



Consultant Services Authorization

Firm	Carollo Engineers, Inc.
Master Agreement No.	2024-007
CSA No.	2024-007-03
Project Name	Pressure Monitoring Planning Support
Project Description	Consultant will provide project management, pressure zones and monitoring equipment evaluation, development of data governance policy, and a phased implementation plan.
Projects Exhibits and Attachments	Exhibit "A"- Scope of Services Exhibit "B"-Fee Schedule (Master Agreement) Exhibit "C"-Reimbursable Cost Schedule (if applicable) Exhibit "D"-Insurance Documents
Duration (in days)	This authorization shall be in full force and effect until the Consultant completes all services as identified in Exhibit "A".
Compensation	\$ 165,451.48
Special Contract Conditions	NA
Insurance Requirements	Professional Liability
Liquidated Damages	\$ 0.00 Per Day
Budget Source/Availability	42011.680536150.5666000.6897998 (Utilities Misc. Services)

IN WITNESS WHEREOF, the parties hereto have executed this CSA on this ___ day of _____, 20__.

Attest:
STACY M. BUTTERFIELD

POLK COUNTY, a Political subdivision
of the State of Florida

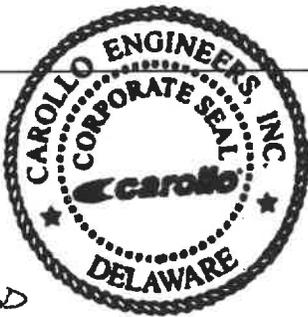
By: _____
Deputy Clerk

By: _____
Chairman
Board of County Commissioners

Date Approved by Board: _____

Review as to form and legal sufficiency
Alvin Dummitt
County Attorney's Office Date _____

Attest:



Kristi Powers
Corporate Secretary

Carollo Engineers, Inc.
CONSULTANT COMPANY NAME

MT G M
Authorized Corporate Officer

Scott Richards Vice President
[Printed Name and Title]

SEAL

Date: 1/13/2026

Date: 1/13/2026

Exhibit A

Consultant Services Authorization

2024-007-03

Pressure Monitoring Planning Support

Carollo Engineers, Inc., (Consultant) entered into a Master Consulting Agreement (Agreement) with Polk County, Florida (County) on January 9, 2024. Pursuant to this Agreement, the County has requested that the Consultant provide certain professional services in support of Pressure Monitoring Planning Support (Project) as further detailed in this Consultant Services Authorization.

A. Project Background and Description

The objectives of the Pressure Monitoring Planning Support project are as follows:

1. Evaluate with the County pressure monitoring sensors, communication technology, and data integration alternatives for selection of a solution(s) that best fits the goals of the County for system pressure monitoring and data analysis.
2. Develop an understanding of the pressure monitoring sensors and locations the County could consider for potable, reclaimed and wastewater pressure monitoring.
3. Develop a standard list of equipment for each potential site where pressure monitoring would be performed.
4. Develop pressure monitoring zones for consideration.
5. Develop a phasing plan for the implementation of the equipment, as well as the cloud software required to read and display the associated data.
6. Develop a data integration plan for incorporating pressure monitoring data into a GIS based system for analysis, troubleshooting, and system management.

B. Scope of Services

Upon authorization to proceed from the County, the Consultant will provide the following identified services. The Consultant shall prepare all planning and reports to be consistent with the Polk County Utilities Standards and Specifications Manual, the latest edition, and other applicable County requirements. This authorization shall be in full force and effect until the Consultant completes all services as described in the Consultant Services Authorization and any subsequent modifications hereto.

Phase 100 – Project Management

Task 101 – Project Management

This task consists of overall management of the Project including contract administration, budget management, invoicing, monthly status reports, scheduling, and coordination with the County and Consultant's subconsultants, as applicable.

Task 102 – Kick-off Meeting and Review Meetings

The Consultant will attend one (1) kickoff meeting with the County. The Consultant will prepare a meeting agenda and meeting minutes. Meeting minutes will be distributed within three working days of the meeting date.

- Kick off Meeting

Phase 200 – Pressure Monitoring Equipment Review

Task 201 – Review of Industry Standards for Pressure Monitoring

The Consultant will review existing information on current remote pressure monitoring solutions being used by the County and provide and develop typical equipment options for various locations in the County, including:

1. Residential connections
2. Lift Station pressure monitoring
3. Potable/Reclaimed Distribution monitoring
4. Booster pump station monitoring, etc.

