

**AGREEMENT FOR PROFESSIONAL SERVICES FOR WATER PLANT AND WATER
RESOURCES ENGINEERING SERVICES RFQ2019070
WORK ORDER 7**

**Indian River County Department of Utility Services
SCADA System Upgrades at Hobart Water Treatment Plant**

This Work Order Number 7 is entered into as of this ____ day of _____, 202_, pursuant to that certain AGREEMENT FOR PROFESSIONAL SERVICES FOR WATER PLANT AND WATER RESOURCES ENGINEERING SERVICES RFQ2019070 entered into as of this 5th day of November, 2019 (collectively referred to as the "Agreement"), by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida ("COUNTY") and Kimley-Horn and Associates, Inc. ("Consultant").

The COUNTY has selected the Consultant to perform the professional services set forth on Exhibit A (Scope of Work), attached to this Work Order and made part hereof by this reference. The professional services will be performed by the Consultant for the fee schedule set forth in Exhibit B (Fee Schedule), attached to this Work Order and made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit C (Time Schedule), attached to this Work Order and made a part hereof by this reference all in accordance with the terms and provisions set forth in the Agreement. Pursuant to paragraph 1.4 of the Agreement, nothing contained in any Work Order shall conflict with the terms of the Agreement and the terms of the Agreement shall be deemed to be incorporated in each individual Work Order as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this Work Order as of the date first written above.

CONSULTANT:

**BOARD OF COUNTY COMMISSIONERS
OF INDIAN RIVER COUNTY**

By: _____

By: _____

Peter D. O'Bryan, Chairman

Print Name: _____

Title: _____

BCC Approved Date: _____

Attest: Jeffrey R. Smith, Clerk of Court and Comptroller

By: _____

Deputy Clerk

Approved: _____

Jason E. Brown, County Administrator

Approved as to form and legal sufficiency: _____

Dylan T. Reingold, County Attorney

EXHIBIT #1

Supervisory Control and Data Acquisition (SCADA) System Upgrades at Hobart Water Treatment Plant

PROJECT UNDERSTANDING

Kimley-Horn recently completed the final design for the Hobart (North) Water Treatment Plant (WTP) SCADA/PLC system improvements.

Under Work Order No. 2, Indian River County Utilities Department retained the services of Kimley-Horn to complete design for improvements to the Hobart (North) Water Treatment Plant Supervisory Control and Data Acquisition (SCADA) and Programmable Logic Controllers (PLC). These improvements are going to be implemented to the WTP control system to upgrade antiquated hardware and add to the County's redundancy and reliability with their treatment process control. Indian River County Utilities Department desires to publicly advertise these improvements for bidding and desires to utilize the services of Kimley-Horn, and it's subconsultants, to provide construction phase services and programming and integration assistance for these proposed improvements.

The following scope outlines the work necessary to provide construction phase services for the proposed improvements, and the integration labor required to program each of the respective upgrades to the PLCs, remote I/O panels and various other components.

SCOPE OF WORK

Consultant will utilize the services and provide coordination of Control Systems Design, Inc., and C&W Engineering in the execution of these tasks.

TASK 1 – CONSTRUCTION PHASE SERVICES

Consultant will attend one (1) pre-construction meeting with the Contractor, Owner, Electrical Engineer, and Integrator.

Consultant will review shop drawings for conformance with the bid documents. It is assumed that up to ten (10) shop drawings will be reviewed.

Consultant will respond to a reasonable number of requests for information (up to 4 assumed).

Consultant will review Contractor's monthly applications for payment.

Consultant will attend up to three (3) progress meetings on-site.

Consultant will assist the Owner with closeout documentation review prior to completion of the project.

TASK 2 - PROGRAMMING AND INTEGRATION

Consultant will review and completely vet the current HMI migration to VTScada.

Consultant will modify the main PLC panel to remove the ControlNet modules, one IA16 module and one ENBT, relocate the two EN2T modules in the CPU rack and modify all programming to correct the current configuration to ethernet communications from the CPU rack to the local RIO rack.

Consultant will migrate North Beach communications from North Pump Station PLC to direct via Red Lion converter at each end to provide data direct to/from the HMI I/O server.

Consultant will install a new ControlLogix PLC rack with two EN2T modules, CLX, and a network switch for the RIO_LAN subnet provided by the contractor.

Consultant will prepare a new CLX program ready for ControlLogix I/O after the conversion, with the possibility of using an additional DHRIO to communicate with the PLC5 I/O.

Once Contractor completes HSP PLC5 I/O to ControlLogix I/O upgrade, Consultant will work with the contractor and complete programming check and migration with new I/O.

