

Proposal to Provide
Engineering Services for
Water Treatment Plant HPP9

Services to be provided by: Kimley-Horn and Associates, Inc. (Kimley-Horn)

Services provided to: Village of Wellington (Village)

Proposal Date: October 31, 2022

This Work Authorization authorizes Kimley-Horn and Associates, Inc. to perform work set forth herein and is issued pursuant to the Agreement for Consulting Services, between Wellington (“Client” or “Village”) and Kimley-Horn and Associates, Inc. (“Consultant” or “Kimley-Horn”). All terms and conditions of said Agreement are hereby incorporated and made part of this Work Authorization.

BACKGROUND

The Village of Wellington’s Water Treatment Plant (WTP) employs nanofiltration (NF), or membrane softening, to treat source water from the surficial aquifer. The WTP has two separate membrane facilities, Membrane Plant 1 (M1) and Membrane Plant 2 (M2). M1 is equipped with four (4) NF trains, each rated at 1 MGD and 85% recovery and dedicated feedwater/high pressure pumps (HPP) to elevate pressure of pre-treated raw water to each of the respective NF trains. M2 has two (2) trains, each rated for 1.8 MGD and 85% recovery and dedicated HPPs. There are currently ongoing construction projects to construct NF Train 8 and HPP8 within M2.

To enhance redundancy, provide full standby capacity of all NF trains, and remain compliant with Florida Administrative Code (FAC) regulations, the Village of Wellington desires to construct a ninth high pressure pump, HPP9. HPP9 is to be constructed within an existing concrete caisson configured parallel to HPP8. The intent of HPP9 is to provide a hard-piped, inline spare that can pump pre-treated raw water to any one of the three (3) trains in M2. Construction of HPP9 will satisfy the Ten State’s Standard, which has been adopted by the FAC, for meeting Max Daily Flow (MDF) capacity with largest unit out of service for maintenance.

The following scope of services is provided to prepare construction documents, permit, and provide procurement phase services associated with HPP9.

SCOPE

Task 1 – Design Improvements & Permitting

Consultant will utilize the services of Hillers Electrical Engineering to provide professional services related to electrical engineering for the proposed HPP9 and associated improvements.

Consultant will design improvements to HPP suction and discharge piping to accommodate the proposed HPP9. Consultant will design proposed Cartridge Filter Vessel (CFV) for HPP9. Consultant will design modifications to the spare feedwater header to allow HPP9 to serve as the feed pump to each of the three (3) nanofiltration trains. Consultant will prepare construction drawings to reflect the necessary improvements.

Consultant will prepare technical specifications for the proposed improvements. Consultant will include modifications to the existing M2 HPPs to de-stage, or remove one pump bowl & impeller, to enhance efficiency and increase the normal operating speed.

Consultant will design improvements to existing NF trains 6, 7 and 8 to include electrically modulated concentrate control valve. Consultant will size the proposed control valves to account for current and future operating conditions. Consultant will include this work as an additive alternate to the CMAR contract.

Consultant will prepare a control logic description to modify the current operation of the HPP motor operated valves. The current “pulsing” technique will be eliminated in lieu of utilizing each pump’s respective Variable Frequency Drive (VFD) to control feed pressures. Consultant will prepare control logic description for the NF system.

Consultant will prepare an Opinion of Probable Construction Costs (OPCC) for the proposed improvements.

Consultant will prepare design deliverables at the 75% (preliminary) and 100% design stages. Consultant will submit plans, specifications, control logic description and OPCC associated with each design interval. Consultant will attend one (1) review meeting for the initial set of deliverables. Consultant will incorporate Village review comments in the final deliverables.

Consultant will prepare and submit an Application for a Specific Permit to Construct PWS Components and submit to the Palm Beach County Health Department (PBCHD) for construction of HPP9. Consultant will submit \$1,000 permit application review fee to PBCHD. Consultant will respond to Requests for Additional Information (RAIs) from the PBCHD.

Task 2 –CMAR Procurement Phase Services

Consultant will respond to a reasonable number of questions from Village staff and the Village’s Construction Manager at Risk (CMAR) to assist with the Guaranteed Maximum Price (GMP) process.

Consultant will attend one (1) pre-work meeting with Village staff and CMAR.

Consultant will review the Village’s CMAR Guaranteed Maximum Price (GMP) for completeness. Consultant will prepare GMP review letter for Village record.

ADDITIONAL SERVICES

Any services not specifically provided for in the above scope, as well as any changes in the scope requested by the Village, will be considered additional services to this Work Authorization and will be performed based on subsequent Work Authorizations approved prior to performance of the additional services.

SCHEDULE

The Kimley-Horn fee structure assumes timely completion within the terms of the construction contract. Failure of the Client's contractor(s) to complete the projects within the original contract term may result in an adjustment to the Kimley-Horn's compensation, subject to mutual acceptance of the Client and the Kimley-Horn.