Task 202 – Alternatives Development

The Consultant will develop alternatives for analysis for pressure monitoring devices, communications, and data integration. Multiple types of solutions will be considered, including the following:

- Fully packaged solutions that include cloud hosted data services, complete communications and local data integration units, and optionally integrated sensors.
- Semi-packaged remote telemetry units that can be connected to any type of network and use any type of sensor.

- Fully customized solutions using off the shelf components paired together to make a customizable solution.

These solution types will be compared for their ease of deployment, reliance on a single or multiple vendors, and ability to meet the pressure monitoring requirements.

Pressure monitoring devices will include review of standard industrial pressure sensors typically seen in plant facilities, lower cost alternatives, and units with small form factors and low power consumption as well as systems that are packaged with integral power and communications. The capabilities and communication options for the sensors will be compared and discussed with the County for the selection of sensors for the appropriate locations in the distribution system.

Communication options for the various sensor types will be reviewed with the County. The existing SCADA communication infrastructure and AMI systems will be evaluated to determine if utilizing these networks is practical and offers any advantages for reduced cost and data integration. Communication, such as cellular and satellite, will also be evaluated.

Data integration will consider where data is initially integrated into a County hosted system or cloud hosted database and County staff departments that require data access. Evaluation of visualization options for displaying data will be performed under Phase 400.

Task 203 – Equipment Review Technical Memorandum

A technical memorandum will be prepared with the various types of locations where pressure monitoring devices may be installed, with best practices for each installation type, as well as recommendations for the County to consider.

The Consultant will prepare a workshop where the available information will be reviewed and discussed for County input. Following the workshop, recommendations will be presented for the proposed solution(s) to be approved by the County. The approved solution(s) will then be used in the development of the overall pressure monitoring plan.

Phase 300 – Potable, Reclaimed and Force Main Pressure Zones

Task 301 – Review of Existing County Data

The Consultant will request a list of data to be used as part of the pressure monitoring analysis. This data will be used to analyze pressure monitoring locations, identify SCADA-ready sites, and identify critical distribution system equipment that may require monitoring. The Consultant will request the following data:

1. GIS files for the following within the County's service areas:
 - a. Potable water mains
 - b. Reclaimed water mains
 - c. Force mains
 - d. Known backflow preventers
 - e. County service boundaries
 - f. All County-owned lift stations
 - g. Potable and reclaim blowoffs or automatic flushing units, etc.
 - h. Wastewater and Water Plant Sites
 - i. County-owned facilities (fire stations, police stations, etc.) where reliable power is available.

Additional data may be requested during the course of the project.

Task 302 – Development of Pressure Zones for Water, Reclaimed and Wastewater

The Consultant team will use the requested GIS data to develop pressure zones for the potable, reclaimed, and wastewater systems. These pressure zones include critical areas, isolated systems, and sub-areas of larger basins for the County's Central, East, Northeast and Southwest regions.

The potable distribution systems are generally well interconnected, and distribution pressures can be monitored at various locations, including high-service pump stations, interconnects with large residential developments, potable connections at County-owned lift stations, fire hydrants, and other points. Reclaimed water systems are typically one-way systems with limited interconnections, similar to wastewater force main systems. As a result, potential monitoring locations for pressure in the reclaimed distribution system are limited to air release valves (ARVs), blowoffs, pump stations, or interconnections. The wastewater system will focus on the

force main system, where multiple pumps may be manifolded into a larger collection system or a critical force main located in sensitive areas—such as near an impaired water body, a highly developed part of the County, or nearby other critical facilities. The Consultant will prioritize force mains based on their criticality, size, and location to identify key sites for potential pressure monitoring. Generally, pressure monitoring devices for force mains will need to be battery-powered, installed on ARVs, active blowoff pipes or other areas away from available stable power. The Consultant will compile a list of potential wastewater monitoring locations, prioritize these sites, and determine suitable pressure monitoring equipment for each location or tapped pipe.