After I/O and control have been migrated above, Consultant will remove the DL4500 DH+ to Ethernet converter used for VTScada.

Consultant will remove the existing PLC5 hardware and finalize all communications to VTScada, test and verify functionality.

Contractor will upgrade remaining 3 PLC5 RIO Panels to use ControlLogix RIO. Consultant will modify the PLC program for the new CLX I/O, test and verify functionality. CSD will modify the VTScada database for any I/O tags that may have changed and verify functionality.

Consultant will remove DHRIO modules from the configuration and perform PLC panel completion.

Contractor will perform a radio survey to provide ethernet radio connectivity from North Beach to the WTP.

Contractor will upgrade RIO racks and work with Consultant to upgrade North Beach to CompactLogix PLC.

Consultant will install a new L72 PLC in the main PLC panel at a later version of Studio 5000 to be determined.

The existing warm back up rack will be either removed or have a second L72 CPU installed.

Consultant will provide any further programming on various systems, startup all systems together and finalize the entire system.

Consultant will replace Rotork Pakscan communication network. Contractor will install option cards in all of the Rotork actuators which will allow the valves to be controlled via a 4-20ma signal. Contractor and Consultant will add any additional analog I/O, if needed, and CSD will modify the PLC program to use analog I/O for control. Consultant will make any updates needed in the VTScada database. Consultant will test and verify functionality.

Consultant will revamp the Lime Slurry panel PLC from the existing MicroLogix to ControlLogix remote I/O and incorporate into the main PLC program. Consultant will test and verify operation.

SCHEDULE

In general, the following schedule is anticipated and consultant will work as expeditiously as possible to meet it:

- Task 1: 8 - 10 months after Contractor awarded project
- Task 2: To occur concurrent to Task 1

ADDITIONAL SERVICES

The following services are not included in the Scope of Services for this project, but may be required depending on circumstances that may arise during the execution of this project. Additional services include, but may not be limited to the following:

- Radio survey
- Purchase/installation of PLC hardware, panels, electrical components, etc.

ITEMS FURNISHED BY OWNER

The following items will be furnished by the Owner and are necessary for completion of the tasks described herein.

- Access to WTP site
- Panel record drawings
- Coordination during programming and integration

FEE SCHEDULE

We will provide these services in accordance with our Continuing Consulting Engineering Services Agreement for Professional Services dated April 17th, 2018, by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida ("COUNTY") and Kimley-Horn and Associates, Inc., ("Consultant").

The Consultant will provide professional services for a lump sum fee as follows:

Task No.	Task	Task Fee
Task 1	Construction Phase Services	\$ 18,651
Task 2	Programming and Integration	\$ 236,568
	TOTAL LUMP SUM FEE	\$ 255,219

ESTIMATE FOR ENGINEERING SERVICES

PROJECT: Hobart ROWTP SCADA System Improvements	SHEET 1 OF 1
CLIENT: Indian River County Utilities	FILE NO.
ESTIMATOR: NB	DATE: 3/2/2021

DESCRIPTION:	DIRECT LABOR (MAN-HOURS)								Dir Exp	LINE TOTAL
	PRINC	SEN PROF	REG PROF	DES/P2	CLK P1	EXP SUB	EXP SUB			
Hobart SCADA System Improvements										
NO.	TASK									
1	CONSTRUCTION PHASE SERVICES									
Kickoff Meeting	4		8						\$98	\$2,239
Shop Drawings (10)	2		6						\$63	\$1,433
RFIs (4)	2		4						\$49	\$1,119
Pay App Review (8)	1		8						\$66	\$1,501
Site Visits (3)	4		12						\$126	\$2,866
Closeout Documentation	1		4						\$38	\$874
C&W	2		4					\$7,500	\$49	\$8,619
										\$18,651
2	PROGRAMMING & INTEGRATION									
CSD	8		24					\$224,100	\$252	\$229,832
Coordination	8		24		10				\$296	\$6,736
										\$236,568
	TOTAL HOURS	32	0	94	0	10	0	231600	\$1,039	\$255,219
	LABOR (\$/HOUR)	235	225	150	105	96	25		\$0	\$0
	SUBTOTAL	7520	0	14100	0	960	0	231600	\$254,180	\$255,219

C & W engineering, Inc

Electrical Consultants

6903 Vista Parkway North, #10
West Palm Beach, FL 33411
(561) 642-5333

February 18, 2021

Nick Black, P.E.
Kimley Horn & Associates
1920 Wekiva Way
Suite 200
West Palm Beach, FL 33411

Subject: IRC Hobart WTP Electrical PLC-SCADA Improvements Construction
Services Proposal
C&W Ref. 66437.CS

Dear Nick:

I am pleased to submit this proposal for your consideration to provide Electrical Engineering Services during the construction phase of the PLC improvements to the Hobart WTP. Below is a summary of our tasks during construction.

