in an electronic format that is acceptable to us.
2. Our notification as described in Paragraph 1. above will be based on the most recent list in our records as of the date the notice of cancellation or non-renewal is mailed or delivered to you. We will mail or deliver such notification to each person or organization shown in the list:
   a. Within seven days of the effective date of the notice of cancellation, if we cancel for non-payment of premium; or
   b. At least 30 days prior to the effective date of:
      (1) Cancellation, if cancelled for any reason other than nonpayment of premium; or
      (2) Non-renewal, but not including conditional notice of renewal.
3. Our mailing or delivery of notification described in Paragraphs 1. and 2. above is intended as a courtesy only. Our failure to provide such mailing or delivery will not:
   a. Extend the policy cancellation or non-renewal date;
   b. Negate the cancellation or non-renewal; or
   c. Provide any additional insurance that would not have been provided in the absence of this endorsement.
4. We are not responsible for the accuracy, integrity, timeliness and validity of information contained in the list provided to us as described in Paragraphs 1. and 2. above.

All other terms and conditions of this policy remain unchanged.

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

Endorsement Effective
Insured

Policy No.
WC 1857087-02

Endorsement No.
Premium $

Insurance Company
ZURICH AMERICAN INSURANCE COMPANY

BUSINESS LICENSES & CERTIFICATIONS

2020 - 2021

CITY OF ORLANDO
PERMITTING SERVICES

Local Business Tax Receipt

(Formerly known as "Business License " changed per state law HB1269-2006)

NOTICE-THIS TAX RECEIPT ONLY EVIDENCES PAYMENT OF THE LOCAL BUSINESS TAX PURSUANT TO CH.205, FLORIDA STATUTES. IT DOES NOT PERMIT THE HOLDER TO OPERATE IN VIOLATION OF ANY CITY, STATE, OR FEDERAL LAW. CITY PERMITTING MUST BE NOTIFIED OF ANY MATERIAL CHANGE TO THE INFORMATION FOUND HEREIN BELOW. THIS RECEIPT DOES NOT CONSTITUTE AN ENDORSEMENT OR APPROVAL OF THE HOLDER'S SKILL OR COMPETENTCY.

Business Name
JON D FOX/TETRA TECH INC
201 E PINE ST SUITE 1000
ORLANDO, FL 32801

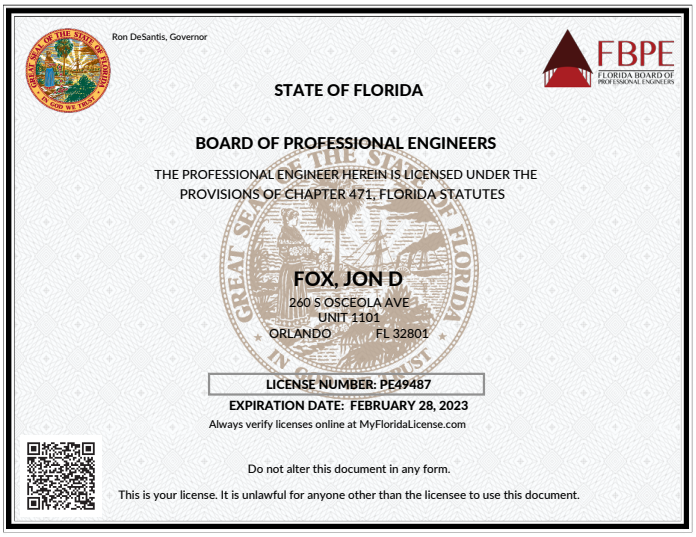
Case Number: BUS-0014941
Issued Date: 09/11/2020
Expiration Date: 09/30/2021

Business Owner
TETRA TECH INC

Business type(s):

Description	Year
PROFES 8005 ENGINEER	2021

Business Location
201 E PINE ST
ORLANDO, FL



Ron DeSantis, Governor

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

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

FOX, JON D
260 S OSCEOLA AVE
UNIT 1101
ORLANDO FL 32801

LICENSE NUMBER: PE49487
EXPIRATION DATE: FEBRUARY 28, 2023
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 TETRA TECH, INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on April 28, 1988.

The document number of this corporation is P19034.

I further certify that said corporation has paid all fees due this office through December 31, 2021, that its most recent annual report/uniform business report was filed on January 4, 2021, 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 Fourth day of January, 2021

Secretary of State

Tracking Number: 1380301146CC

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

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

PAID: $50.00 0099-00950666 7/29/2020

Tax Collector Scott Randolph — Local Business Tax Receipt — Orange County, Florida

This local Business Tax Receipt is in addition to and not in lieu of any other tax required by law or municipal ordinance. Businesses are subject to regulation of zoning, health and other lawful authorities. This receipt is valid from October 1 through September 30 of receipt year. **Delinquent penalty is added October 1.**

2020 EXPIRES 9/30/2021

5000-1045045

5000 BUSINESS OFFICE $50.00 47 EMPLOYEES

SCOTT RANDOLPH, TAX COLLECTOR — ORANGE COUNTY, FLORIDA

TOTAL TAX	$50.00
PREVIOUSLY PAID	$50.00
TOTAL DUE	$0.00

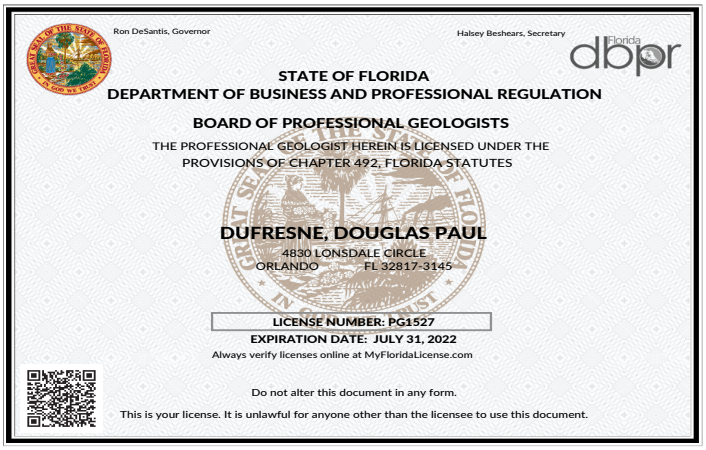
TETRA TECH INC

TETRA TECH INC
201 E PINE ST STE 1000
ORLANDO FL 32801-2723

201 E PINE ST #1000
A - ORLANDO, 32801

PAID: $50.00 0099-00950666 7/29/2020

This receipt is official when validated by the Tax Collector.



Ron DeSantis, Governor — Halsey Beshears, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL GEOLOGISTS

THE PROFESSIONAL GEOLOGIST HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 492, FLORIDA STATUTES

DUFRESNE, DOUGLAS PAUL
4830 LONSDALE CIRCLE
ORLANDO FL 32817-3145

LICENSE NUMBER: PG1527
EXPIRATION DATE: JULY 31, 2022
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.

LAWRENCE EDWARD JENKINS
324 KIWANIS CIR, CHULUOTA, FL 32766-9637

Complaints 0
Print

License Type	License#	Issued	Expires	Status
Surveyor and Mapper	LS5364	07/06/94	02/28/23	Active

Newly passed Florida legislation “Occupational Freedom and Opportunity Act” (effective July 1, 2020) eliminates separate business licenses for architects, geologists, and landscape architects who already hold an individual license. Therefore, we’ve included Tetra Tech Vice President Jon Fox’s professional engineering license to meet the RFQ request.

TETRA TECH

August 16, 2021

City of Port St. Lucie
Procurement Management Department
121 SW Port St. Lucie Boulevard
Port St. Lucie, FL 34984-5099

Re: eRFP # 20210093 Request for Proposal:
Continuing Engineering Services for Utility Projects

Dear Members of the Selection Committee,

Tetra Tech, Inc. began serving the City of Port St. Lucie in 1994 as their representative during acquisition of the local water and wastewater infrastructure from St. Lucie County. For the past 27 years since, our key team members have provided engineering and consulting services to your Utility Systems Department on a number of water and wastewater related assignments, including the design of both of your reverse osmosis water treatment plants and the more recent completion of the McCarty Ranch Water Supply Plan.

Within this proposal you will read about our unique approach and ability to serve rhe City of Port St. Lucie. A summary of a few key items follows:

FULL SERVICE FIRM. Tetra Tech is a full-service engineering firm, providing planning, permitting, civil, structural, mechanical, electrical, instrumentation and environmental engineering, hydrogeological, survey, architectural, and environmental science services throughout Florida and nationwide for over 50 years. Our firm has provided local water, wastewater and reclaimed water utility related engineering services to communities throughout Florida and across the US similar to the services anticipated under this contract.

QUALIFIED IN-HOUSE STAFF. The team presented herein has significant qualifications and experience in all aspects of municipal utility service. Many of our key staff, including Jill Manning Hudkins, Jarrett Kinslow and myself have all worked with the City of Port St. Lucie after the City acquired the Utility from St. Lucie County. This knowledge of your system, staff and procedures provides the City with a significant benefit in efficiency with no learning curve. They are backed up by professionals in our Orlando offices who provide planning, electrical and instrumentation, mechanical, water and wastewater, hydrogeological, civil and surveying services.

NATIONALLY RANKED EXPERTISE. Tetra Tech has been ranked #1 in Water by ENR for the past 18 years consecutively. Our philosophy is to provide our clients with this national expertise and great resources coupled with the service of a local firm.

Tetra Tech would like to take the opportunity to acknowledge the receipt of Addendum Nos. 1 through 4, as put forth by the City for this RFP. We are pleased to submit our technical qualifications in response to RFP #20180148. We believe that Tetra Tech offers the City of Port St. Lucie unparalleled history, knowledge and technical experience for any project under this contract and we are excited at the opportunity to continue to serve you for the next 27 years and beyond.

Sincerely,

James E. Christopher, PE
Vice President / Client Service Manager
(407) 480-3907 | James.Christopher@tetratech.com

1 LOCATION

eRFP: Proposer's Location - Number of miles from City Hall to assigned staff's office location.

Office Locations
Where Work Will Be Performed

Continuing Services
201 E. Pine Street
Ste. 1000
Orlando, FL 32801

Geotechnical Services
460 NW Concourse Place
Unit 1
Port St. Lucie, FL 34986

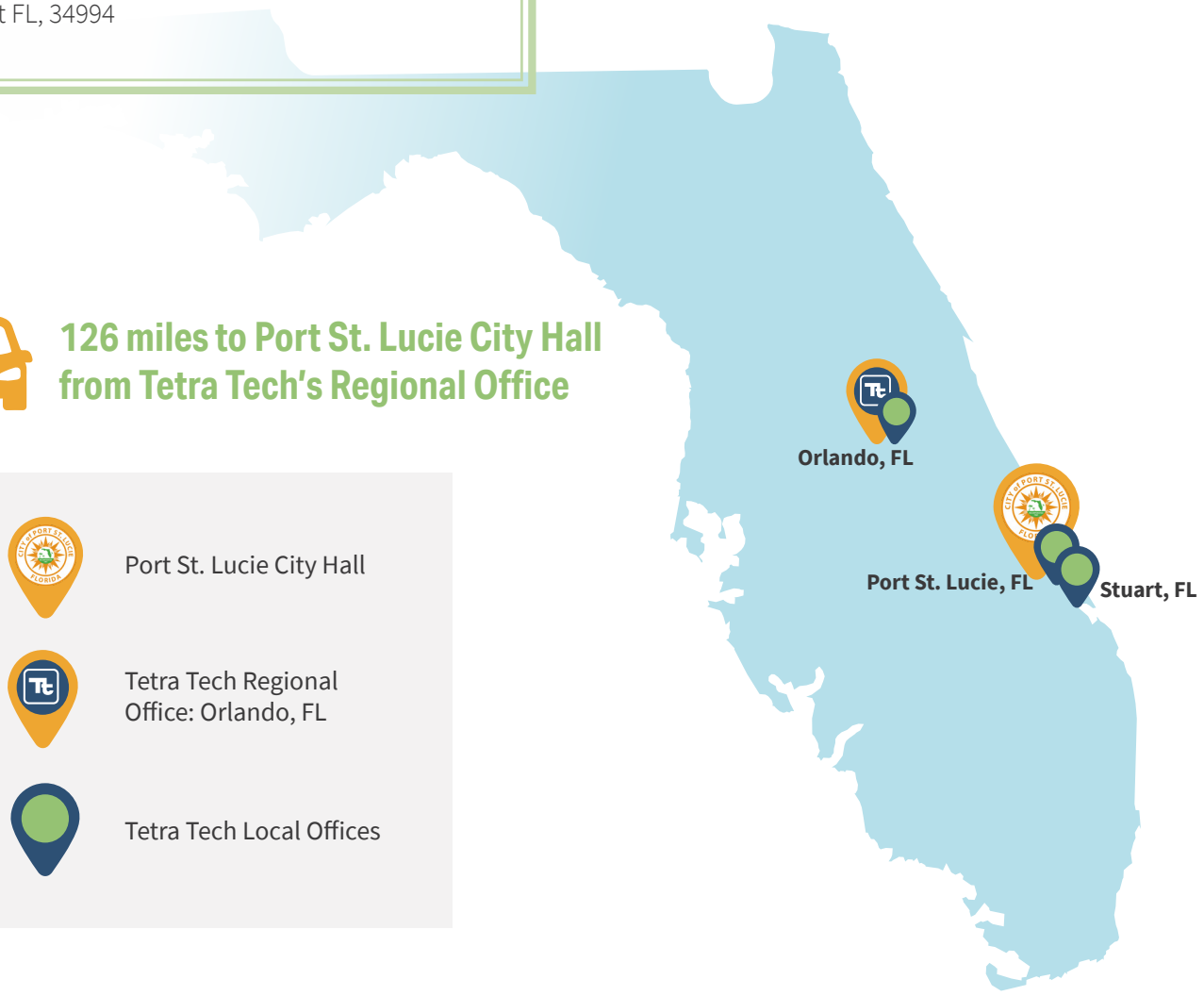
Environmental Services
759 S. Federal Hwy.
Ste. 314
Stuart FL, 34994

Hydrological Services
8008 S. Orange Avenue
Orlando, FL 32909

The majority of work under this contract will be performed out of Tetra Tech's regional headquarters located in Orlando, FL. Tetra Tech will also manage and perform various specialty services from our local nearby offices as detailed in the map below.

Tetra Tech has an excellent working relationship with the City of Port St. Lucie, having provided engineering and professional services to the City for over 25 years; we are a national firm with local in-house resources.

126 miles to Port St. Lucie City Hall from Tetra Tech's Regional Office



Port St. Lucie City Hall

Tetra Tech Regional Office: Orlando, FL

Tetra Tech Local Offices

3 EXECUTIVE SUMMARY

Introduction

As one of the fastest growing areas not only in Florida, but the entire US, the City of Port St. Lucie (City) has made significant investments in its infrastructure to support rapid residential and commercial development, while promoting environmental protection, enhancing its communities, and providing a catalyst for economic development. With state-of-the-art facilities and miles of collection, transmission, and distribution piping, the City is seeking qualified firms to support their day-to-day operations of their utility infrastructures. As one of the leading consulting firms in the US, Tetra Tech is uniquely qualified to provide continuing utility services to the City under this contract.

Why Tetra Tech?

Tetra Tech has provided the City with exceptional engineering and consulting services since 1994 — The City of Port St. Lucie is one of our most valued clients and we will provide you with a team of experienced and qualified professionals to meet all of your utility needs. Tetra Tech has the organizational framework and management structure needed to effectively and efficiently coordinate staff efforts, resources, and procedures for each task assigned. Our objective is to have every task order executed efficiently and provide the City with maximum value.

Firm Profile

Tetra Tech is a global full-service engineering consulting firm that has shared a close working relationship with the City of Port St. Lucie for over 25 years on numerous projects of varying size and scope. With over 720 professionals throughout Florida, Tetra Tech offers proven experience and demonstrated excellence in providing continuing engineering services across a range of disciplines including civil, water treatment, wastewater treatment, hydrogeological, mechanical, electrical, environmental, geotechnical, and structural engineering; surveying; architecture; mapping/GIS services; Supervisory Control and Data Acquisition (SCADA); utility planning; and construction inspection services.