COMPENSATION

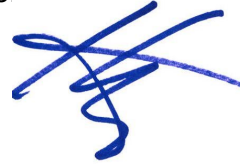
Kimley-Horn will perform the services described in the Scope of Services on a lump sum basis for \$76,416.

Accepted by:

Village of Wellington

Date: _____

Kimley-Horn and Associates, Inc.



Michael F. Schwartz, P.E.

Sr. Vice President

Date: 10/31/2022

ESTIMATE FOR ENGINEERING SERVICES								
PROJECT:	VOW WTP HPP9					SHEET 1 of 1		
CLIENT:	Wellington					FILE NO.		
ESTIMATOR:	Nick Black					DATE: 03/14/22		
DESCRIPTION: See Scope of Services	DIRECT LABOR (MAN-HOURS)							
	Principal	PM (PE)	Engineer (EI)	Admin	Sr. Inspector	SUB	EXP	LINE
	JP/MM	NB	AG	TC	JF			TOTAL
Task 1 - Design								
HPP9 Design - pump selection	4.0	12.0	24.0					\$5,748
Modifications to Spare feed header	4.0	6.0	12.0					\$3,360
Tech Specs	4.0	12.0	20.0					\$5,292
Concentrate control valves	2.0	8.0	20.0					\$4,126
Control Logic	8.0	20.0	30.0					\$8,764
Pump Bowl De-stage Specs	1.0	3.0	6.0					\$1,437
OPCC	4.0	10.0	14.0					\$4,268
75% Deliverables	4.0	20.0	40.0	4.0				\$9,264
75% Review Meeting	1.0	3.0	3.0					\$1,095
Finalize Documents	2.0	8.0	16.0	4.0				\$4,002
PBCHD Permitting	1.0	3.0	6.0				\$1,000	\$2,437
HEE Services	1.0	4.0	4.0	2.0		20070.0		\$21,615
								\$0
Task 2 - Procurement/CMAR Pricing								
CMAR coordination	2.0	6.0	12.0					\$2,874
Pre-Work Meeting	1.0	3.0	3.0					\$1,095
GMP Review & Letter	1.0	2.0	4.0					\$1,039
								\$0
	40	120	214	10	0	20070	1000	
	\$243	\$170	\$114	\$83	\$124	1.00	1.00	
	\$9,720	\$20,400	\$24,396	\$830	\$0	\$20,070	\$1,000	\$76,416



HILLERS ELECTRICAL ENGINEERING, INC.

February 23, 2022

Mr. Nick Black, PE
Kimley-Horn and Associates, Inc.
1920 Wekiva Way, Suite 200
West Palm Beach, FL 33411

Subject: Village of Wellington Utilities– Water Treatment Plant High Pressure Pump 9 Design and Procurement Phase Services

Dear Nick:

Hilliers Electrical Engineering, Inc. (HEE) is pleased to provide Kimley-Horn and Associates, Inc. (KHA) this proposal for electrical, instrumentation and control engineering services for the above referenced project. The Village of Wellington Utilities (Village) desires to construct a ninth high pressure pump, HPP9, and associated cartridge filter and valves/instruments to be constructed adjacent to, and configured parallel to, existing high-pressure pump HPP8. The intent of HPP9 is to provide a hard-piped, inline spare that can pump pre-treated raw water to any one of the trains in Membrane Building 2. In addition, the project will add/reconfigure motor operated valves associated with the high-pressure pumping system to facilitate the assignment of HPP9 to any of the membrane treatment trains in Membrane Building 2. HEE will assist KHA with the integration of HPP9 into the existing power distribution and PLC based plant control system; HEE will also assist KHA with the reconfiguration and integration of the high-pressure pump discharge valving arrangement as it pertains to electrical, instrumentation and control. It is assumed that there is available power, connectivity, and physical space for the associate variable frequency drive for HPP9; it is also assumed that there is available power and signal connectivity, as well as physical space, in the existing valve control panel.

This proposal is for design, permitting, and Construction Manager At-Risk (CMAR) procurement assistance only. Construction phase services are not included as part of this scope of work and will be proposed under a separate work order.

Our scope of work consists of the following:

Task 1 – Design Improvements & Permitting

- A. HEE will assist KHA with the electrical, instrumentation and control design improvements for new HPP9, including associated Cartridge Filter Vessel, suction and discharge valves, instruments, and controls. HEE will assist KHA in preparing construction drawings and specifications to reflect the necessary improvements.
- B. HEE will assist KHA in modifying the plant control system programming control logic to change the current operation of the HPP motor operated valves from the current “pulsing” technique to open/close operation thereby utilizing each high-pressure pump’s associated Variable Frequency Drive (VFD) to control feed

pressures.