1. Attend a Pre-construction meeting and respond to questions.
2. Review shop drawings.
3. Respond to Contractor RFIs.
4. Provide a field progress observation to the site during different phases of construction, provide a report for each visit. Total of 3.
5. Attend the startup of RIO 5 PLC and Plant site Pump Station Panel when these get upgraded with the PLC Kit.
6. Attend the startup of one MOV at the south process area (Trains 1 through 4) and one MOV at the north process area (Trains 5 through 8)
7. Attend 3 VIRTUAL monthly meetings during construction.
8. Review O&M manuals.
9. Provide as-built drawings based on Contractor provided redlines.

CONSTRUCTION SERVICES

Coordination
Kimley Horn and Associates
Owner
CSD personnel
Contractor

Attend 3 VIRTUAL Progress Monthly Meetings
Progress field inspections during construction total of 3

Review Electrical Equipment shop drawings
Review PLC and Control Panel instrumentation shop drawings
Prepare response to Contractor RFI requests
Attend a startup and testing field visit and provide a punch list to the inspected PLC and upgrade work, including the MOV valves changed out to hard wired controls.
Provide review of O&M manuals and confirm spare parts.
Provide as-built drawings based on redlines from the Contractor.

ELECTRICAL CONSTRUCTION SERVICES PHASE FEE: \$7,500 lump sum

I trust the scope and fee are in agreement with your needs and expectations.
Please contact me with questions or comments. Thanks for this opportunity.

Very truly yours,

C&W Engineering, Inc.



Michael A. Guida, PE

JLR/nl

TASK	SCOPE DESCRIPTION	LABOR ESTIMATE	
		CSD Manhour Estimate	CSD PROGRAMMING
1	CSD will review and completely vet the current HMI migration to VTScada. CSD will modify the main PLC panel to remove the ControlNet modules, one IA16 module and one ENBT, relocate the two EN2T modules in the CPU rack and modify all programming to correct the current configuration to ethernet communications from the CPU rack to the local RIO rack. CSD will migrate North Beach communications from North Pump Station PLC to direct via Red Lion converter at each end to provide data direct to/from the HMI I/O server.	160	\$ 21,600.00
2	CSD will install a new ControlLogix PLC rack with two EN2T modules, CLX, and a network switch for the RIO_LAN subnet provided by the contractor. Have a new CLX program ready for ControlLogix I/O after the conversion, with the possibility of using an additional DHRIO to communicate with the PLC5 I/O.	240	\$ 32,400.00
3	Contractor to upgrade HSP PLC5 I/O to ControlLogix I/O and CSD will work with the contractor and complete programming check and migration with new I/O.	240	\$ 32,400.00
4	After I/O and control have been migrated above, CSD removes the DL4500 DH+ to Ethernet converter used for VTScada. CSD will remove the existing PLC5 hardware and finalize all communications to VTScada, test and verify functionality.	80	\$ 10,800.00
5	Contractor will upgrade remaining 3 PLC5 RIO Panels to use ControlLogix RIO. CSD will modify the PLC program for the new CLX I/O, test and verify functionality. CSD will modify the VTScada database for any I/O tags that may have changed and verify functionality.	320	\$ 43,200.00
6	PLC Panel Completion. CSD will remove DHRIO modules from the configuration.	80	\$ 10,800.00
7	Contractor will perform a radio survey to provide ethernet radio connectivity from North Beach to the WTP. Contractor will upgrade RIO racks and work with CSD to upgrade North Beach to CompactLogix PLC.	120	\$ 16,200.00
8	CSD will install a new L72 PLC in the main PLC panel at a later version of Studio 5000 to be determined. The existing warm back up rack will be either removed or have a second L72 CPU installed. CSD will provide any further programming on various systems, startup all systems together and finalize the entire system.	160	\$ 21,600.00
9	Replace Rotork Pakscan communication network. Contractor will install option cards in all of the Rotork actuators which will allow the valves to be controlled via a 4-20ma signal. Contractor and CSD will add any additional analog I/O, if needed, and CSD will modify the PLC program to use analog I/O for control. CSD will make any updates needed in the VTScada database. Test and verify functionality.	160	\$ 21,600.00
10	Revamp the Lime Slurry panel PLC from the existing MicroLogix to ControlLogix remote I/O and incorporate into the main PLC program. Test and verify operation.	100	\$ 13,500.00
TOTAL CSD PROGRAMMING COSTS			\$ 224,100.00

\$135.00