As proven through over two decades of projects delivered to the City, we have complete in-house capabilities to provide the necessary professional services for the types of projects listed under the current utility service contract. We help find long-term, cost-effective solutions to the challenges that come from these infrastructures.

It is our core belief that our professionals and staff serve as an extension of the City. We place a large emphasis on serving the specific project needs and tasks of our clients, while maintaining and updating an in-depth library of knowledge.

Industry Leadership

Leading with Science® drives our core principles and passion for delivering safe, accessible water resources. This is represented by maintaining our **Number 1 ranking in Water** for 18 consecutive years by *Engineering News-Record* (ENR). Our award-winning team has been recognized for innovation and dedication over the years, and we strive to bring that perspective to each new contract. We will provide services with the innovation and capabilities our national rankings represent and will deliver our services with responsiveness and attentiveness that the City expects.

We Know Port St. Lucie

Since the mid-1990s, Tetra Tech has worked with the City and its staff from day one to assist in the inspection of the water and wastewater infrastructure owned and operated at that time by General Development Utilities (GDU). For over 25 years, Tetra Tech has provided planning, permitting, design, and construction administration services for various water and wastewater projects. Our team members proposed for this continuing utility contract led the planning, design, and permitting for the original 4.0 MGD ROWTP at the Prineville WTP site. The Prineville ROWTP facility was later expanded to 10.0 MGD by adding additional raw water supply wells, micron filters, high pressure pumps, RO skids, and appurtenances. Tetra Tech also provided the design, permitting, and construction services for the expansion to 10.0 MGD. The raw water for the new ROWTP is supplied from the new Floridan aquifer wellfield that was also designed by Tetra Tech and constructed under a separate construction contract.

Tetra Tech understands that the City of Port St. Lucie will be utilizing the Continuing Engineering Services for Utility Projects contract to oversee study, planning, construction, and related activities of critical utility projects throughout the City.

We offer an established and trusted relationship with the City in addition to extensive knowledge of the City's water and wastewater facilities and utility systems. Pairing this with our national expertise, experience with similar utility contracts, and in-depth understanding of your plants, Tetra Tech can help the City benefit from our knowledge of the latest technical advances, while also providing cost-effective services.

Approach to Performing the Work

Successful projects are the result of a combination of strategic planning, quality engineering, and effective communication. Our team is staffed with numerous qualified professionals with extensive experience. Equally important, our management approach for this project was specifically developed to ensure proper communication and coordination among team members and your staff.

Tetra Tech works with our clients to successfully plan, design, permit, and construct capital improvement projects. We actively apply quality assurance and quality control practices to our work in order to deliver the highest level of service. Our firm maintains a strong working knowledge of local, state, and federal regulations.

Understanding of Required Services

To the benefit the City of Port St Lucie, Tetra Tech brings significant Florida continuing consultant contract experience. Working on these types of contracts for decades has built us an extensive resume for the firm and extensive similar project experience for our professional staff.

Our portfolio includes hundreds of projects from minor pipeline improvements and lift station upgrades to treatment plant improvements and expansions. Through efficient management and leadership, our professionals have worked as an extension of our client's staff providing similar engineering services on an as-needed basis for over 30 clients across Florida under continuing services contracts. We understand the unique nature of these types of contracts and the necessity to provide timely responses while maintaining tight schedules and limited budgets.

Since continuing engineering services contracts include multiple and varied tasks, Tetra Tech begins planning early in the project to provide the correct skilled staff and appropriate resources to complete all assigned tasks on time and within established budgets. During our review of assigned tasks, we actively integrate lessons learned from previous projects, which increases efficiency and reduces the potential of schedule delays due to unanticipated issues. Our goal is to develop a deeper understanding of client operations, processes and procedures, and develop customized solutions.

Our portfolio with the City includes several projects including studies, design, permitting, bidding, and construction administration services from wastewater collection, transmission, and treatment facilities to expansion of the City's reclaimed water system in the southwest service area and water distribution system.

Selection of Your Project Team

Tetra Tech has assembled a proven and trusted team of professionals with extensive experience and expertise.

We are committing project team members that you are familiar working with from previous projects for this contract. Our project team has been chosen because of their past experience with the City, their ability to provide specialized services as required from this contract, and their availability to commit to the City's needs. Not only does our team bring together an extensive library of past experience on similar projects for other municipal clients, we also bring a deep understanding of the City's facilities and infrastructure. Tetra Tech has the team to be the City's partner for all of your utility needs.

Tetra Tech understands the importance of providing team members with:

- Relevant project experience
- Expertise to complete any type of assignment
- Availability to complete projects on time and within budget
- Responsiveness to the City, at a moment's notice
- Passion and commitment to better our local communities

Proposed team members Jon Fox and Jill Hudkins have all been involved in a number of water and wastewater projects for the City dating back to the original 1994 acquisition assistance. Additionally, key individuals like Jarrett Kinslow have assisted the City in several projects involving reverse osmosis for brackish water and conducted pilot tests for multiple RO plants. Jarrett's extensive experience and detailed understanding of the JEA plant extends back to the initial planning starting in 2001, continuing through all phases of construction that were completed in 2008. Additionally, Tetra Tech's Drinking Water National Practice Leader James Christopher, has served as the project manager for both the Prineville ROWTP and the James E. Anderson ROWTP expansions. James has an unmatched knowledge of both facilities providing tremendous value to the City for any project needs at either facility. Since the completion of the JEA projects for the City, both James and Jarrett have continued to work as a team on recent projects that have continued to expand our design capabilities for such systems.

The assembled team represents the experience and specific facility knowledge that no other team can offer. Our professionals possess the understanding of existing City facilities that will result in a seamless approach to all projects under this contract.

4 GENERAL SCOPE OF SERVICES

eRFP: Provide a general description of the types of services your firm is capable of providing.

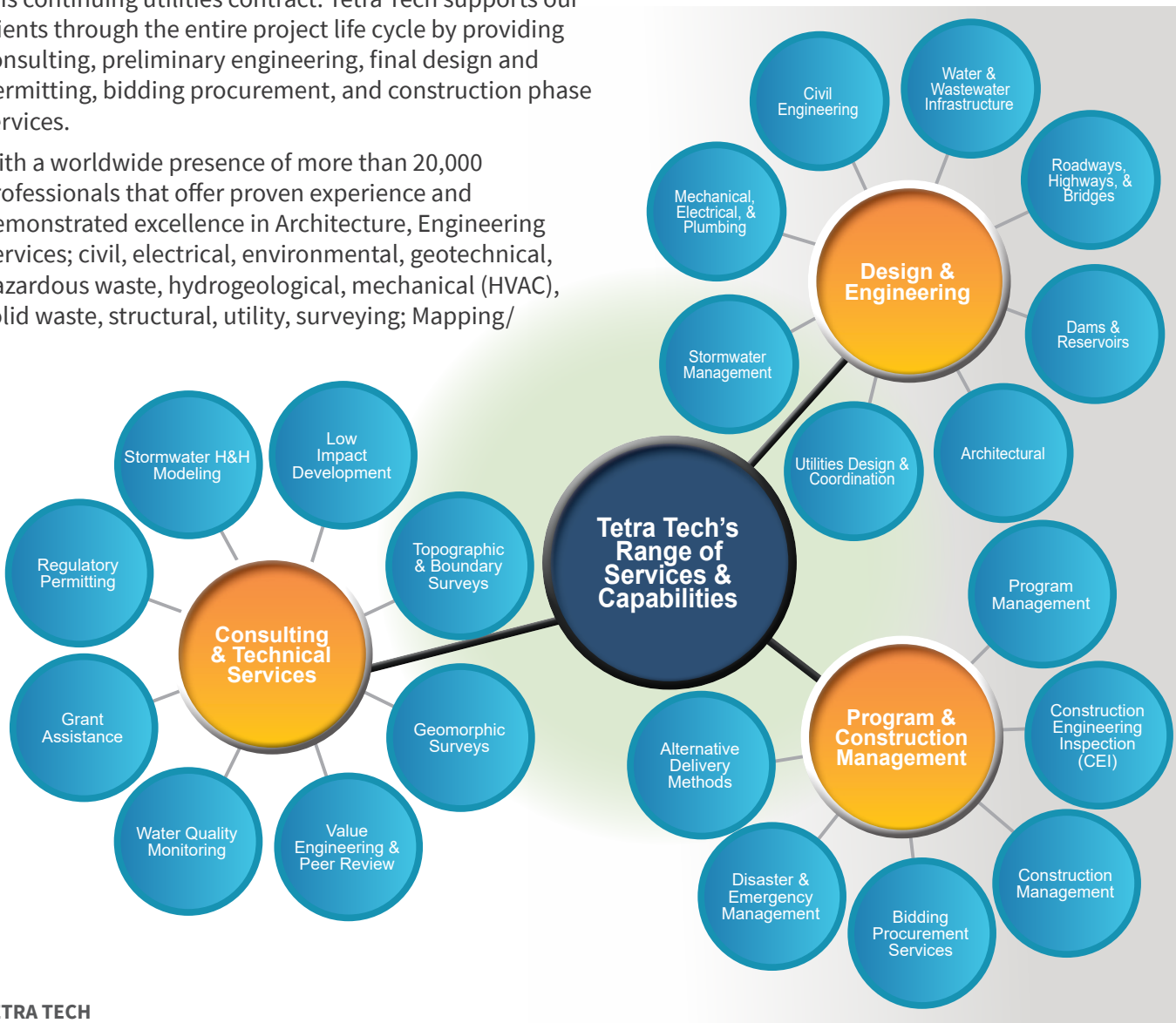
Tetra Tech has provided planning, hydraulic modeling, evaluation, design, permitting, construction management/CEI, funding assistance, SCADA, and public involvement services for water, wastewater, and utility infrastructure projects for over 52 years in the US and over 33 years throughout Florida — We offer to the City of Port St. Lucie a full-service engineering firm with over five decades of proven experience and dedicated excellence in all aspects of utility related projects.

In-House Services

Tetra Tech has a significant range of in-house resources and capabilities allowing us effectively tackle projects of varying size and scope. We are uniquely positioned to bring our deep bench of resources, knowledge, expertise, and breadth of technical competencies to the City under this continuing utilities contract. Tetra Tech supports our clients through the entire project life cycle by providing consulting, preliminary engineering, final design and permitting, bidding procurement, and construction phase services.

With a worldwide presence of more than 20,000 professionals that offer proven experience and demonstrated excellence in Architecture, Engineering Services; civil, electrical, environmental, geotechnical, hazardous waste, hydrogeological, mechanical (HVAC), solid waste, structural, utility, surveying; Mapping/ GIS Services, Planning, Permitting, and Construction Management Services Tetra Tech's commitment to Florida is unmatched.

The graphic below details the broad range of in-house services and expertise that Tetra Tech is able to provide:



5 PROGRAM MANAGEMENT SERVICES

eRFP: Provide a description of the program management services your firm can provide.

Program Management Services

The purpose of program management is to link the projects to the strategy, identify and leverage efficiencies to reduce costs, manage interdependencies between projects, and seek to derive full value from the investment.

Tetra Tech's team offers a foundation of personnel who understand how to successfully deliver large, complex programs involving a variety of stakeholder interests, permits and approvals, and environmental documentation requirements. We are leading experts at providing program management services and our team members will deliver services ranging from strategy, planning, organization, and problem solving to budget, schedule, and quality control. Our key staff are well-versed in these areas of expertise; a number of additional resources will support them with monitoring, managing, and successfully delivering on the Cities' goals and objectives.

Innovative Program Management Solutions

Tetra Tech employs an "adaptive system" for complex program management assignments. Three notable factors that support Program success include: Governance; Integration and Communication; and Leveraging Technology. These factors function hand-in-hand with one another.

- **Governance:** Program success will be determined by meeting the complex requirements of various stakeholders, permitting agencies, and others responsible for the reviews and approvals and meeting the stated Critical Success Factors. In Tetra Tech's experience, strategic organizational vision, powerful, committed sponsors, and skilled program management/leadership are tantamount. The establishment of critical success factors, assigning metrics thereto, and adapting them into a functional Governance model is a critical foundational step for of large, complex programs.
- **Integration and Communication**: Adaptive systems must have constant communication and continuous learning; Tetra Tech focuses on partnering and team integration. Critical to this effort will be establishing and following (internal and external) communication protocols that support the Program's goals and objectives.
- **Leveraging Technology:** Tetra Tech has adapted and adopted a variety of software and technology platforms to support planning, design, procurement, document management, and implementation activities on a wide variety of programs to support the monitoring and execution of activities. Once agreement on programmatic goals, objectives, governance model, and integration and communication tactics are agreed upon, key performance indicators (KPIs) and technology platforms can be selected to support the program.

Prioritizing Needs

In Tetra Tech's experience, working with clients to establish clear goals and objectives and adapting them into a functional Governance model is critical to the success of large, complex programs. Another important step is establishing a partnering framework and integrating the entire team to form a partnership focused on successful delivery. Critical to this effort will be establishing and following (internal and external) communication protocols that support the Program's goals and objectives. This will provide a basis for navigating this Project through the review and approval process. We will begin this effort by developing a strategy using a Must (Have) – Could (Have) – Should (Have) – Would (Like to Have) approach to prioritize goals and objectives and needs of the project.

Stakeholder Engagement

Tetra Tech partners with Cities to develop multi-beneficial solutions and publicizes the value of those solutions to local stakeholders. At the start of those efforts, we classify key stakeholders as Allies – those who

will actively support the project, Opponents – those who will actively oppose the project, and Neutrals – those who could be swayed to become an Ally or Opponent. We will partner with the Cities and its Allies to develop win-win messaging that highlights the value of multi-benefit solutions capable of swaying Neutral stakeholders to support the project.

Legal Coordination

As highlighted above, we identify and segregate key stakeholders into three categories. We understand that stakeholders who oppose the project will implement a strategy that focuses on legal defensibility to withstand legal challenges. Accordingly, Tetra Tech will work closely with the Project's legal team to ensure permit applications, project documents, and other documentation is presented with this in mind. We will provide strategy and technical support to counsel.

Permits and Approvals

Tetra Tech identifies key permits and approvals that will likely be required to implement the Project. Our team members have extensive experience with various agencies throughout Florida as well as the associated procedures and protocols to successfully lead approval efforts. We immediately begin by conceptualizing a strategy and roadmap to integrate document development and expedite approvals; our approach focuses on the integration of permitting development.

The below graphic indicates Tetra Tech's Program Management Services (PMS) with an approach that comprehensively addresses the needs of our clients.

Figure 1.1 - Comprehensive Approach to Address the Cities' Needs

6 PLANNING SUPPORT

eRFP: Describe the types of planning your firm can provide.

Planning Services

Tetra Tech has significant expertise in integrated utility master planning, including the areas of water supply, water diversification, water treatment, water reclamation, water reuse, and utility resiliency. We understand the technical and financial challenges of providing future water supplies that are sustainable, local, and cost-effective. Tetra Tech brings expertise from some of the largest cities across the country including Tampa, Orlando, New York City, San Diego, Los Angeles, San Antonio, Atlanta, Miami, and Detroit, as well as some of the most drought impacted states including Florida, California, Oklahoma, Texas, and Georgia. Tetra Tech is ready and committed to bring this experience to Port St. Lucie to prepare any master plans necessitated by this contract.