Task 303 - Development of Pressure Zones for Water, Reclaimed and Wastewater

The Consultant will review all available information for the potable, reclaimed, and wastewater system and develop a list of locations where pressure monitoring devices can be installed. The Consultant will also prioritize the various types of installation locations for ease of installation, ease of maintenance, available power, reliability of the data and security. The results of this analysis will be presented to the County in a technical workshop and a technical memorandum.

Phase 400 – Data Collection and Visualization

Task 401 – Development of Data Governance Policy and Workshop

The Consultant will work with the County to develop data governance policies for the means and methods of collecting pressure data from the potable, reclaimed, and wastewater systems. The policies will outline the following:

1. Frequency of pressure readings for each type of system.
2. The parameters each reading will be required to log.
3. Naming conventions for the parameters.
4. The acceptable amount of error for each type of pressure logging device.
5. Security protocols for sending the data from the device to either the County's cloud-based centralized database, third-party cloud-based database, or an alternative location-based database.

The policy will also include recommendations for logging the data within the County's SCADA system. It is possible for part of the data or all of the pressure logged data to be sent directly to

the SCADA system. Any data entering the SCADA system will require a unique SCADA tag, as detailed in the policy. This allows for a clear and effective tagging system to be in place for future integrators as new devices are added to the system. A workshop will be held with the County to review the policy and details of the tagging system for compliance with the County's overall data management goals.

All pressure monitoring data is planned to be stored in a single, comprehensive data lake. Alternatives data repositories will be compared, and a selection of solutions will be determined for use in the implementation plan. These systems will be evaluated based on current and future data needs and connectivity to other systems such as Simplify3, GIS, Power BI, Hydraulic Modeling software, AMI Meter Data Management Systems, and future potential applications.

Visualization of data is planned in PowerBI to integrate data from multiple systems with the ability to integrate with GIS. The Consultant will hold a meeting to discuss preferences for data visualization, data calculations, comparison of data sets, and development of performance and risk indicators.

Task 402 – Visualization Example Development

The Consultant will develop up to four (4) draft data display screens for review and comment. The draft data display screen will be updated based on comments from the County to be used as a template during implementation. The availability of current hydraulic modeling data will be verified for inclusion in the initial visualization template for comparison of calculated and actual pressure data.

Task 403 – Visualization Technical Memorandum

The Consultant will compile the information developed as part of Task 4 and document it in a technical memorandum for County review and comments. All feedback from the stakeholders will be implemented into the final version of the memorandum.

Phase 500 – Phased Implementation Plan

Task 501 – Implementation Plan Development and Workshop

The Consultant will work with the County to develop an implementation plan for each of the pressure zones such that the County would be able to log and measure pressure in critical pressure zones first and build the system out methodically. The phased approach will include a

high level schedule of the equipment procurement, SCADA/Data integration, field installation and start up procedures for each pressure zone or region of the County.

The implementation plan will be developed for incorporation into the County Capital Improvement Projects (CIP) planning process. Development of specific implementation projects, including expected scope, will be developed for CIP planning. The Consultant will prepare for and lead a discussion with the County to discuss the Opinion of Probable Cost (OPCC) assumptions, priority areas, schedule and overall preferences of the County.

Task 502 – Development of Class 4 Cost Estimate

The Consultant will also prepare an AACE Class 4 opinion of probable cost (OPCC) for the installation of the equipment to assist the team with phasing and scheduling of the pressure zone installations.

Task 503 – Implementation Plan Technical Memorandum

The Consultant will compile the information developed as part of Task 5 and document it in a technical memorandum for County review and comments. All feedback from the stakeholders will be implemented into the final version of the memorandum.

C. Deliverables

The Consultant shall prepare and submit to the County, including electronic format when applicable, the following deliverables:

Task	Activity	Deliverable
102	Meetings	Meeting agenda and minutes
201-203	Equipment Technical Memorandum	Draft/Final Pressure Monitoring Equipment Technical Memorandum, to be submitted electronically to the County (pdf)
302	Pressure Zone Maps	Draft and Final Potable/Reclaim/Wastewater Pressure Zone Maps (PDF)
303	Workshop and Pressure Zone Technical Memorandum	Workshop Meeting Agenda and Minutes and Draft and Final Pressure Zones and Location Technical Memorandum (PDF and Word)