- C. HEE will assist KHA with the electrical, instrumentation and control design improvements to existing nanofiltration (NF) Membrane Treatment Trains 6, 7 and 8 related to adding electrically modulated concentrate control valves. This work will be included as an additive alternate to the contract.
- D. Design deliverables will be at the seventy-five percent (75%) (preliminary) and one-hundred percent (100%) (final) design stages; HEE will submit to KHA plans, specifications, written control strategies and opinion of probable construction cost (OPCC) associated with each design interval. HEE will attend one (1) review meeting with KHA and the Village for the seventy-five percent (75%) design deliverable to discuss and receive comments. HEE will incorporate Village review comments in the one-hundred percent (100%) (final) design deliverable. HEE anticipates no design review meeting will be held with KHA and Village after the final design submittal.
- E. HEE anticipates that KHA will prepare and submit an Application For A Specific Permit To Construct PWS Components and submit to the Palm Beach County Health Department (PBCHD) for construction of HPP9. HEE anticipates KHA will respond to any Requests for Additional Information (RAIs) from the PBCHD. HEE anticipates no involvement with this task and no level of effort is included in this proposal for the work of this task.

Task 2 – CMAR Procurement Phase Services

- A. HEE will assist KHA in respond to a reasonable number of questions from Village staff and the Village’s Construction Manager at Risk (CMAR) related to the electrical, instrumentation and control design to assist CMAR with the Guaranteed Maximum Price (GMP) process.
- B. HEE will attend one (1) pre-work meeting with KHA, Village staff and CMAR.
- C. HEE will assist KHA with review the Village’s CMAR Guaranteed Maximum Price (GMP) for completeness as related to electrical, instrumentation and control systems. HEE assumes KHA will prepare a GMP review letter for Village records.

Our proposed lump-sum engineering services fees are:

Task 1:	\$14,874.00
Task 1 Alternate:	\$3,048.00
Task 2:	\$2,148.00
Total:	\$20,070.00

Assumptions:

- 1. HEE anticipates the following design drawings:
 - a. Electrical Legend and Symbols

Mr. Nick Black, PE

Subject: Village of Wellington Utilities–Water Treatment Plant High Pressure Pump 9 Design and Procurement Phase Services

- b. Membrane Building 2 Electrical Plan
 - c. Membrane Building 2 Electrical Room Plan
 - d. One Line Diagram
 - e. Schematic Diagram(s)
 - f. Riser Diagrams/Schedules
 - g. Valve Control Panel Modification Details
 - h. Electrical Details
 - i. Instrumentation Legend and Symbols
 - j. P&ID – High Pressure Feed Pumps
 - k. P&ID – Membrane Treatment Trains (Typical)
 - l. Instrumentation Details
2. KHA will provide all background (base) AutoCAD files to HEE for Membrane Building 2 modifications.
 3. Project does not include short circuit, device coordination or Arc Flash Study; this will be specified to be provided by the installing contractor.
 4. No modifications to existing Membrane Building 1 or other facilities not located withing Membrane Building 2 are anticipated or included in this proposal.

HEE wishes to thank Kimley-Horn and Associates, Inc. for the opportunity to assist with this project. Please do not hesitate to call me if you have any questions regarding this proposal or any other related matter.

Sincerely,



Mark E. Luther, PE

MEL/mel

Attachment

Village of Wellington Utilities Water Treatment Plant High Pressure Pump 9 Design and Procurement Phase Services
 Kimley-Horn & Associates
 HILLERS ELECTRICAL ENGINEERING, INC.
 Scope Fee Breakdown -Design Services
 Date: 2/23/22

Rate	\$225.00	\$192.00	\$153.00	\$147.00	\$129.00	\$90.00	\$81.00	\$138.00	\$78.00				
PHASE OF WORK	Principal Hours	Chief Engineer Hours	Project Manager Hours	Professional Engineer Hours	Lead Engineer Hours	Designer Hours	CADD/ Technician Hours	Construction Coordinator Hours	Secretarial Hours	Total Task Hours	Expenses Cost	SUBTOTAL Cost	TASK TOTAL Cost
Task 1 Design Improvements and Permitting													\$14,874.00
HPP 9, Cartridge Filter, Suction and Discharge Valves Design		15		50		30				95		\$12,930.00	
Plant Control System Control Strategy Modifications		4		8								\$1,944.00	
Task 1 Design Improvements and Permitting-Alternate													\$3,048.00
Membrane Treatment Train Concentrate Valve Design		2		12		10						\$3,048.00	
Task 2 CMAR Procurement Phase Services													\$2,148.00
Respond to CMAR Questions				6						6		\$882.00	
Attend Pre-Work Meeting				2						2		\$294.00	
GMP Review - Electrical, Instrumentation and Control		2		4						6		\$972.00	
Lump Sum Totals		23		82		40				109		\$20,070.00	\$20,070.00
<i>Cost by Labor Rate</i>		\$4,416.00		\$12,054.00		\$3,600.00							