Tetra Tech's Relevant Areas of Planning Expertise

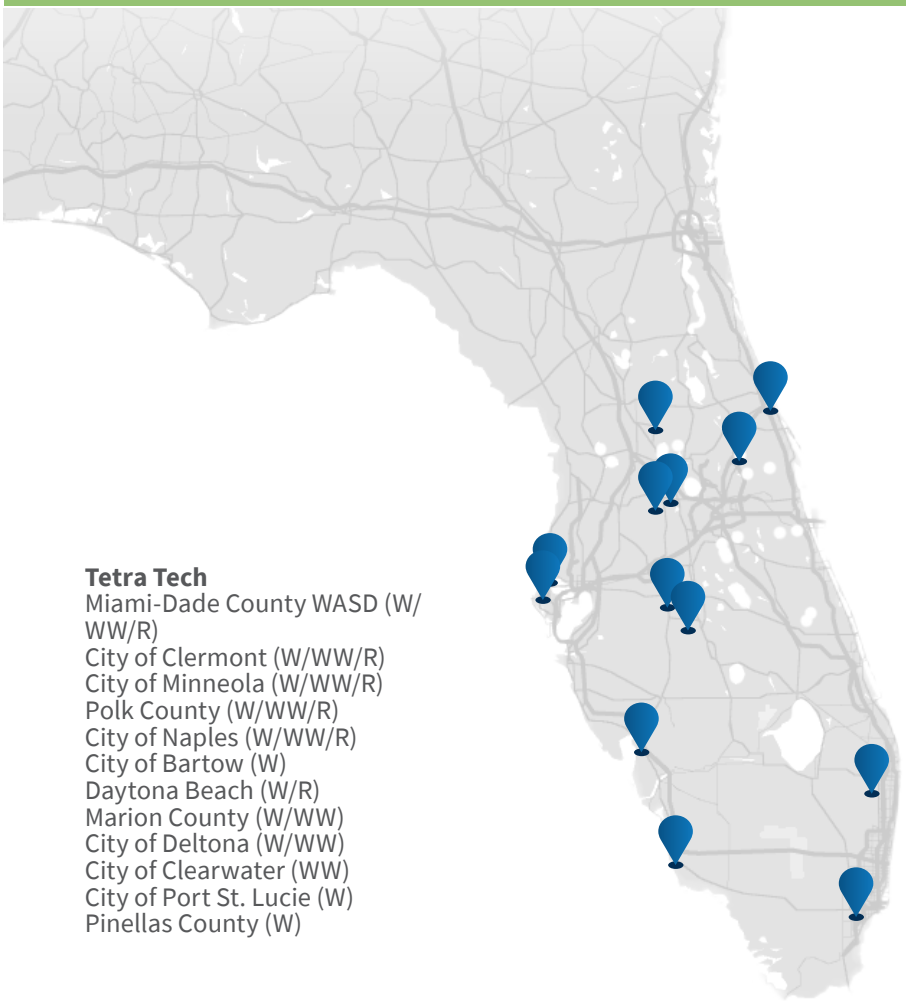
- **Master Planning and Integrated Utility Planning:** Tetra Tech has assisted large, metropolitan water agencies in Miami, Florida; Atlanta, Georgia; and Tulsa, Oklahoma with planning and future water supply planning activities. Tetra Tech is an industry thought leader on Integrated Water Resource Planning and has assisted the USEPA in developing a draft Integrated Water Resource Planning guide titled *Water and Energy Integrated Water Resources Management Handbook*.
- **Asset Management**: Tetra Tech has provided asset management services to a number of major utilities around the nation. Recently, our team assisted the Ypsilanti Community Utilities Authority in Michigan with developing a living tool to inventory and assess the condition of their wastewater infrastructure and evaluated over 4,300 wastewater system assets.
- **Modeling**: Tetra Tech has extensive experience developing and applying models to support informed decision making. Today, Tetra Tech is a nationally recognized leader in hydraulic, hydrogeologic, watershed, water quality/quantity, hydrodynamic, mixing zone, and computational fluid dynamic modeling and analysis. Our staff has supported modeling studies for well over 100 different clients nationally and internationally. Tetra Tech's use of hydraulic modeling ranges from small scale, project specific simulations to system-wide models involving over 100,000 pipe segments.
- **Reclaimed Water for Irrigation and Wetlands**: As reclaimed water becomes more and more important in today's water resources climate, the City of Port St. Lucie should have a consultant that is the recognized and innovative industry leader in water reclamation and reuse strategies. Tetra Tech was a major team member for the design of the Phase I OCWD Groundwater Replenishment Program in California. Tetra Tech has also recently completed a comprehensive, scalable, one-year indirect potable reuse demonstration test for Clearwater, Florida and continues to be the leader is reuse of wastewater.
- **Membrane Treatment**: Tetra Tech has designed a combined 300 MGD of constructed membrane treatment capacity within the last 10 years. Our membrane treatment experience in Florida includes work at North Miami Beach's 32.0 MGD WTP, Miami-Dade County's 20.0 MGD South Miami Heights WTP; Punta Gorda's 8.0 MGD WTP; Port St. Lucie's 22.5 MGD WTP; and Palm Bay's 10.0 MGD WTP.
- **Wastewater**: Our wastewater treatment engineers have combined their expertise in the planning, design, and operation of biological and physical/chemical processes to meet our clients' need for effective, efficient treatment facilities. Our engineers regularly perform process energy audits, comprehensive performance evaluations, and plant optimizations. With recent advances in biological nutrient removal (BNR) processes, the City of Tampa entrusted Tetra Tech to conduct a plant optimization evaluation for their 96.0 MGD Howard F. Curren Advanced Wastewater Treatment Plant, involving significant process modeling that led to a large reduction in operating costs.

- **Sustainable Solutions**: As a recognized leader in sustainability, Tetra Tech can help support Port St. Lucie as a best-in-class utility with a focus on making smart operational and investment decisions to build a financially-sound and operationally-driven sustainable utility. Tetra Tech has extensive experience assisting utilities with developing sustainable solutions across the world. A signature project, Design of SafeWater RI: Ensuring Safe Water for Rhode Island's Future, evaluated the resiliency of water utilities throughout the state. The project provided data collection, assessment of impacts, development of management strategies, and public outreach and education.

Extensive Integrated Master Planning Experience in Florida and Nationally

Our extensive utility master planning experience includes over 50 utility master plans throughout the state of Florida for water, wastewater, and reclaimed water infrastructure. These plans ranged from startup utility systems with growth concerns and specific needs to others which are focused to assure that current infrastructure is in adequate condition and can provide long term sustainability. This experience includes water and wastewater hydraulic modeling and the development of a short and long term capital improvement plan to meet projected demands with the ability to easily update periodically. The map on this page provides a visual overview of Tetra Tech's utility master planning project experience in Florida, that includes developing calibrated hydraulic models, master planning documents, and CIPs. Detailed project overviews are provided on the following two pages for a handful of our most relevant projects across the nation within the past 10 years of similar size and scope.

Our Team's Utility Master Planning Experience in Florida



Tetra Tech
Miami-Dade County WASD (W/WW/R)
City of Clermont (W/WW/R)
City of Minneola (W/WW/R)
Polk County (W/WW/R)
City of Naples (W/WW/R)
City of Bartow (W)
Daytona Beach (W/R)
Marion County (W/WW)
City of Deltona (W/WW)
City of Clearwater (WW)
City of Port St. Lucie (W)
Pinellas County (W)

Our Team Brings Experience Across the Nation for Master Planning Needs

PROJECT, CLIENT/LOCATION (COMPLETION YEAR)	SERVICE TYPE (W - WATER, WW-WASTEWATER, RW - RECLAIMED WATER)	Population forecasting	Water supply evaluation	Demand determination	Hydraulic modeling	Recommendations for Upgrades/Improvements	Planning evaluation of alternatives & opportunities	Identification of current & future regulatory concerns	Capital improvements plan	Asset condition assessment, prioritization, & strategies	Review of business practices	Review of customer service practices
Integrated Water, Wastewater, and Reclaimed Water Master Planning, Miami-Dade County Water & Sewer Department, FL (2019)	W/WW/ RW		●	●	●	●	●	●	●	●		
Integrated Water Resources Planning, City of Naples, FL (06/2009)	W	●	●	●			●	●				
50-Year Water System Master Plan, City of Atlanta, GA (2013)	W	●	●	●	●	●	●	●	●	●		
Integrated Water & Wastewater System Master Plan & CIP Program Development, Tulsa Metropolitan Utility Authority, OK (2012)	W/WW	●	●	●		●	●	●	●		●	●
Northwest Regional Utility Service Area Master Plan Updates, Polk County, FL (2016)	W/WW/ RW	●	●	●	●	●	●	●	●			
Northeast Regional Utility Service Area Master Plan Updates, Polk County, FL (2015)	W	●	●	●	●	●	●	●	●			
Southeast Regional Utility Service Area Master Plan Updates, Polk County, FL (2018)	W/WW		●	●	●	●	●	●	●	●		
Wastewater Collection System Master Plan, City of Clearwater, FL (2019)	WW	●		●	●	●	●	●	●	●	●	●
10-Year Water Supply Facilities Work Plan, City of Clearwater, FL (2017)	W	●	●	●		●	●		●	●		
Integrated Water, Wastewater, and Reclaimed Water Master Plan, City of Minneola, FL (2019)	W/WW/ RW	●		●	●	●	●	●	●			
Integrated Water, Wastewater, and Reclaimed Water Master Plan, City of Clermont, FL (2015)	W/WW/ RW	●		●	●	●	●	●	●			
Pine Valley McCullough Water Treatment Plants Facility Plans, Colorado Springs, CO (2019)	WW			●	●	●	●	●	●	●		
Asset Management Plan, Ypsilanti Community Utilities Authority, MI (2017)	WW					●	●		●	●		
Asset Management Plan, City of East Lansing, MI (2017)	WW					●	●		●	●		
20-Year Reuse Water Master Plan, City of Daytona Beach, FL	RW		●	●	●	●	●	●	●			
McCarty Ranch Water Master Plan, City of Port St. Lucie, FL (2019)	W	●	●	●	●	●	●	●	●			
20-Year Water and Wastewater Master Plan, City of Eagle Pass, TX (2018)	W/WW	●		●	●	●	●	●	●			
Charlotte Harbor Association Water System Master Plan, Punta Gorda, FL	W	●		●	●	●	●	●	●	●		

Miami-Dade Integrated Water, Wastewater, & Reclaimed Water Utility Master Plan

SCOPE: Tetra Tech is providing engineering services for water, wastewater, groundwater, and reclaimed water for the planning, design, and assistance with the continuation of various program components and Capital Improvement Projects delivery. Miami-Dade Water and Sewer Department (MDWASD) serves nearly 2.3 million residents and thousands of visitors on a daily basis. To continue to fulfill the department's vision of continuous delivery of high-quality drinking water and wastewater services in compliance with all regulatory requirements, MDWASD has planned an integrated multi-year CIP, which incorporates asset management, system growth, climate change resiliency and other considerations.

KEY STAFF

- James Christopher; Janine Alexander; Andrew Woodcock; Jill Hudkins; Jose Davila; Adrian Valdes; Christopher Zavatsky; Alberto Abarca; Alex Montalvo; David MacNevin; Diana Santander

HIGHLIGHTS

- Utility master planning for water, wastewater, groundwater, and reclaimed water
- Water and wastewater systems are comprised of multiple sub-systems
- Included asset condition assessment and management
- CIP developed from asset management, resiliency, and operational optimizations

Tulsa Integrated Water & Wastewater System Master Plan and CIP Program

SCOPE: The Tulsa Metropolitan Utility Authority (TMUA) commissioned a multidisciplinary team to perform a comprehensive assessment of all facets of its water and sewer operations and infrastructure with the goal of developing an integrated 50-year business plan for its water and wastewater utility. Tetra Tech was responsible for developing the 50-year service area growth projections and the wastewater collection system analysis, which included both a hydraulic analysis using the City's InfoWorks CS model and a condition assessment. Using an advanced software optimization engine, more than 500,000 hydraulic model simulations of the City 's wastewater collection system were performed to identify the most cost-effective combination of relief lines, I&I abatement, and potential WWTP improvements.

KEY STAFF

- Andrew Woodcock; James Christopher; Jill Hudkins

HIGHLIGHTS

- Current and future market opportunities evaluation
- Strategic options analysis
- Operations and maintenance efficiency study
- Integrated 50 year water resource planning

Colorado Springs Utilities Pine Valley McCullough Water Treatment Plants Facility Plans

SCOPE: Colorado Spring Utilities (Utilities) retained Tetra Tech to complete the facility and asset management plan for the Pine Valley and McCullough Water Treatment Plants (WTPs). Pine Valley WTP (84 mgd) and McCullough WTP (75 mgd) are conventional filtration plants with coagulation, flocculation, sedimentation, filtration and disinfection processes. The work includes data collection, demand projections, hydraulic evaluation, water quality criteria analyses, regulatory compliance evaluation, individual unit process and design criteria evaluation, condition assessments for process mechanical, mechanical, instrumentation, electrical, structural and site civil assets and facility-wide assets, and a 20-year prioritized capital improvements plan.

KEY STAFF

- Andrew Woodcock; James Christopher

HIGHLIGHTS

- Integrated master planning program incorporating water supply treatment and distribution systems
- Detailed condition assessment of two water treatment facilities totaling 160 MGD in capacity
- Condition assessment using International Infrastructure Management protocol
- Capital planning coordination and prioritization

Clearwater 20-Year Wastewater Collection System Master Plan

SCOPE: The City of Clearwater's collection system consists of 72 pump stations 370 mile of gravity sewer, 38 miles of force main and over 8,300 manholes spread over three wastewater service areas. The field work for the master plan consisted of a condition analysis and drawdown test of all lift stations and air release valves as well as a review of gravity sewer CCTV data and identification of areas with high incidences of SSOs. All assets were assigned a condition and criticality based on the field review and a business risk evaluation was performed to assist in identifying areas of concern and prioritizing capital projects. The results of the condition assessment and business risk evaluation were linked with the City's existing GIS and asset management platform. A hydraulic model of the collection system was developed, calibrated and verified to predict current system performance, identify levels of services and develop capital improvements to meet projected needs.

KEY STAFF

- Andrew Woodcock; Alex Montalvo

HIGHLIGHTS

- Fully calibrated wastewater collection system model
- Lift Station and collection system condition assessment based on field investigations and PACP codes
- Capacity, Management, Operations and Maintenance (CMOM) Analysis involving a review and evaluation of operations and maintenance practices, capital planning procedures, and management information systems
- Developed a business risk analysis for the full system evaluating probability and consequence of failure

8 DESIGN SUPPORT

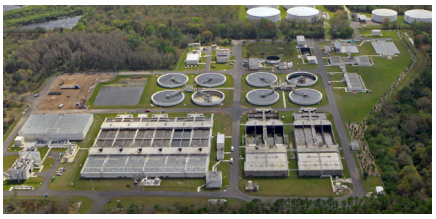
eRFP: Provide a list of at least 5 but no more than 10 projects within the last 5 years that your firm has done and describe what types of projects and services your firm provided...

Central Water Integration Pipeline (CWIP)

San Antonio, Texas

Apopka WRF Expansion

Apopka, Florida



Northwest Regional WRF Expansion

Hillsborough County, Florida

Southeast WTP

Huntsville, Alabama

LS 1 and 7 Rehabilitation

Orlando, Florida

Shell Creek WTP RO Addition

Punta Gorda, Florida

Central Water Integration Pipeline (CWIP) Project - Agua Vista WTP

San Antonio, Texas

The San Antonio Water System (SAWS) entered into a contract with Vista Ridge LLC (Project Company) to provide 50,000-acre-feet per year of Carrizo/ Simsboro Aquifer groundwater to meet the growth needs and to diversify the water supply of San Antonio, America's fastest growing city. Under the terms of the agreement, Vista Ridge LLC will build and operate wells and a pipeline system to pump the groundwater from Burleson County and deliver it to SAWS beginning in April 2020 for a period of 30 years.

To ensure the water delivered can be safely and efficiently distributed to the SAWS water system, SAWS engaged Black and Veatch as their owner's representative to prepare an initial assessment of the SAWS system on how best to facilitate the delivery of this new water supply during both maximum and minimum demand periods. This assessment resulted in the preparation of a Design Criteria Package with a conceptual design that identified preliminary direction on the treatment and distribution improvements needed through the construction of new infrastructure and the rehabilitation of existing SAWS facilities and pipelines.