Task	Activity	Deliverable
401	Governance Workshop Meeting Agenda and Minutes	Pressure Data Governance Policy Workshop Meeting Agenda and Minutes
402	Visualization Templates in Power BI	Draft and final pressure templates to use as examples for the full implementation of the pressure logging system.
403	Governance Technical Memorandum	Draft and Final Potable/Reclaim/Wastewater Data Governance Policy Technical Memorandum (PDF and Word)
501	Workshop and meeting minutes	Workshop Meeting Agenda and Minutes and Draft and Final implementation plan develop workshop.
502	Class 4 cost estimate	Cost estimate for the implementation of the pressure logging system within the County.
503	Implementation Plan Technical Memorandum	Draft and Final Implementation Plan Technical Memorandum (PDF and Word)

D. Schedule

Consultant will proceed with the services identified herein immediately upon receipt of an executed copy of this Consultant Services Authorization and a formal Notice-to-Proceed from the County. The projected schedule for the performance of services described herein, in Gantt Chart format, is included as Attachment A-1. An updated electronic version of the Project schedule in Microsoft Project will be provided to the County within 10 working days from the issuance of the Notice-to-Proceed. Delivery of the schedule may be in other electronic formats so long as they accurately portray the approved scope of services with sufficient detail subject to staff approval. Should additional time be required beyond the schedule depicted in Attachment A-1, The Consultant will provide an updated Attachment A-1 (schedule) to the Utilities and Procurement Divisions. Following staff approval, the updated Attachment A-1 will be forwarded by Utilities staff to Procurement staff for inclusion in the contract file with no further administration action required for extension.

E. Compensation

This Consultant Services Authorization establishes a not-to-exceed cost of \$165,451.48. Compensation for the services performed under this Consultant Services Authorization shall be on an hourly, not-to-exceed basis using the current hourly rate schedule as set forth in Master Consulting Agreement 2024-007. Other direct costs or expenses incurred in connection with this Consultant Services Authorization will not be invoiced as these expenses have been accounted for in the rate multiplier associated with the Master Consulting Agreement referenced above. A summary of the estimated labor costs is provided in Attachment A-2 for reference only. Each invoice submittal shall include a tabular summary of the originally estimated labor costs by phase in accordance with Attachment A-2, fees invoiced to date, and the balance remaining per phase. The transfer of funds between defined phases is not permitted unless approved in advance in writing by the County Utilities Director. To request consideration for such a transfer, the Consultant must submit satisfactory written justification to transfer unused funds from phases with completed tasks or tasks clearly tracking under budget to phases with tasks requiring additional funding. In addition, the transfer of funds shall not exceed the total authorized fee for the Project.

The not-to-exceed cost for this Consultant Services Authorization includes contingency funds in the amount of \$15,000. The contingency funds authorized for use on this Consultant Services Authorization may only be expended upon written approval from the County's Utilities Director. Adequate justification must be provided by the Consultant for the release of contingency funds. Any out-of-scope services performed requiring the release of contingency funds will be considered at-risk and may not be compensated until, or if, written approval is granted by the County's Utilities Director.

The Consultant will minimally provide a consultant invoice summary with each invoice, based on a mutually agreed-upon breakdown of phases and tasks in Attachment A-1 that reflect the effort and deliverables submitted to the County. The summary will depict the overall phases, associated budgets, amounts invoiced to date, and balance remaining. The Consultant's invoices for compensation will include the reviewed and approved consultant invoice summary, an updated Project schedule, notarized affidavits, and the monthly status report.

Invoices for not-to-exceed projects shall be accompanied by time and task records for all billable hours appearing on the invoice. The County may request additional documentation and, if so requested, shall be furnished by the Consultant to the County Auditor's satisfaction. In addition,

all invoices shall be submitted with the Consultant Services Authorization number, purchase order number, and the Polk County Utilities Project and Records Room numbers on the invoice.

The Consultant agrees that, in the event that errors and / or omissions are discovered during the Project, all services rendered by the Consultant to correct said design errors and / or omissions will be considered out-of-scope services and shall not be invoiced to the County.

F. County's Responsibilities

The County will provide the following information to the Consultant and / or perform the following services related to the Project:

- Documentation requested.
- Access existing data systems for development of PowerBI template connected to County data systems where available.
- Relevant documentation of the distribution and collection systems.
- Access to the County GIS system for connectivity to PowerBI for templates.