Tetra Tech was selected to design the improvements to the SAWS system as the Central Water Integration Pipeline (CWIP) Project. The project included two tunnels, approximately 3.7 miles of 24 to 54 inch transmission mains, Maltsberger Pump Station Improvements and the Agua Vista Water Treatment Plant. Tetra Tech provided design, bidding, and construction services for a 48.6 MGD treatment plant, conveyance pipelines, and improvements to three existing pump stations to integrate a new potable water supply source.

Potable water is delivered to the Agua Vista WTP by the Project Company and stored within a 10 MG storage tank on site. Additional treatment and polishing of the supplied water is provided through the treatment facilities constructed at the site, which include chemical dosing systems to increase levels of calcium and control the pH, pressure filters to achieve SAWS turbidity goals, and chlorine and fluoride dosing systems to meet SAWS water quality goals. Residuals from these proposed treatment steps will be collected and will receive further treatment to separate solids for disposal. Water separated from the

OWNER/CLIENT:
San Antonio Water System

PROJECT DURATION:
2017 - 2020

CONSTRUCTION COST:
$180M

REFERENCE:

San Antonio Water System
2800 U.S. Hwy 281 North
San Antonio, TX 78212

Alissa Lockett, PE, PMP
Director of Engineering
210.233.3401
alissa.lockett@saws.org

Central Water Integration Pipeline (CWIP)

San Antonio, Texas

residual solids flow streams will be recycled back to the front of the treatment system.

Following the polishing treatment, the potable water will be stored in a downstream 10 MG storage tank and then distributed to various pump stations for distribution. Each of the main treatment areas and related equipment and systems includes:

- Carbon Dioxide Facility
- Lime Facility
- Fluoride and Polymer Systems
- Pressure Filters
- On-Site Sodium Hypochlorite Generation System
- 10 MG Storage Tank
- 20 MGD Pump Station
- Solids Processing

AGUA VISTA WTP PROJECT CHALLENGES

In seeking to secure water for projected growth for the next 30 years, SAWS embarked on an ambitious project to purchase nearly 50 MGD of imported water from over 140 miles away, through a water purchase agreement that will span the next 30 years. SAWS's previous experience in securing water through agreements with other public water utilities in the region had resulted in some water quality concerns, including cases of observed steel piping corrosion and customer complaints of red water when integrating other imported sources with groundwater from the Edwards Aquifer, which contains above average concentrations of hardness and alkalinity. To make the imported water compatible with SAWS's existing groundwater sources the proposed treatment facility needed to provide a form of treatment that is seldom utilized outside of seawater desalination facilities, increasing the water hardness by 3-4 times the concentration of the imported water. Tetra Tech served as the design engineer for the treatment facilities at the Agua Vista Station where the imported water is received and introduced into the potable water distribution system. This truly one-of-a-kind facility is the centerpiece to over $1B of capital investment that SAWS has made in securing sustainable water supply for decades to come.

Water Quality Unknowns – Through the use of the Tetra Tech (RTW) Water Chemistry, Process, and Corrosion Control Model, our design team assisted SAWS in determining an appropriate treatment process train by evaluating various water quality parameters within the distribution system while simultaneously evaluating competing remineralization treatment alternatives to determine the best (lowest) net present value to SAWS. It also included performance of over 20 separate bench scale tests to assess the performance of different lime solution strengths and doses. Due to water quality unknowns, a robust treatment process design was established at the conceptual design phase, which was further refined as additional source quality became available from the imported groundwater wellfield. This conservative approach allowed SAWS to increase finished water quality goals by 33% at a late stage in the project to meet revised water quality goals without incurring additional costs to upsize major components of the treatment process.

Treatment Residuals - Due to unknowns in source water quality, and the resulting rates of sludge production from the treatment process, the need for additional sludge dewatering was uncertain. To manage this potential risk, Tetra Tech provided a detailed design of sludge dewatering facilities that can be added through a future phase, with all necessary provisions to accommodate an additional dewatering treatment building and sludge hauling transfer station within a space-constrained site. The initial phase facilities included wash water recovery facilities to handle spent backwash water and a gravity sludge thickener to handle sludge blowdown from the lime saturators. The future facilities included centrifuges for sludge dewatering housed in a building to accommodate truck loading.

COST SAVINGS

Due to source water unknowns at the time of design, the volume of sludge that would result from treatment was uncertain throughout the design phase of the project. A provision for additional sludge dewatering was included in the design, however these additional facilities were shown as a deductive alternate. This provision in the design and bidding documents allowed SAWS to recognize capital cost savings at a time when bid pricing was volatile due to local labor shortages and escalating construction material costs. At the time of bidding SAWS was able to make a decision to defer a $3.4M of capital investment until a future phase of the project, once the need for additional sludge dewatering was better quantified.

Central Water Integration Pipeline (CWIP)

San Antonio, Texas

TIME SAVINGS

An accelerated design schedule was made possible by engaging a design team across multiple Tetra Tech offices and time zones.

Early procurement of long lead equipment and sole source components allowed for engagement of equipment submittals prior to bidding of the project to construction contractors, while ensuring that the successful bidder continued to maintain responsibility for coordination, installation, and commissioning.

AGUA VISTA WTP TIME SAVINGS:

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SCADA SERVICES

As part of this project, Tetra Tech engineers designed a centralized control system for SAWS facilities that had the flexibility to be controlled from a centralized master station or locally. The project included multiple engineering disciplines in planning, design, and construction services. Tetra Tech worked closely with SAWS staff to define the standard SCADA elements that fit their operational, IT, and business needs. Along with the new SCADA platform design, the project includes coordination with the integration of a new broadband radio communication system to transmit SCADA data, security information, and enterprise connections for operations staff.

Our team worked directly with SAWS to develop a SCADA framework for the Agua Vista Treatment Facility to provide reliability and operability of the site by a local operator workstation or by the master control room over the SAWS network. The system needed to deliver a utility-specific solution to support these unique demands and existing infrastructure.

Tetra Tech SCADA experts worked with SAWS to ensure the CWIP project utilized control system standards and procedures being developed for their new PlantPax SCADA standard.

We ensured the design intent was carried over into tag naming, graphic development, communications protocol, remote access requirements, cybersecurity policies and procedures, and data requirements. Our team used its breadth of experience to provide options to SAWS to optimize their control ability within the framework of the new SAWS PlantPAX SCADA standards.

AGUA VISTA WTP VALUE ADDED SERVICES

Full-Service Design Capabilities – Tetra Tech provided a full suite of professional design services to cover each design discipline that was required for the project. In instances where subconsultants were utilized, Tetra Tech's senior design professionals performed independent QA reviews as an additional measure of oversight from within our design team.

3D Renderings – The project site is adjacent to an elementary school and surrounded by residential development. Tetra Tech use of 3D design tools for the facility design allowed for development and regular updates to photo-realistic renderings of the facilities.

Apopka WRF Expansion

Apopka, Florida

OWNER/CLIENT:
City of Apopka

PROJECT DURATION:
2016 - 2019

CONSTRUCTION COST:
$64,127,809

REFERENCE:

City of Apopka
748 E. Cleveland Street
Apopka, FL 32703

Glen Brooks, Water Resources Operations Manager
407.703.1731
gbrooks@apopka.net

The City of Apopka needed to expand and upgrade their existing 4.5 million gallons per day (MGD) annual average daily flow (AADF) Water Reclamation Facility (WRF) to meet the projected growth in the City's Service Area and the Wekiva Parkway and Protection Act requirements. The existing facility is a conventional secondary treatment plant designed to treat for public access reuse (effluent solids below 5.0 mg/L and high-level disinfection). The existing facility includes two biological treatment trains, a 2.0 MGD package plant (1972) and 2.5 MGD oxidation ditch (1992) with corresponding clarifiers, deep bed filters, chlorine contact chambers and bulk sodium hypochlorite for disinfection. The initial expansion project (performed by another consultant) was designed in 2010. The project was competitively bid in 2010, however, the project bids exceeded the City's budget for the project, and it was placed on hold. A Consent Order issued by the Florida Department of Environmental Protection (FDEP) in 2015 required the City to comply with the 10 mg/L effluent nitrogen limit requirement in the Wekiva Parkway and Protection Act by March 1, 2019.

In November 2015, the City selected Tetra Tech as the consulting engineer to takeover design responsibilities, update and finalize the previous design, and perform permitting, bidding, and construction services for the WRF Expansion.

Tetra Tech took over design responsibility for the WRF Expansion, which was based on constructing a new parallel 4.0 MGD headworks, converting the existing secondary treatment package plant to flow equalization and rerating the existing secondary treatment oxidation ditch process train to treat up to 4.0 MGD AADF with biological nitrogen removal including the addition of an anoxic basin and internal recycle pumping, and constructing a new 4.0 MGD AADF biological treatment train and secondary clarifiers, deep bed filters, chlorine contact tanks, and sludge handling process including sludge thickening, aerobic digestion, biosolids dewatering and solar drying.

During the preliminary design, Tetra Tech evaluated the rule changes and the increased organic and nitrogen loading to the facility and recommended that

Apopka WRF Expansion

Apopka, Florida

the existing facilities be de-rated to 3.0 MGD AADF and the new treatment train designed to treat 5.0 MGD AADF.

The City also elected to have the new treatment train designed to reduce effluent nitrogen levels to 3.0 mg/L, which exceeded the required limit of 10.0 mg/L, by providing a 4-stage biological nutrient removal process in lieu of the previously designed 2-stage process. The design of the solids handling facilities were also updated to include an indirect paddle dryer for dewatering in lieu of the previously designed solar drying facilities. Due to the time passed since the 2010 design, several additional improvements were necessary to address failing and/or aging equipment and structures. This included replacement of additional electrical gear and process equipment such as the equipment at the existing headworks and secondary clarifiers.

During final design of the WRF Expansion, the City elected to evaluate the potential benefits of constructing a new preliminary treatment structure and flow equalization tank on the East Plant instead of at the West Plant as previously designed and permitted. Items such as constructability, operations and maintenance, cost and future expansion were all taken into consideration. Following the evaluation, the City elected to pursue constructing a new 8.0 MGD AADF and 16.0 MGD PHF preliminary treatment structure and new flow equalization tank at the East Plant.

Tetra Tech also provided construction administrative services on the project including providing the services of a full-time Resident Project Representative (RPR). Tetra Tech also actively participated in the Construction of the project through bi-weekly progress meetings, shop drawing reviews, reviewing and responding to contractor's requests for Information (RFIs), preparing and reviewing request for change and contractor applications for payment and attending discipline specific meeting with the contractor and their subcontractors.

The project had several unique circumstances that needed to be considered throughout the project. The most critical objective was maintaining consistent and reliable treatment throughout construction. The influent flows to the facility eliminated the ability to take the existing unit processes out of service until the new treatment train was completed and producing reuse quality effluent for the City's reuse customers. Also to comply with the FDEP consent order, the project needed to be constructed and producing effluent that complied with the permit requirements prior to September 2018 with final completion by March 1, 2019. This limited the total project duration for preliminary design, permitting, final design, and construction to within a three-year overall duration and just 2-1/2 years to complete construction of the facilities required to meet the effluent requirement of the permit.

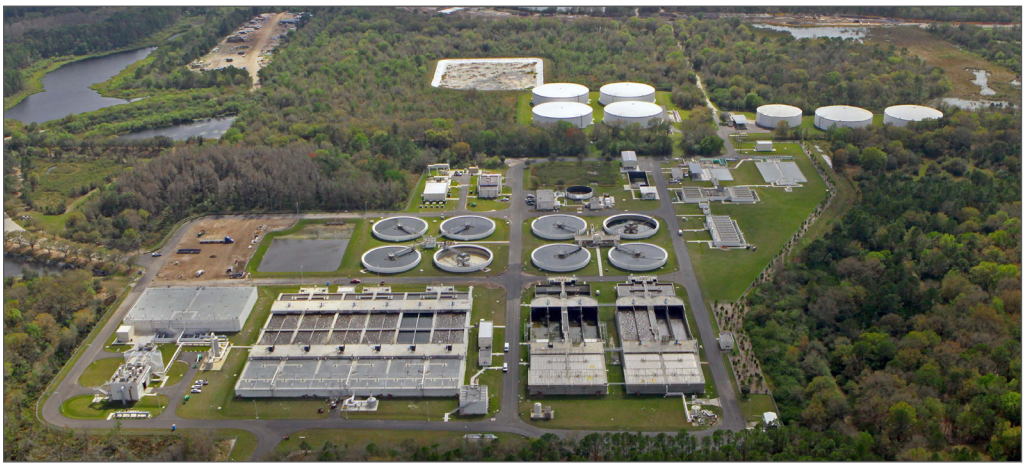
The City elected to use the Construction Manager at Risk (CMAR) approach to the project to aid in meeting the time limitations in the Consent Order. Tetra Tech assisted the City in developing CMAR request for qualifications (RFQ). The City advertised and selected a CMAR during the preliminary design stages of the project to assist with pre-construction services such as cost estimating and constructability reviews. This approach reduced the overall project schedule by eliminating the "bid phase" associated with the traditional design-bid-build approach. It also allowed the contractor to begin early construction activities such as mobilization of trailers and equipment to the site, initial construction survey, locating existing utilities and limits of debris removal, limited clearing, erosion control, and portions of the earthwork prior to finalizing the design.

The project also went through a rigorous value-engineering process. The City, Tetra Tech, and contractor worked together to develop and implement design and construction value engineering concepts to provide the facility improvements required to meet capacity and treatment levels required to meet the City's growth, comply with the new effluent quality requirements and stay within the City's available budget for the project. Through the value engineering process, the overall project cost was reduced by approximately $6 million dollars.

The project was funded through FDEP via a State Revolving Fund (SRF) Loan. Tetra Tech provided assistance to the City in meeting the SRF requirements as well as providing compliance monitoring service for SRF's Davis Bacon and American Iron and Steel (AIS) requirements.

Northwest Regional WRF Expansion

Hillsborough County, Florida



In 2014, the County began enacting its wastewater treatment consolidation program as part of the County's Capital Improvements Program for the northwest region of the county. The goals of the program were identified early on by the County as needing to improve treatment efficiency, reduce power consumption, and minimize future rate impacts for County residents. The cornerstone of the county's program was the $193 million expansion of the Northwest Regional WRF (NWRWRF) from 10 to 30 MGD—the largest capital improvement project in county history. This project included demolishing two aging advanced wastewater treatment plants (Dale Mabry and River Oaks) and expanding the NWRWRF to be the sole wastewater treatment plant for the region, all while maintaining 100% operation. This project was recognized by Engineering News-Record (ENR) Southeast as the Water/Environment 2020 Best Project and by Doing Business in America as the 2020 Best Project – Water/Wastewater.

Tetra Tech served as the lead design engineer as part of the design-build team (Garney/Wharton-Smith Joint Venture). The design-build delivery method allowed the County to manage program risks, promote collaboration, and mitigate community impacts.

This project included the following improvements:

- New headworks (screening and degritting), inline flow equalization, and influent flow distribution box
- Retrofit of existing biological nutrient removal (BNR) basins to enhance nitrogen removal and six additional five-stage BNR treatment trains
- Additional odor control systems
- Additional clarifier flow splitter box and four additional 110-foot spiral scraper type secondary clarifiers
- New open-sided chemical storage and feed building with three new 10,000-gallon sodium hypochlorite storage tanks and three triplex chemical feed skids
- New sodium bisulfite storage and feed system for de-chlorination of treated effluent
- New return activated sludge (RAS) pump stations

OWNER/CLIENT:
Hillsborough County

PROJECT DURATION:
2016 - 2020

CONSTRUCTION COST:
$193,175,506

REFERENCE:

Hillsborough County Public Utilities Department
(Utilities Support Division)
925 East Twiggs Street
Tampa, FL 33602

Kelly Kiner
Project Manager
813.209.3067
KinerK@
HillsboroughCounty.org

Northwest Regional WRF Expansion

Hillsborough County, Florida

- Ten new 12-foot by 30-foot deep bed filters
- Two additional chlorine contact basins and removal of the existing ultraviolet disinfection system.
- Five new effluent transfer pumps and six new reclaimed water pumps
- Two additional 5.0 MG pre-stressed concrete reclaimed water storage tanks and two additional 5.0 MG welded steel reclaimed water tanks
- Two new reject return pumps and one new in-plant drain lift station
- New power feed to the site and additional standby power facilities
- Electrical and instrumentation improvements including SCADA, control, and power modifications and additions
- Yard piping and site work

A key challenge of the project was expanding the existing facility while mitigating historical odor and noise issues. Through innovative design and proactive community engagement, the design-build team resolved these challenges and achieved regional sustainability goals by restoring wetlands, improving system reliability, and improving quality of life.

Innovations/Cost Savings

- Tetra Tech rerated the existing facility to accelerate the diversion of flow from the Dale Mabry WWTP to allow the County to decommission this facility ahead of schedule
- Interim improvements included the installation of sodium hypochlorite feed facilities to implement conventional chlorine disinfection, sodium bisulfite feed facilities to implement de-chlorination, and minor modifications to the biological nutrient removal (BNR) basins to provide additional operational flexibility and enhance nitrogen removal potential
- Each new biological treatment train was designed with the capability to expand or reduce the size of anoxic and fermentation zones by subdividing each zone into stages and providing multiple RAS, nitrified recycle, and anoxic recycle discharge points without the use of pumps. The existing biological treatment trains were modified to provide the same flexibility in operation
- The new effluent transfer pump station was designed as a dual use pump station with the ability to pump treated effluent directly to the surface water outfall or to the reclaimed storage tanks eliminating the need for a second dedicated surface water outfall pump station
- During preconstruction, Garney and Tetra Tech developed several innovative ideas and cost saving recommendations, contributing to $11 million in savings for the County. The County used all of the value engineering savings provided by our team and added an additional $1 million worth of change orders for additional work including construction of a gas turbine, two steel tanks, and the initial design for a new administration building

Value Engineering

This design-build project began with a preconstruction phase involving plant design, permitting, constructability reviews, and VE. The design-build team led all-day VE sessions with the County and developed a number of innovative ideas and cost saving recommendations. The VE savings amounted to $10.7M, which was put back into the project in the form of additional work including a gas turbine generator, two steel tanks, and design for a new administration building.

Southeast WTP

Huntsville, Alabama

OWNER/CLIENT:
Huntsville Utilities

PROJECT DURATION:
2010 - 2017

CONSTRUCTION COST:
$90M

REFERENCE:

Huntsville Utilities
112 Spragins Ave NW
Huntsville, AL 35801

Wes Kelley, President
256.535.1200
Wes.Kelley@hsvutil.org

OVERVIEW

Tetra Tech was selected to provide design, permitting, and construction services for the Southeast Water Treatment Plant (WTP). Huntsville Utilities currently operates two surface water treatment plants that treat water from the Tennessee River. As a result of high seasonal demands, the Utility decided to begin planning for a third surface WTP in 2005. Tetra Tech performed a site selection study in 2006 to assist with determination of the location of the new WTP and raw water source. The study recommended that a new raw water intake be located on Guntersville Lake and that property be purchased north of the site for the construction of the new WTP site.

Tetra Tech was later selected to provide the pilot study, final design, permitting and construction management services for the Huntsville Utilities Southeast WTP Program which included four main projects: 1) Southeast Water Treatment Plant with an initial phase of 24 MGD (master planned for 96 MGD), 2) Raw Water Intake Pump Station 3) Raw Water Main and 4) Finished Water Main.

PILOT PLANT STUDY

A bench and pilot study was performed at the site of the South Parkway WTP in 2010 to test a number of different treatment technologies for DBP control including PAC, GAC, BAC, MIEX®, MIOX®, fixed bed ion exchange, membranes and chloramines.

The bench and pilot scale DBP study determined the target TOC removal that was required to maintain the LRAA DBP concentrations below the maximum contaminant level using a statistical analysis. An alternatives and cost analysis was performed to select the best most cost-effective method of achieving the target TOC removal. The method selected for TOC removal was determined to be spilt treatment granular activated carbon.

The carbon contactor system was designed to operate in a split treatment mode so that one third of the filtered water would bypass the carbon contactors reducing their capacity to 16 MGD. Alabama Department of Environmental Protection rules prohibit spilt treatment, so Tetra Tech developed the necessary technical support documentation to permit this system.

Southeast WTP

Huntsville, Alabama

The pilot test results were utilized to determine the carbon change out frequency required to attain the design TOC removal and maximize carbon usage. Carbon usage was maximized by determining the period of time a contactor could operate in biological mode versus absorption mode. Four carbon contactors were designed so that carbon change out could be rotated to maintain the design removal rate.

WATER TREATMENT PLANT

The project involved construction of a brand new 24 MGD (ultimate build out sized for 96 MGD) conventional surface water treatment plant and Tetra Tech performed all design and construction administration services on the project. The major project components include:

- 48 MGD raw water intake structure including an 4,800 SF pre-engineered metal building sitting on a reinforced concrete wet well with two 250 HP and one 450HP vertical turbine pumps, 4160V switchgear, and 42-inch DIP headers
- Yard piping ranging in size from 6- to 48-inches
- Major reinforced concrete structures including: floculation basins, sedimentation basins, and dual media filters (Flocculation basins included walking beam flocculators. Sedimentation basins included bottom mounted sludge vacuums, and plate settlers. Filters have IMS Cap underdrains with air scour backwash and dual media sand and anthracite media
- 22,000SF brick masonry operations building with control room, lab, training room, seven separate chemical feed systems, maintenance areas, filter backwash blowers and pipe gallery
- 70-foot diameter reinforced concrete sludge thickener
- 123-foot diameter reinforced concrete washwater recover tank
- 1.1 MG steel elevated backwash supply tank
- 5,880 SF masonry brick finished water pump station with 48.0 MGD capacity including two 450 HP and one 1,000 HP vertical turbine pumps sitting over a baffled 2.0 MG reinforced concrete clearwell
- 4160V switch gear
- 5,940 SF masonry brick generator building with a 3.0 MW natural gas fired generator
- 9,500 SF masonry brick granular activated carbon building housing 48.0 MGD capacity of activated carbon filters capable of running in biological mode for disinfection byproduct control

PERMITTING

Tetra Tech also assisted Huntsville Utilities with obtaining the necessary surface water withdrawal permits from the Tennessee Valley Authority (TVA) encompassing approximately two years of review and permitting. Tetra Tech prepared the required permitting documents for TVA Water Withdrawal Permit including water withdrawal quantity justification, raw water intake/raw water main easements, United States Fish and Wildlife endangered species protection, USACE review and concurrence (navigable waterway), blasting plan, and a historical preservation protection plan.

ARCHITECTURE/STRUCTURAL DESIGN

The architectural scope included a 22,000-SF administration building, maintenance facility, and chemical feed multi-story masonry building providing direct access to the pipe gallery, filters, and sedimentation and flocculation basin. The building serves as the central operations facility for the entire complex.

The raw water intake building is a 4,700-SF pre-engineered metal building with insulated roof and wall panels located on Guntersville Lake to house the WTP intake pumps. Other structures in the complex include a 6,000-SF finished water pump station, a 6,000-SF granular activated carbon building and pipe gallery, an 800-SF thickened sludge pump station and a 5,500-SF generator and emergency power building. All facilities are masonry with standing seam metal roofs designed for low maintenance and energy efficiency.

RAW WATER INTAKE PUMP STATION

The intake structure design involved a detailed evaluation of geotechnical conditions and consideration of several construction techniques due to the presence of surficial limestone, the proximity of a hydroelectric generation facility, and the shallow water depths present at the shoreline of Tennessee River in the vicinity of the intake. The intake facility included a trapezoidal channel constructed by carefully controlled blasting techniques to protect sensitive environmental resources and the adjacent power generation facilities. The station's

Southeast WTP

Huntsville, Alabama

architecture was designed to match the aesthetics of the surrounding areas.

The electric power system consists of two 4160V switchgear lineups with a combined rating of 5MVA serving 5KV pump motors and low voltage (480VAC) motor control centers for accessory equipment. The 4160V primary is served from a main energy plant with backup generators located a few miles away at the WTP also designed by Tetra Tech. The instrumentation and control system provides complete integration between the two plants and provides full control and monitoring of the process.

Raw water flows though the trapezoidal channel into a large reinforced concrete structure that includes three 96-inch square sluice gates, static screens, six vertical turbine raw water pumps, discharge piping, surge anticipator valves, switchboards, VFDs, and related control equipment. Pump selection involved a detailed hydraulic analysis that examined capital, operating, and present worth costs for an initial design delivery of 24 MGD and a future demand of 96 MGD. The pumping system includes two 250-HP pumps and four 450-HP pumps to deliver a design flow of 48 MGD. Under "build-out conditions" the initial 48 MGD system will be replaced with six 700-HP pumps designed to provide a total firm capacity of 96 MGD.

RAW WATER MAIN

The raw water pumps discharge into a 42-inch raw water transmission that extends approximately 3.5 miles from the intake to the new WTP site. The material selection and wall thickness (pressure class) selections for this main involved a computer simulation to ascertain high- and low-pressure conditions resulting from hydraulic transients and evaluate various measures to mitigate surge impacts such as pressure tanks and surge anticipator valves. The initial 42-inch main was constructed with pressure class 150 ductile iron pipe and will accommodate demands up to 48 MGD. A future parallel 42-inch main will be installed to handle demands up to 96 MGD.

Preliminary design services involved an alternative analysis including route selection, consideration of alternative trenchless technologies, pipe material evaluations, coordination with various utilities, and development of pipeline alignment's cost estimates and a technical memorandum that summarized the findings, conclusions, and recommendations of the preliminary engineering effort.

Tetra Tech obtained permits from the Alabama Department of Environmental Management for raw water main construction, Tennessee Valley Authority for construction on their property, US Fish and Wildlife Service for environmental issues along the Tennessee River.

FINISHED WATER MAIN

The finished water main includes 7.5 miles of 48-inch DIP finished water transmission mains, including approximately 600 feet of 60-inch jack and bore of US HWY 431 and a 600 LF 60-inch jack and bore of the Paint Rock River utilizing trenchless construction techniques. The design includes both parallel mains, but the construction will install one main in first phase as well as parallel pipes at all road and river crossings.

Tetra Tech provided route planning, preliminary design, surveying, utility location services, final design, permitting and construction administration services for the Finished Water Main Project. Preliminary design services involved an alternative analysis to include: route, consideration of alternative trenchless technologies, pipe material evaluations, coordination with various utilities, and development of pipeline alignments, cost estimates and a technical memorandum that summarized the findings, conclusions, and recommendations from the preliminary engineering effort. Under the permitting services portion of the project, Tetra Tech obtained permits from the Alabama Department of Environmental Management for water main construction, AL DOT for crossing US Hwy 431, USFWS for Paint Rock River crossing and wetland crossings.

Final design services for all the facilities included preparation of construction drawings and specifications involving standard plan and profile sheets, appurtenant details, and technical specifications in CSI format. Construction administration services involved bidding support services, shop drawing review, review of payment applications, preparation of record drawings, certifications, construction inspections, resident project representatives (2), and other typical construction phase tasks including all necessary inspections.

LS 1 and 7 Rehabilitation

Orlando, Florida

This project consists of the reconstruction of master lift station No. 001 & 007, both triplex wet-pit/dry-pit pumping stations. These stations are in the same site and are capable to pump to two different wastewater treatment plants owned by the City of Orlando. Both stations were originally construction in the 1950's and rehabilitated in 1984, but the equipment and controls have reached its useful life. Odor control and standby power systems are provided at the facility along with a hydraulic transient (water hammer) control tank which is currently unused. Due to the age and condition of the existing facilities, and to address corrosion and confined space concerns, the City teamed with Tetra Tech to implement improvements.

Tetra Tech provided surveying, hydraulic analysis and modeling, permitting and services. We are currently providing construction engineering services for this contract.

The scope of services includes:

- Evaluate and study LS 1/7's capacities and ability to accommodate actual and future wastewater flows
- Perform hydraulic modeling and analysis
- Evaluate existing conditions including network configurations and odor issues
- Locate utilities for needed improvements and provide geotechnical engineering as necessary
- Provide a Preliminary Engineering Report
- Based on evaluation and recommendations, provide 100% design plans for improvements
- Design electrical, emergency power, telemetry, SCADA improvements associated with project
- Apply for and maintain all necessary permits from building department, SJRWMD, and FDEP
- Assist in bidding, and construction administration activities
- Provide engineering services during construction phase

OWNER/CLIENT:
City of Orlando

PROJECT DURATION:
2011 - 2019

CONSTRUCTION COST:
$17,300,000

REFERENCE:

City of Orlando
400 South Orange Avenue
Orlando, Florida 32801

Chuck Shultz, PE
Assistant Wastewater Division Manager
407.246.2658

Shell Creek WTP RO Addition

Punta Gorda, Florida

The City of Punta Gorda owns and operates the Shell Creek Water Treatment Plant (SCWTP), which treats surface water from Shell Creek. The 10.0 MGD SCWTP serves as the primary source of potable water supply for the City. The City also owns and operates a 2.0 MGD aquifer storage and recovery (ASR) system to augment potable water supply. During the dry season, Shell Creek experiences elevated levels of total dissolved solids (TDS), and the existing SCWTP process cannot reduce TDS levels below the maximum contaminant level (MCL) of 500 mg/L in the potable water. Due to the elevated TDS levels in Shell Creek during the dry season, the City determined that a new water supply source and treatment process needed to be developed to meet drinking water standards and avoid Minimum Flows and Levels impacts.

Tetra Tech provided engineering and hydrogeologic services for the preliminary, final design, and construction management for the development and implementation of a new groundwater source and a new reverse osmosis (RO) treatment system. The project resulted in a facility that can reliably produce up to 10.0 MGD of potable water at the SCWTP that meets drinking water standards by using RO to treat groundwater and then blending with the surface water treatment process. To help accomplish this task, the project converted the existing ASR wells to groundwater production wells, thereby accomplishing two goals:

- Removal of arsenic in the ASR wells through the RO process and disposal with the RO concentrate through the new deep injection well
- Reduced drilling costs for adding new supply wells (new supply wells were added as part of this project, but using the existing ASR wells reduced the number of new wells required)

TREATMENT PROCESS AND FACILITIES

The new RO treatment system has an initial capacity of 4.0 MGD, expandable to 8.0 MGD. The design also includes provisions for bypassing up to 0.5 MGD of filtered groundwater in the initial phase and up to 1.0 MGD at the ultimate treatment capacity. The RO permeate blends with the treated surface water in a blending basin prior to final storage and distribution. Final chemical dosing for disinfection, pH adjustment, and

OWNER/CLIENT:
City of Punta Gorda

PROJECT DURATION:
2014 - 2020

CONSTRUCTION COST:
Exploratory Wells
$2,578,551

Deep Injection Well:
$4,311,318

ROWTP
$29,217,649

REFERENCE:

City of Punta Gorda
326 West Marion Ave
Punta Gorda, FL 34136

Brian Fuller
Plant Supervisor
941.639.2057
bfuller@ci.punta-gorda.fl.us

Shell Creek WTP RO Addition

Punta Gorda, Florida

corrosion control is accomplished in the blending basin.