G. Services Not Included

The following services are not included in the Scope of Services for the Project:

- Visual inspection of equipment at time of delivery.
- Survey, Geotech and SUE of each site for design purposes.
- Subsurface utility inspection of each site for design purposes.
- Implementation of pressure monitoring devices or systems.
- SCADA programming support.
- Oversight of equipment installations.

H. Assumptions

The Scope of Services and compensation arrangement outlined in this Consultant Services Authorization are based on the following assumptions:

In providing opinions of cost, financial analyses, economic feasibility projections, schedules, and quantity and/or quality estimates for potential projects, Consultant has no control over actual equipment cost or price of labor and material provided by others; unknown or latent conditions

of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; the incoming water quality and/or quantity; the way County's plant(s) and/or associated processes are operated and/or maintained; and other economic and operational factors that may materially affect the ultimate project elements, including, but not limited to, cost or schedule. Therefore, Consultant makes no warranty that County's actual project costs, financial aspects, economic feasibility, schedules, and/or quantities or quality realized will not vary from Consultant's opinions, analyses, projections, or estimates and Consultant will not be liable to and/or indemnify County and/or any third party related to any inconsistencies between Consultant's projections and estimates and actual costs and/or quantities realized by County and/or any third party in the future, except to the extent such inconsistencies are caused by Consultant's negligent performance hereunder.

The services to be performed by Consultant are intended solely for the benefit of the County. No person or entity not a signatory to this Services Authorization shall be entitled to rely on Consultant's performance of its services hereunder, and no right to assert a claim against Consultant by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Services Authorization or the performance of Consultant's services hereunder.

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Attachment A-1

Project Schedule

Project Schedule - AMI Support Services Southwest (Calendar Months Following Notice to Proceed)

Task No.	Task Description	2026								
		1	2	3	4	5	6	7	8	9
100	Project Start Up									
101	Project Management									
102	Kick-Off Meeting									
200	Pressure Monitoring Equipment Review									
201	Review of Industry Standards for Pressure Monitoring									
202	Alternatives Development									
203	Equipment Review Technical Memorandum									
300	Potable, Reclaimed and Force main Pressure Zone									
301	Review of Existing County Data									
302	Development of Pressure Zones for Water, Reclaimed and Wastewater									
303	Pressure Zone Technical Memorandum									
400	Data Collection and Visualization									
401	Development of Data Governance Policy and Workshop									
402	Visualization Example Development									
403	Visualization Technical Memorandum									
500	Phased Implementation Plan									
501	Implementation Plan Development and Workshop									
502	Development of Class 4 Cost Estimate									
503	Implementation Plan Technical Memorandum									

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Exhibit "B"

Board of County Commissioners of Polk County Utilities Design Services and Regulatory Support Services

RFP 23-448

Carollo Engineers, Inc.

Rate Schedule

Personnel Classification	Range of Direct Labor Rates				Range of Hourly Billing Rates			
Assistant Professional	\$	29.84	\$	44.59	\$	91.00	\$	135.99
Professional	\$	44.60	\$	56.06	\$	136.03	\$	170.99
Project Professional	\$	56.07	\$	69.18	\$	171.00	\$	210.99
Lead Professional	\$	69.19	\$	83.99	\$	211.03	\$	256.17
Senior Professional	\$	84.00	\$	99.60	\$	256.20	\$	303.78
Technician	\$	26.56	\$	38.03	\$	81.00	\$	115.99
Lead Technician	\$	38.03	\$	60.98	\$	116.00	\$	185.99
Senior Technician	\$	60.98	\$	64.92	\$	186.00	\$	198.00
Admin/Clerical	\$	15.08	\$	28.19	\$	46.00	\$	85.99
Document Processing	\$	28.20	\$	41.64	\$	86.00	\$	127.00

Exhibit B

**Board of County Commissioners of Polk County
Utilities Design Services and Regulatory Support Services**

RFP 23-448

**Carollo Engineers, Inc.
Labor Multiplier Classification**

Direct Labor	1.00
Employee Benefits	0.60
Overhead/General and Administration	1.30
Subtotal	<u>2.9</u>
Profit	0.10
Other Direct Costs	0.05
Total Labor Multiplier including Profit	<u>3.05</u>