Facilities constructed at the Shell Creek RO WTP include:

- Four new Floridan aquifer wells
- Vertical turbine well pumps for the four new Floridan aquifer wells and the two existing ASR wells being converted to production wells
- Raw water main piping from the wells to the new RO Building
- An approximately 16,000-square-foot operations building containing the operations control room, laboratory, offices, meeting rooms, restrooms/lockers/showers, chemical storage and feed facilities, high-pressure pump room, and RO process room
- Two pretreatment cartridge filters
- Two vertical turbine high pressure RO feed pumps
- Two 2.0 MGD RO skids and a clean-in-place system
- Two forced drafted aerators for hydrogen sulfide removal and an odor control stack
- Blending basin for chemical addition and mixing of the RO permeate and the treated surface water
- Two vertical turbine permeate transfer pumps and three vertical turbine finished water transfer pumps
- 2.0 MG pre-stressed concrete GST
- Two new vertical turbine high service pumps
- Deep injection well and dual zone monitoring well for concentrate disposal
- On-site lift station for cleaning system waste disposal through the deep injection well
- Chemical feed systems including scale inhibitor, sulfuric acid for pH adjustment (pre RO and pre Forced Draft Aerators), sodium hydroxide for finished water pH adjustment, corrosion inhibitor for corrosion control, sodium hypochlorite for disinfection and expansion of the ammonia gas feed system for conversion to chloramines
- 1,250 kW generator and fuel storage tank
- Associated electrical, instrumentation, and controls
- Site development, environmental assessment, and permitting through Florida Department of Environmental Protection (FDEP), Southwest Florida Water Management District (SWFWMD) and Charlotte County

Tetra Tech prepared a Preliminary Design Report (PDR) for the brackish water RO Water Treatment Plant (WTP) addition in 2009 and updated the PDR in 2015. Tetra Tech subsequently prepared construction drawings and technical specifications for the water treatment facilities and assisted the City with obtaining all necessary approvals for the construction of the treatment facilities. Construction administration services and a resident project representative were provided during construction.

The project included construction of an approximate 16,000-square-foot operations building containing the operations control room, laboratory, offices, meeting rooms, restrooms/lockers/showers, chemical storage and feed facilities, high-pressure pumps, micron filters, and reverse osmosis skids. A structure near the process building has forced draft aerators and an odor control stack, and a separate new building houses the sodium hypochlorite storage and feed system. Treated water from the ROWTP is blended with the treated surface water in a blending basin, which includes two clearwells, transfer pumps, blending chambers, and chemical feed for disinfection and stabilization.

EXPLORATORY WELL PROGRAM AND WATER USE PERMITTING

Tetra Tech provided the hydrogeological and engineering services required to prepare and submit an application and supporting documentation to modify the City's Southwest Florida Water Management District (SWFWMD) Water User Permit (WUP) to include the additional wells associated with the ROWTP. The existing WUP allocation remained the same (Annual Average of 8.088 MGD and Peak Month of 11.728 MGD) with the flexibility for the City to use both surface water and the new groundwater source in the modified WUP.

Tetra Tech services included:

- Meetings with City staff and the SWFWMD permitting staff to outline and describe the information needed to modify the City's existing WUP and incorporate the groundwater allocation from the proposed wellfield
- Development of the exploratory well program for review and input from the SWFWMD
- WUP application and supporting documentation submittal
- RAI responses

Shell Creek WTP RO Addition

Punta Gorda, Florida

- Groundwater flow modeling using site-specific hydrogeologic data from the exploratory testing program to supplement the WUP application

The exploratory well program included:

- Construction and testing of an exploratory well constructed to be a tri-zone monitor well (TZMW-1) into the lower portion and two zones in the upper Floridan aquifer
- Surficial aquifer monitor well (SAS-1)
- Test/production well (TPW)
- Production zone monitor well (UFMW)
- Intermediate aquifer monitor well (IAMW-2)
- Testing and inspection of the existing ASR wells on-site to be converted to production wells
- Design services for two additional production wells that were constructed following WUP modification

CONCENTRATE DISPOSAL

A Class I deep injection well was constructed to a depth of approximately 3,250 feet below land surface on site and a dual zone monitoring well for disposal of the RO concentrate. Tetra Tech engineers and hydrogeologists performed the design and prepared the permit application and supporting documentation to obtain the injection well permit. The design also included the design of the above grade facilities for the injection well and dual zone monitoring well. Tetra Tech engineers and hydrogeologists also provided general construction administration services, full time resident inspection services and services to comply with the permit during construction. Tetra Tech provided final documentation for the well construction and an operation and maintenance manual to FDEP to obtain approval for operational testing of the well.

CONSTRUCTION MANAGER AT RISK (CMAR)

The project was implemented using the Construction Management at Risk (CMAR) delivery method for the RO addition and related upgrades to the existing WTP.

Tetra Tech served as an advisor during the selection of the construction manager, which was accomplished following completion of the PDR. The construction notice to proceed for the treatment process was May 2018 with a final completion date scheduled for May 2020

FUNDING ASSISTANCE

Tetra Tech worked with the City to apply for and receive grant funding from the Florida Legislature and the SWFWMD for the project, which covered approximately 40 percent of the estimated project costs. Tetra Tech also assisted the City with obtaining a State Revolving Fund (SRF) loan for the project. We also assisted the City with construction documentation to meet the SRF loan requirements including preparation of the disbursement requests and wage rate surveys.

SITE DEVELOPMENT, ENVIRONMENTAL ASSESSMENT AND PERMITTING

The proposed ROWTP is located on an 81.3+/- acre undeveloped parcel located adjacent to the City's existing surface WTP, outside of the City limits and thereby requiring County approval. The existing parcel was zoned AG, which required a special exception to allow the new WTP. Tetra Tech's team worked with the City, County, and a County-recommended land use attorney to successfully complete the land use special exception. In addition to the land use modification, Tetra Tech prepared an environmental assessment to verify there would be no impacts to environmental or archaeological features.

Due to an existing access easement located between the existing WTP and the proposed WTP, Tetra Tech's team also worked with the City and neighboring landowner to develop a new easement that would allow access between plants to flow contiguously. Finally, as part of the process, Tetra Tech helped the City submit a site development plan and gain approval through Charlotte County's Zoning Department for the proposed use. The approval considered requirements such as fire protection, flood protection, handicap accessibility, clearing and grubbing requirements, open space preservation, tree planting requirements, and related design criteria.

9 CONSTRUCTION ENGINEERING AND INSPECTION SERVICES

eRFP: Describe the CEI services your firm can provide.

Construction Engineering and Inspection Services

Tetra Tech provides construction administration and construction engineering inspection (CEI) services for all phases of construction for municipal, governmental, and private clients. We work closely with owner personnel, design professionals, field staff, contractors, and state and local authorities to deliver the highest-quality deliverable by ensuring the project is constructed in accordance with approved contract documents. Leaders from the design phase of our projects are seamlessly integrated into the construction phase to ensure maximum project accuracy. Tetra Tech minimizes cost overruns and scheduling delays and mitigates adverse impacts to owner operations, local businesses, and residents.

Our Construction Inspection staff can assist with full or part time inspection services as necessary to assure that all aspects of the project construction are adhered to. Tetra Tech's inspectors are FDOT certified in nearly every inspection oversight category and have performed CEI related services for numerous roadway and stormwater projects throughout South and Central Florida. In addition, our inspectors can assist in acting as an extension of staff on an as-needed basis. We have performed similar as-needed services to the City of Fort Myers, City of Tarpon Springs, City of Cape Coral and Collier County.

The following details a list of services that we provide:

Pre-Construction:

- Review constructability during design
- Review traffic and/or pedestrian maintenance plans
- Prepare construction services budget and staffing assignments
- Attend/Conduct the pre-bid conference
- Prepare Notice of Award and/or Notice to Proceed
- Conduct pre-construction conference and attend commercial access / public information meetings

Construction:

- Conduct progress meetings
- Process construction submittals and Requests for Information (RFIs)
- Review contractor's construction schedule
- Review pre-construction audio/visual reports
- Conduct periodic site visits to ensure conformance and provide guidance
- Review contractor payment requests and make recommendations to owner
- Review contractor claims and make recommendations to owner
- Prepare contract modifications
- Review and implement traffic and pedestrian maintenance plans and traffic advisories
- Respond to the needs of businesses, commercial property owners, and residents
- Prepare and submit progress reports
- Forecast and monitor budgets
- Assist in commissioning, startup, and training
- Review laboratory testing, inspection procedures, reports, and invoices

Post Construction:

- Prepare project deficiency list
- Attend final project walk-through
- Review project deliverables for conformance and deliver to owner:
  - Construction record drawings
  - Operation & Maintenance manuals
  - Project records
- Prepare final change order
- Deliver to owner waivers of lien, consent of surety to final payment, and warranty information
- Review, recommend, and process final payment
- Prepare certificates of substantial/final completion

Construction Observation and Inspection

Tetra Tech provides full- or part-time resident project representatives (RPRs) as required to inspect, document, and report construction activities. Tetra Tech's RPRs are familiar with contract documents, design requirements, state and local standards, and methods and materials of construction. They are well versed in the use of electronic reporting programs including web-based systems. A project may require more than one RPR at times. In this case, a senior or lead RPR will be designated as the primary point of contact.

Major responsibilities and tasks performed by our RPRs:

- Daily construction inspection of the contractor's performance documented with Daily Field Observation Reports
- Visual inspection and approval or rejection of materials and equipment delivered to the site with respect to conformance to the contract documents and submittals
- Observation of all excavation and backfilling with particular attention to the protection of pipes, burial depth, and proper bedding
- Performance of various tests and review of laboratory reports on material and equipment conformance
- Documentation of all activities and information relating to potential claims
- Coordination of required materials testing
- Issuance of Non-Conforming Work Notices
- Approval and documentation of minor field changes
- Project record and filing system maintenance
- Review of contractor payment requests
- Walk-through attendance and the preparation of deficiency punch-lists

10 GRANT & LOAN FUNDING SUPPORT

eRFP: Provide examples of grants and loans your firm can provide.

Experience in Funding

Our team's significant funding knowledge and expertise will successfully guide the City to obtain outside funding as well as comply with all contractual and reporting requirement. Tetra Tech has partnered with a number clients to secure over $500 million in funding from various sources including the Clean Water State Revolving Fund (CWSRF), Water Quality Improvement Fund (WQIF), USEPA's Water Infrastructure and Finance Act (WIFIA), amongst others. We utilize our internal resources as well as working relationships with such entities to identity, investigate, and confirm the best sources and approach for available funding.

Tetra Tech has partnered with clients across the state to develop high-quality grant applications and obtain approval for hundreds of water and wastewater facilities. In addition, we have been successful in obtaining grant funding from such legislations such as the previously passed $656 million environmental, stormwater cleanup, septic to sewer, etc. Bill. We have successfully secured over $10 million in grants and direct appropriations through legislation for local utility projects in Lee, Hendry and Charlotte counties alone.

Tetra Tech's prior experience and knowledge of the funding stages and submittal process and considerations will be significant to the City of Port St. Lucie as the current Infrastructure Bill for 2021 and other funding and grant infrastructure programs are allowing for key projects to be moved forward. The table to the right details several of our most significant SRF funded projects in Florida.

Federal Funding Highlight

Proposed project team member, Janine Alexander, PE, has specific Federal Funding experience and has personally prepared funding letters of interest, funding applications, drawdown schedules, worked hand in hand with financial representatives to prepare funding documents, maintained compliance records and documentation; including, but not limited to, American Iron and Steel (AIS) requirements, Davis-Bacon labor requirements, payroll interviews, and certified payroll compliance and tracking of eligible project costs for $82 million dollars of Water Infrastructure Finance and Innovation (WIFIA) funding by the Environmental Protection Agency (EPA). Ms. Alexander has led a team of staff and compliance experts who will be key resources for the City to secure and maintain necessary funding compliance.

Significant SRF & WIFIA Funded Projects in Florida

Client	Project	Funding Source	Amount
City of Hollywood	Water Main Replacement / Sewer Expansion	SRF	$20M
Toho Water Authority	Gravity Sewer Rehabilitation	WIFIA	$61.8M
City of Sanibel	Wastewater Collection, Treatment, and Disposal Facilities	SRF	$26.0M
City of Edgewater	Centralized Wastewater Collection, Treatment and Effluent Disposal	SRF	$26.2M
City of New Smyrna Beach	Wastewater Treatment Plant	SRF	$16.2M
City of Lake City	Price Creek Water Treatment Plant	SRF	$9.2M
City of Cape Coral	Water / Sewer Distribution / Collection	SRF	$70M
Gateway Improvement District	Lake Bank Improvements (clean water)	SRF	$10M
City of Fort Myers Beach	Water / Sewer Distribution/Collection	SRF	$50M
City Punta Gorda	RO Plant and Wellfield	SRF	$20M
City of Orlando	Conserv I Reclaimed Water Improvements	SRF	$20M

11 MISCELLANEOUS

eRFP: Provide a description of additional services your firm can provide.

Tetra Tech has more than 20,000 associates and offices located throughout the United States and globally is able to offer many additional services beyond the traditional planning, design, permitting and construction services provided by most firms. A few of those services are briefly listed and described below.

Cybersecurity

Protecting Against Online Threats with Advanced Cybersecurity Procedures

Tetra Tech's project team has extensive experience combining innovative technologies into a cohesive, managed, and secure SCADA communications system. We understand the importance of creating solutions for long life-cycle systems on non-proprietary equipment and protocol standards that readily interface with other systems as they grow and require new technologies.

Cybersecurity assessments can identify risk exposures within existing systems and new technology implementations. Network performance assessments can identify existing or potential network bottlenecks and points-of-failure, supporting a business case for network enhancement or expansion.

For Port St. Lucie, Tetra Tech can assist with the development of cybersecurity policies and plans to conform with the latest best practices ranging from a simple security policy to detailed contingency, disaster recovery, and incident response plans. Our approach to cybersecurity incorporates controls and capabilities identified in current leading SCADA/ICS cybersecurity guidance for water and wastewater control systems, including:

- AWWA Cybersecurity Guidance Tool
- National Institute of Standards and Technology (NIST) Cybersecurity Framework
- National Institute of Standards and Technology (NIST) SP800-82 Rev. 1 Guide to Industrial Control Systems (ICS) Security
- ISA/IEC-62443 (Formerly ISA-99) Industrial Automation and Control Systems Security, including TR99.00.02
- North American Electric Reliability Corporation (NERC) 1300 Critical Infrastructure Protection standards v5

Providing Port St. Lucie with a Nationally Recognized Cybersecurity Expert

Tetra Tech cybersecurity expert Mark McKinney, CISSP, offers extensive experience in the Department of Homeland Security CSET and NIST Cybersecurity Framework. Mark is an active member of the Legislative Committee for Environment and Public Works, and is one of the authors of the America's Water Infrastructure Act of 2018 (AWIA 2018). His services include policy and procedure development, access control, perimeter monitoring, video surveillance, remote access, mobile data access, access control, enterprise networking, secure VPN access, and disaster recovery.

3D Designs and Building Information Modeling

Bringing Your Projects to Life

Tetra Tech sets the industry standard for using a Building Information Modeling (BIM) and three-dimensional (3D) design environment, with 3D design as our standard practice on all projects. Instead of "typical views," Tetra Tech employs the idea of complete modeling. We include as much as possible into our models to provide a better understanding of the final product, which minimizes general questions during reviews and construction. This reduces errors and conflicts within the design and saves time and money during construction. 3D modeling delivers a higher quality product that streamlines design and construction.

3D design results in lower construction costs and shorter construction times, while enhancing project accuracy, efficiency, and providing an overall better product to the client which reduces errors, reviews, and changes during construction.

▲ 3D design of chemical bulk storage using BIM rendering

Tetra Tech has a dedicated design team using Autodesk Revit for structural, architectural, process, electrical, and mechanical elements. For all site and surface modeling, including grading, paving, drainage, and pipeline plan and profile, we incorporate Autodesk Civil 3D.

BIM and 3D modeling provide a means for compiling construction quantities. Pulling model information can provide better engineering estimates due to accuracy of the quantity take-offs. Quantities from the model include piping and equipment, ductwork, concrete and steel, masonry, joists, and other process or construction items.

▲ 3D design of WTP improvements using BIM rendering

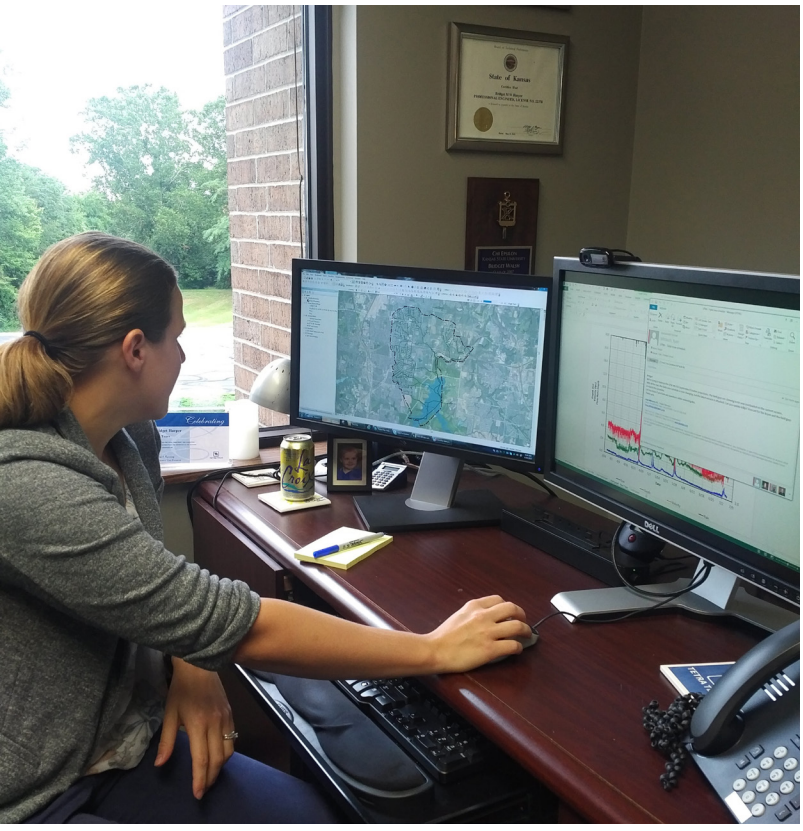
Bench Scale Process Testing

In our Orlando wet chemistry lab we are able to perform a variety of tests to support process design and solve treatment issues. We have provided bench scale studies for constructing GAC isotherms, TOC removal and DBP reduction, lead solubility testing to compare corrosion inhibitors, jar testing for coagulant selection, lime softening, HMO, barium sulfate precipitation and heavy metal adsorptive media for radionuclide removal, lime and carbon dioxide addition for remineralization, color removal and chlorine demand and decay testing.

Hydraulic Modeling and Simulation

For complex hydraulic problems such as mixing studies, tank design, pumping stations and hydraulic structures Tetra Tech can perform computational fluid dynamic modeling to predict the behavior of fluids at different flow rates and configurations. Tetra Tech also has facilities to construct scale models of hydraulic systems when testing of a design concept is critical to successful operation of the full-scale facilities.

▼ *Hydraulic Modeling and Simulation*



Aerial Drone Surveys

▼ *Tetra Tech Survey Drone*

What we provide:

- FAA licensed UAS (Drone) pilots
- Pix4D - UAS (Drone) Imagery processing to produce high resolution orthophoto aerials

12 ABILITY TO MEET SCHEDULE AND BUDGET REQUIREMENTS

eRFP: Describe how you manage projects in order to meet schedule and budget requirements.

With decades of successful project delivery through continuing utility contract services, Tetra Tech strives to deliver each project with effective sustainable solutions that not only fulfill project objectives but exceed client expectations. Through effective project management, technical expertise, and delivery we have fine-tuned this approach to contract management; being able to meet both schedule and budget requirements as needed. Paired with innovative strategies applied by every discipline, we are ready to manage any project under this contract.

Approach to Project Management to Meet Schedule and Budget Requirements

Tetra Tech's approach to project management centers on developing a plan at the start of the project, understanding expectations, and planning work before it is implemented. When Tetra Tech receives a request for a response to a Task Order, our Client Service Manager (James Christopher) will asses the individual needs of the City and prepare an immediate response using our proven project management framework. Mr. Christopher, alongside our hand selected project team will prepare a draft Task Order with a clearly-defined technical approach, scope, work breakdown structure, deliverables, and fee to review and comment. These steps are critical in helping to provide a solid and detailed framework that carries through the life-cycle of a project; allowing for effective management of both schedule and budget through diligent tracking, intermediate milestones, reviews, and constant communication.

The following items will detail some of Tetra Tech's more specific project controls used for schedule, cost, and scope management.

Schedule Management for Timely Performance

Our ability to meet the project schedule is based on developing a reasonable schedule and diligently tracking progress. A realistic baseline schedule provides adequate time for client staff coordination and reviews, appropriate assumptions for permits and approvals, and stakeholder outreach and coordination. We use the following controls to maintain open communication during all project phases to minimize schedule delays.

Computer-Based Project Management

Tetra Tech uses Microsoft Project to prepare detailed project schedules. This software tracks progress, delineates deliverables, logs project milestones, and visibly reflects the relationship of various tasks. For highly complex projects, we will prepare more advanced schedules in Primavera P6. Resource-loaded schedules can provide resource balancing and integration with our labor forecast tool. Thirty-Day Look Ahead Schedules can be provided with monthly reports. Earned-Value Analyses will be included in each monthly report to show ongoing earned value versus budget.

Open Communication

Tetra Tech believes in open communication during all phases of every project. By meeting with the client to fully understand project requirements, we will minimize project re-design. During permitting, we will arrange pre-application meetings with regulatory agencies to help streamline the permit review. We have permitted numerous projects without receiving any requests for additional information, because we worked with the permitting agency in advance and incorporated their comments into the design before it was finalized.

Close Coordination During Construction

Tetra Tech will identify key items that may affect the schedule during construction. For example, where long lead items exist, we will encourage the contractor to submit critical shop drawings as soon as possible. We will then return those shop drawings before the allotted time for contract review. Our field inspectors will also continually review work progress and inform the project manager when progress is slipping, either for the entire project, or for individual project components.

Engineering Cost Controls

Tetra Tech's project management plan addresses the overall budget, the budget for each task, and anticipated billings. By coordinating schedule and budget as the project progresses, the project manager can easily monitor the billings versus the budget to keep the project on track. In addition, our management team maintains an overview of each project to prevent unforeseen issues that may create additional costs.

▼ Project Success Story

TIME SAVED:
3 MONTHS

Lift Station No. 29, No. 65, & No. 78 Improvements

City of Orlando, FL

Design Schedule:

Original: 09/2011 - 03/2012
Actual: 09/2011 - 12/2011

Construction Schedule:

Original: 10/2013
Actual: 10/2013

How Timeframes were Met:

The City had an opportunity to apply for grant funding in 01/2012; however, design was not scheduled to be completed for two more months. Tetra Tech worked with the City to eliminate two submittal phases (30% and 90%) and keep 60% and 100% submittals in order to reduce review and comment periods, as well as accelerate the work schedule to allow the City to meet the funding deadline.

Project Manager Portal

Tetra Tech has developed custom project management tools to help control costs from the big picture level to the granular level per hour billed. Each project manager has a PM Portal with a dashboard that shows a snapshot of all project performance. Custom reports include work breakdown structures, staff billing reports, weekly project transaction reports, and accounts receivable reports.

Proactive Communication

Controlling costs also requires proactive coordination to get it right the first time and avoid costly redesigns. Our design team will engage with CLIENT to proactively coordinate progress. Focusing on inter-discipline coordination, communicating questions, and using experienced staff helps cost control.

Utilize Technical Oversight

Our team's vast national resources enable us to provide expert technical development and review of each project as well as allow independent oversight. Checking quality at intermediate stages helps avoid time-consuming changes later in the design.

Computer-Based Accounting System

We enhance our project management plan by using our Oracle-based accounting system, TetraLinx. The TetraLinx system links directly to employee time sheets and updates billing information weekly. This electronic system reduces delays in providing the project manager with budget information. Staff enter timesheets every Friday, and on Monday morning, the project manager receives an automated Project Summary Report by email showing the budget used since the last invoice and the budget remaining. Tetra Tech also uses a Portfolio Review Workbook supplying the Project Manager with a dashboard of all project performance metrics.

Quarterly Project Reviews

Cost control relies on actively monitoring and assessing projects. Tetra Tech requires quarterly reviews of all projects by our operations managers. Larger projects (with budgets over $100,000) get more in-depth reviews and go through our Project Evaluation & Estimate at

Completion (PEEAC) review process. Project managers update the project cost price model by meeting with lead design engineers from each discipline and updating their estimates to complete the project. The Project Manager compares those estimates to the remaining budget and implements corrective actions if the effort is projected to exceed the budget. We evaluate the project for risks, health and safety, schedule delays, and subcontractor performance issues.

Cost Price Model

Cost control begins with establishing a realistic budget. Tetra Tech's experienced project managers and lead design engineers use our vast catalog of similar projects as a basis for developing project budgets. Lead design engineers create staffing plans and estimate hours per project milestone or deliverable. The project manager uses our custom pricing tool, the Cost Price Model to create the overall pricing plan with all direct and indirect costs, employee billing rates, overhead rates, and multipliers. The Cost Price Model generates a project labor plan and pricing plan. This tool follows the project from inception to close out and is updated quarterly for project reviews.

Construction Cost Controls

Tetra Tech's construction and scope management controls exist to provide the client with quality construction deliverables, potential cost reductions, and schedule tracking. We continue to evaluate solutions for possible delays, so the project can stay on track and within budget.

Cost Estimating Software

In addition to our own internal bid tabs, Tetra Tech also uses RS Means and CostWorks software for project construction cost estimating.

Value Engineering

Value engineering evaluates ways to reduce construction cost while still meeting the intent of design. It allows the team to arrive at the best possible operational system for a project. Value engineering team members would all have construction experience directly related to the client's needs, with years of general contracting and construction management experience.

Quality Documents

A major factor of Tetra Tech's excellent performance record is the ability to provide thorough and complete documents with which to estimate and control construction costs. Through years of experience, we know that good planning and superior quality deliverables are the best insurance for successful completion of a construction project.

Opinion of Probable Construction Cost (OPCC)

During the preliminary and design phases, Tetra Tech uses a bid form template to develop itemized lists of quantities. With that information in hand, we prepare an opinion of probable cost using recent bid data, escalators to project bids to current date, and anticipated material cost increases based on manufacturer discussions. Ongoing updates as design progresses and quantities are refined helps maintain the greatest possible accuracy of project cost estimates.

▼ Project Success Story

SAVINGS:
$1.5M

Southwest 6&7 Utilities Expansion Program
City of Cape Coral, FL

How Budgets were Met:

Tetra Tech completed this project under budget and ahead of schedule which includes over 200 miles of pipeline and 18 lift stations. Tetra Tech provided value engineering for over $1.5M in savings. Construction was separated into seven design packages for bidding by a pool of prequalified contractors. We used a third party documents management system to digitally manage field changes and updates to the construction documents which, in real-time, kept the owner, contractor, engineers, and inspectors reviewing the same documents.

Recipient of the FWEA David W. Yonker Water Reuse Award

LITIGATION ATTACHMENT

eRFP Mandatory Questions: List any lawsuits pending or completed within the past five (5) years involving the corporation, partnership or individuals with more than ten percent (10%) interest:

Phoenix Building Corp v. Tetra Tech

Date Opened: 8/4/2016
Plaintiff: Phoenix Building Corp SE
Defendant: Tetra Tech, Inc.
Case Number: 16-2016-CA-004896-XXXX-MA
Date Filed: N/A
Court County: Duval County - Florida
Status: Settled

Two City Plaza Condo. Assoc. v. Ardaman & Associates

Date Opened: 10/21/2016
Plaintiff: Two City Plaza Condominium Association, Inc.
Defendant: Ardaman & Associates, Inc.
Case Number: *50-2016-CA-011149-XXX-MB Date* **Filed:** 10/18/2016
Court County: Palm Beach County - Florida
Status: Settled

Phoenix Building Corp SE v. Tetra Tech

Date Opened: 10/31/2016
Plaintiff: Phoenix Building Corp SE
Defendant: Tetra Tech, Inc.
Case Number: 2016-ca-009194-o
Date Filed: 10/19/2016
Court County: Orange County - Florida
Status: Closed

Chubb Custom Insurance Co. v. Ardaman & Associates

Date Opened: 12/16/2016
Plaintiff: Chubb Custom Insurance Company as subrogee of First Church of Christ Scientist
Defendant: Ardaman & Associates, Inc.
Case Number: 2016-031146-CA-01
Date Filed: 12/8/2016
Court County: Miami Dade County- Florida
Status: Closed

Centennial Bank v. Tetra Tech

Date Opened: 6/19/2017
Plaintiff: (Aanya Hospitality, Inc.) Centennial Bank
Defendant: (Third-Party Defendant) Tetra Tech, Inc.
Case Number: 317-cv-00640-MMH-MCR
Date Filed: 6/7/2017
Court County: U. S. District Court, Middle District of Florida, Jacksonville Division
Status: Closed

Barcelona I Condominium Assoc. v. Ardaman

Date Opened: 7/17/2017
Plaintiff: Barcelona I Condominium Assoc, Inc.
Defendant: Ardaman & Associates, Inc.
Case Number: 17-12847 CA 09
Date Filed: 5/26/2017
Court County: 11th Judicial Circuit, Miami Dade
Status: Closed

Cecilia Sed et al. v. Ardaman

Date Opened: 8/8/2017
Plaintiff: Cecilia Sed and Jorge Sed
Defendant: Ardaman & Associates, Inc.
Case Number: 17-CA-7271
Date Filed: 8/2/2017
Court County: Hillsborough County - Florida
Status: Open

Phoenix Building Corp v. Tetra Tech

Date Opened: 3/28/2018
Plaintiff: Regions Bank DBA Regions Mortgage
Defendant: Ardaman & Associates, Inc.
Case Number: 50-2018-CA-003370-XXXX-MB
Date Filed: N/A
Court County: 15th Judicial Circuit, Palm Beach County - Florida
Status: Closed

1370 S. Ocean, LLC v. Ardaman & Associates, Inc.

Date Opened: 3/13/2019
Plaintiff: 1370 S. Ocean, LLC et al.
Defendant: Ardaman & Associates, Inc.
Case Number: 50-2021-CA-002592-XXXX-MB
Date Filed: 2/25/2021
Court County: Palm Beach - Florida
Status: Open

Gillespie Residence/Pentail Circle, Tampa

Date Opened: 7/12/2016
Plaintiff: Universal Property & Casualty Insurance Company a/s/o Jesse Aaron Gillespie and Cathleena Marie Gillespie
Defendant: Ardaman & Associates, Inc.
Case Number: 20-CA-006767
Date Filed: 8/25/2020
Court County: Hillsborough County - Florida
Status: Open

Fortress 2020 Landco v. Ardaman & Associates

Date Opened: 11/25/2020
Plaintiff: Fortress 2020 Landco, LLC
Defendant: Ardaman & Associates, Inc.
Case Number: 2020-CA-004459-AX
Date Filed: 11/17/2020
Court County: Manatee County- Florida
Status: Open

Grande Oaks at Heathrow Association, Inc. v. Ardaman & Associates, Inc.

Date Opened: 1/19/2021
Plaintiff: Grande Oaks at Heathrow Association, Inc.
Defendant: Ardaman & Associates, Inc.
Case Number: 2020-CA-003188
Date Filed:12/31/2020
Court County: Seminole - Florida
Status: Open

Silvart, Inc. v. Standard Pacific of South Florida GP, Inc.

Date Opened: 8/12/2019
Plaintiff: Silvart, Inc.
Defendant: Standard Pacific of South Florida GP, Inc. et al.
Case Number: CACE17019254
Date Filed: 6/26/2019
Court County: Broward County - Florida
Status: Settled

Concrete Services Unlimited v. Ardaman & Associates

Date Opened: 7/20/2021
Plaintiff: Concrete Services Unlimited Inc.
Defendant: Ardaman & Associates, Inc.
Case Number: 21000460CAA
Date Filed: 7/8/2021
Court County: Gadsden County- Florida
Status: Open

"A City for All Ages"

TRUTH-IN-NEGOTIATION CERTIFICATE

Solicitation#_20210093_____

Pursuant to Section 287.055(5)(a), Florida Statutes, for any lump-sum or cost-plus-a-fixed fee professional services contract over the threshold amount provided in Section 287.017, Florida Statutes for CATEGORY FOUR, the City of Port St. Lucie, Florida requires the Consultant to execute this certificate and include it with the submittal of the Technical Proposal, or as prescribed in the contract advertisement.

The Consultant hereby certifies, covenants, and warrants that wage rates and other factual unit costs supporting the compensation for this project's agreement are accurate, complete, and current at the time of contracting.

The Consultant further agrees that the original agreement price and any additions thereto shall be adjusted to exclude any significant sums by which the City determines the agreement price was increased due to inaccurate, incomplete, or non-current wage rates and other factual unit costs. All such agreement adjustments shall be made within (1) year following the end of the contract. For purposes of this certificate, the end of the agreement shall be deemed to be the date of final billing or acceptance of the work by the City, whichever is later.

Tetra Tech, Inc.
Name of Firm

Jill Hudkins
President or Designee (Printed)

President or Designee (Signed)

The foregoing instrument was acknowledged before me by Jill Hudkins, PE who is personally known to me or has produced in person on this last aforesaid 13 day of August, 2021.

(SEAL)

MELISSA AGUERO
MY COMMISSION EXPIRES
JUNE 2, 2024
#HH 006085
Bonded thru
Notary Public Underwriters
NOTARY PUBLIC, STATE OF FLORIDA

Signature
Melissa Aguero
Notary Name (typed or printed)

Notary Name (signed)

Page 1 of 1

"A City for All Ages"

E-Verify Form
Attachment G - E-Verify Form

Supplier/Consultant acknowledges and agrees to the following:

1. Shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Supplier/Consultant during the term of the contract; and

2. Shall expressly require any subcontractors performing work or providing services pursuant to the state contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

E-Verify Company Identification Number	225378
Date of Authorization	8/13/2021
Name of Contractor	Tetra Tech, Inc.
Name of Project	City of Port St. Lucie Continuing Engineering Services for Utility Projects
Solicitation Number (If Applicable)	20210093

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on August, 13, 2021 in Orlando (city), FL (state).

Signature of Authorized Officer

Jill Hudkins, PE. Unit President
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE 13 DAY OF August, 2021.

NOTARY PUBLIC

My Commission Expires: 6/2/24

MELISSA AGUERO
MY COMMISSION EXPIRES
JUNE 2, 2024
#HH 006085
Bonded thru Notary Public Underwriters
NOTARY PUBLIC, STATE OF FLORIDA

Page **1** of **1**

Attachment I - Drug Free Workplace Form

DRUG-FREE WORKPLACE FORM
eRFP # 20210093
Continuing Engineering Services for Utility Projects

The undersigned Contractor in accordance with Florida Statute 287.087 hereby certifies that

Tetra Tech, Inc. does:
(Name of Business)

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 proposal 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 proposal, 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 Florida Statutes or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

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

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

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

Bidder's Signature

8/13/21
Date:

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SUPPLIER LOCATION CERTIFICATION

Attachment D - PSL Location Form

The undersigned, as a duly authorized representative of the Supplier listed herein, certifies to the best of their knowledge and belief, that the Supplier's location is correctly reflected based upon the below information. For purposes of this section, "Location" shall mean a business which:

a) How far is the Supplier's fixed office or distribution point located from City Hall; and

b) Is the principal offeror who is a single offeror; a business which is the prime contractor and not a subcontractor; or a partner or joint venturer submitting an offer in conjunction with other businesses.

Complete the following and upload this document and the Google Maps print out to the required sourcing platform:

Business Name:	Tetra Tech, Inc.	
Current Local Address: Length of time at this address:	201 East Pine Street, Suite 1000 Orlando FL, 32801 31 years	Phone: (407) 839-3955 Fax: (407) 839-3790
Please provide your prior business address if the above address has been for less than one (1) year, prior to the issuance of this solicitation. Length of time at this address:	N/A	
Home Office Address: Length of time at this address:		Phone: Fax:

(Signed) _____

(Title) Unit President

MELISSA AGUERO
MY COMMISSION EXPIRES
JUNE 2, 2024
#HH 006085
Notary Public Underwriters
Bonded thru
NOTARY PUBLIC, STATE OF FLORIDA

STATE OF FLORIDA }
COUNTY OF ST. LUCIE} SS:

The foregoing instrument was acknowledged before me this *(Date)* 8/13/21

by: Jill Hudkins who is personally known to me or who has produced

in person as identification and who did (did not) take an oath.

Melissa Aguero, Melissa Aguero Commission No. HH 006085

Notary (print & sign name)

eRFP # 20210093

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NOTICE TO ALL PROPOSERS:

To ensure fair consideration is given for all Proposers, it must be clearly understood that upon release of the proposal and during the proposal process, firms and their employees of related companies as well as paid or unpaid personnel acting on their behalf shall not contact or participate in any type of contact with City employees, department heads or elected officials, up to and including the Mayor and City Council. The "Cone of Silence" is in effect for this solicitation from the date the solicitation is advertised on DemandStar, until the time an award decision has been approved by City Council and fully executed by all parties. Information about the Cone of Silence can be found under the City of Port St. Lucie Ordinance 20-15, Section 35.13. Contact with anyone other than the Issuing Officer may result in the vendor being disqualified. All contact must be coordinated through Mr. Jason Bezak, Issuing Officer, for the procurement of these services.

All questions regarding this Solicitation are to be submitted in writing to Jason Bezak, Procurement Agent I with the Procurement Management Department via e-mail JBezak@cityofpsl.com, or by phone 772-344-4068. Please reference the Solicitation number on all correspondence to the City.
All questions, comments and requests for clarification must reference the Solicitation number on all correspondence to the City. Any oral communications shall be considered unofficial and non-binding.

Only written responses to written communication shall be considered official and binding upon the City. The City reserves the right, at its sole discretion, to determine appropriate and adequate responses to the written comments, questions, and requests for clarification.

**NOTE: All addendums and/or any other correspondence before bid close date (general information, question and responses) to this solicitation will be made available exclusively through the DemandStar's Website for retrieval. All notice of intent to award documentation will be published on the City Clerk's Website. Proposers are solely responsible for frequently checking these websites for updates to this solicitation.*

I understand and shall fully comply with all requirements of City of Port. St. Lucie Ordinance 20-15, Section 35.13.

Typed Name: Jill Hudkins
Signed: [signature]
Company and Job Title: Tetra Tech, Inc. Unit President
Date: 8/13/21

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eRFP #20210093
ATTACHMENT F - CONSULTANT'S CODE OF ETHICS

The City of Port St Lucie ("City), through its Procurement Management Department ("Procurement Management Department") is committed to a procurement process that fosters fair and open competition, is conducted under the highest ethical standards and enjoys the complete confidence of the public. To achieve these purposes, Procurement Management Department requires each vendor who seeks to do business with the City to subscribe to this Consultant's Code of Ethics.

- A Consultant's bid or proposal will be competitive, consistent and appropriate to the bid documents.
- A Consultant will not discuss or consult with other Vendors intending to bid on the same contract or similar City contract for the purpose of limiting competition. A Vendor will not make any attempt to induce any individual or entity to submit or not submit a bid or proposal.
- Consultant will not disclose the terms of its bids or proposal, directly or indirectly, to any other competing Vendor prior to the bid or proposal closing date.
- Consultant will completely perform any contract awarded to it at the contracted price pursuant to the terms set forth in the contract.
- Consultant will submit timely, accurate and appropriate invoices for goods and/or services actually performed under the contract.
- Consultant will not offer or give any gift, item or service of value, directly or indirectly, to a City employee, City official, employee family member or other vendor contracted by the City.
- Consultant will not cause, influence or attempt to cause or influence, any City employee or City Official, which might tend to impair his/her objectivity or independence of judgment; or to use, or attempt to use, his/her official position to secure any unwarranted privileges or advantages for that Vendor or for any other person.
- Consultant will disclose to the City any direct or indirect personal interests a City employee or City official holds as it relates to a Vendor contracted by the City.
- Consultant must comply with all applicable laws, codes or regulations of the countries, states and

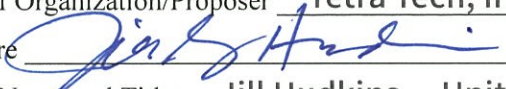
localities in which they operate. This includes, but is not limited to, laws and regulations relating to environmental, occupational health and safety, and labor practices. In addition, Consultant must require their suppliers (including temporary labor agencies) to do the same. Consultant must conform their practices to any published standards for their industry. Compliance with laws, regulations and practices include, but are not limited to the following:

- Obtaining and maintaining all required environmental permits. Further, Consultant will endeavor to minimize natural resource consumption through conservation, recycling and substitution methods.

- Providing workers with a safe working environment, which includes identifying and evaluating workplace risks and establishing processes for which employee can report health and safety incidents, as well as providing adequate safety training.

- Providing workers with an environment free of discrimination, harassment and abuse, which includes establishing a written anti-discrimination and anti-bullying/harassment policy, as well as clearly noticed policies pertaining to forced labor, child labor, wage and hours, and freedom of association.

Name of Organization/Proposer Tetra Tech, Inc.

Signature 

Printed Name and Title Jill Hudkins - Unit President

Date 8/13/21

DISCLAIMER: This Code of Ethics is intended as a reference and procedural guide to contractors. The information it contains should not be interpreted to supersede any law or regulation, nor does it supersede the applicable contractor contract. In the case of any discrepancies between it and the law, regulation(s) and/or contractor contract, the law, regulatory provision(s) and/or vendor contract shall prevail.

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NON-COLLUSION AFFIDAVIT

Solicitation # 20210093
Continuing Engineering Services for Utility Projects

State of Florida

County of Orange County }

Jill Hudkins, PE, being first duly sworn, disposes and says that:
(Name/s)

1. They are President of Tetra Tech the Proposer that
(Title) (Name of Company)

has submitted the attached PROPOSAL;

2. He is fully informed respecting the preparation and contents of the attached proposal and of all pertinent circumstances respecting such PROPOSAL;

3. Such Proposal is genuine and is not a collusive or sham Proposal;

4. Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Proposer, firm or person to submit a collusive or sham Proposal in connection with the contract for which the attached proposal has been submitted or to refrain from proposing in connection with such Contract or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Proposer, firm or person to fix the price or prices in the attached Proposal or of any other Proposer, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Port St. Lucie or any person interested in the proposed Contract; and

5. The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Proposer or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

(Title) Unit President

"A City for All Ages"

STATE OF FLORIDA }
COUNTY OF ST. LUCIE} SS:

The foregoing instrument was acknowledged before me this *(Date)* 8/13/21

by: Jill Hudkins, PE who is personally known to me or who has produced

in person as identification and who did (did not) take an oath.

Commission No. HH 006085

Notary Print: Melissa Aguero

Notary Signature: Melissa Aguero

MELISSA AGUERO
MY COMMISSION EXPIRES
JUNE 2, 2024
#HH 006085
Bonded thru
Notary Public Underwriters
NOTARY PUBLIC, STATE OF FLORIDA

"A City for All Ages"

CONTRACTOR'S QUESTIONNAIRE
eRFP # 20210093
Solicitation Name: Continuing Engineering Services for Utility Projects

It is understood and agreed that the following information is to be used by the City of Port St. Lucie to determine the qualifications of Contractors to perform the work required. The Contractor waives any claim against the City that might arise with respect to any decision concerning the qualifications of the Consultant.

The undersigned attests to the truth and accuracy of all statements made on this questionnaire. Also, the undersigned hereby authorizes any public official, Consultant, surety, bank material or equipment manufacturer, or distributor, or any person, firm, or corporation to furnish the City of Port St. Lucie any pertinent information requested by the City deemed necessary to vary the information on this questionnaire.

1. **ORGANIZATIONAL PROFILE**- COMPANY NAME: **Tetra Tech, Inc.**

PHYSICAL ADDRESS: **201 East Pine Street, Suite 1000, Orlando FL, 32801**

MAILING ADDRESS: **201 East Pine Street, Suite 1000, Orlando FL, 32801**

TELEPHONE NUMBER: **(407) 839-3955** FAX NO. **(407) 839-3790**

CONTACT PERSON **Jon D. Fox** E-MAIL : **Jon.fox@tetratech.com**

Is the firm incorporated? Yes--No If yes, in what state? Provide a list of officers for this entity.
Delaware. Due to limited space a list of officers can be found on attachment 1

2. **COMPLETION OF FORM** - An authorized representative of the firm offering this Proposal must complete this form in its entirety. Terms entered herein shall not be subject to withdrawal or escalation by Contractor. The City reserves the right to hold proposals for a period not to exceed one hundred twenty (120) calendar days after the date of the proposal opening stated in the Invitation to Proposal before awarding the Contract. Contract award constitutes the date that City issues an executed Purchase Order.

3. **CONTRACT** - Contractor agrees to comply with all requirements stated in the specifications for this RFP.

4. **AGREEMENT** - Contractor agrees to comply with all requirements stated in the specifications for this RFP.

CERTIFICATION:

This RFP is submitted by: Name (print) **Jon D. Fox** who is an officer of the above firm duly authorized to sign proposals and enter into contracts. I certify that this solicitation

response is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a proposal for the same materials, supplies, or equipment, and is in all respects fair and without collusion or fraud.

The Contractor understands that information contained in this Solicitation Reply will be relied upon by City in awarding the proposed Contract and such information is warranted by the proposer to be true. The undersigned Contractor agrees to furnish such additional information, prior to acceptance of any solicitation relating to the qualifications of the proposer, as may be required by the City.

I certify that the information and responses provided on this Solicitation are true, accurate and complete. The City may contact any entity or reference listed in this Proposal. Each entity or reference may make any information concerning the Contractor available to the City.

I agree to abide by all conditions of this RFP:

_____ Signature

Vice President
Title

If a corporation renders this Proposal, the corporate seal attested by the secretary shall be affixed below. Any agent signing this Proposal shall attach to this form evidence of legal authority.

Witnesses:

_____
Print name

_____

_____
Print name

_____

If Individual:

_____
Signature

_____
Print Name

If Partnership:

_____
Print Name of Firm

By: _____
(General Partner)

If Corporation:

Tetra Tech, Inc.
Print Name of Corporation

By: _____
(Vice President)

Attest: _____
(Secretary)

TETRA TECH, INC. INCORPORATED FEB 4 1988 DELAWARE

CERTIFICATE

TETRA TECH, INC.

To Whom It May Concern:

I hereby certify to you that I am the duly elected and qualified Senior Vice President, General Counsel and Secretary of Tetra Tech, Inc., a Delaware corporation (the "Company"), and that as such, I am authorized to execute this Certificate on behalf of the Company. I further certify to you on behalf of the Company that:

Jon Fox, Vice President, IEW within the Company's United States Resilient and Sustainable Infrastructure Division of the Government Services Group, is authorized and empowered, in the name of the Company, in accordance with the Company's Signature Approval Authority Matrix, as approved by the Company's Board of Directors, for and on behalf of the Company, to execute eRFQ #20210093 with the City of Port St. Lucie Continuing Engineering Utilities Services for Utility Projects.

IN WITNESS WHEREOF, I have hereunto set my hand as of this 12th day of August, 2021.

Preston Hopson
Senior Vice President, General Counsel and Secretary

(Seal)

Attachment #1

As requested per the Contractors Questionnaire Form below is a list of officers for Tetra Tech.

- Dan L. Batrack
  Chairman, Chief Executive Officer
- Leslie L. Shoemaker
  President
- Steven M. Burdick
  Executive Vice President, Chief Financial Officer
- William R. Brownlie
  Senior Vice President, Chief Engineer
- Brian N. Carter
  Senior Vice President, Corporate Controller and Chief Accounting Officer
- Craig L. Christensen
  Senior Vice President, Chief Information Officer
- Preston Hopson
  Senior Vice President, General Counsel, and Secretary
- Richard A. Lemmon
  Senior Vice President, Corporate Administration
- Brendan O'Rourke
  Senior Vice President, Enterprise Risk Management
- Mark A. Rynning
  President, Resilient and Sustainable Infrastructure Division
- Jill Hudkins
  IEW Unit President, Strategic Initiatives Lead
- Jon D. Fox
  Vice president