

Town of Raymond, New Hampshire

Request for Proposals
for
**2024 Water Treatment Plant Master Control Panel and Computer Replacement
with Sun Hill Booster Station Upgrade**

INTRODUCTION

The Town of Raymond hereinafter, "Town" is a municipal corporation in the State of New Hampshire, in the County of Rockingham, with an official place of business of Town Office, 4 Epping Street, Raymond, NH 03077.

It is the intent of the Town to enter into an agreement, through its Director of Public Works, with the selected contractor for the replacement of the master control panel at the water treatment plant located at 5 Cider Ferry Rd Raymond NH 03077. The Town is also looking to replace the treatment plant office computer and upgrade the Sun Hill Booster Station located on Sun Hill Rd. in Raymond NH 03077 so it can be added to the current SCADA System.

Bids will be received by the Town of Raymond, New Hampshire, at the Public Works Office until **3:00 p.m. Thursday, August 8, 2024**, at which time bids will be opened publicly at the DPW office at 4 Epping Street in Raymond, NH.

Each bid must be submitted in a sealed envelope addressed to the Public Works Director, Old Fire House, 4 Epping Street, Raymond, New Hampshire 03077. Each sealed envelope containing "Bid" must be plainly marked on the outside as "**Bid for Treatment Plant/Booster Station Upgrades**".

All Bids must be made on the attached Bid Form

The Director of Public Works reserves the right to waive any informalities or minor defects in the Bid and/or reject any and/or all Bids, for whatever reason is determined to be in the best interest of the Town of Raymond.

BACKGROUND

Currently the Water Plant has two control panels.

The Filter Control Panel (FCP) backwashes for the four filter sections of the filter. It also has the phone communications to Well 4, the message blocks to Well 4, and the data coming from Well 4 for the SCADA. The phone communication is a dialup phone line using a serial connection and is connected all the time.

The Main Control Panel (MCP) controls the Well Pumps, Chemical Pumps, Finished Pumps, as well as the phone communication which is a dialup phone line using a serial connection and is polling between the two water towers.

This is a request for a Quote to upgrade the SCADA computer, replace the MCP completely, and install a new communication panel. The new Communications Panel will communicate with Well 4 continuously, and the two water towers in a polling sequence using existing phone lines. The Sun Hill Booster Station will be added to polling. All the remote stations are Allen Bradley MicroLogix PLCs.

The information from the remote sites will be interfaced with the new MCP for proper operation of current controls and monitoring.

Within the next 5 years the Town intends to update and expand the water treatment plant with variable frequency drives, additional filters and process control equipment. The new panel must be designed so that there is room for these upgrades in the future.

SCOPE OF WORK

- a. The contractor will coordinate with the Water Foreman to schedule a time frame to start the project.
- b. The contractor will replace the master control panel with materials from the products list in a manner that will allow the treatment plant to always stay operational throughout the project. If the treatment plant needs to be shut down at any time, the contractor will check with the Water Foreman to make sure it is safe to do so. The master control panel will be designed so that all wiring, surge equipment or loose equipment inside the panel are neatly organized and clearly marked. The electrical conduit outside the panel will be constructed so that any condensation will drain to the outside of the panel enclosure. The contractor will add the Sun Hill Booster Station and its functions to the overview screen on the new computer. The contractor will test the panel when completed to make sure that all functions are working correctly. The contractor will train the water staff how to use the master control panel when the project is complete.
- c. The contractor will replace the treatment plant office computer, printer and auto dialer with battery backup from the products list and transfer all functions from the old computer to the new computer including upgrades. The contractor will test that all functions and alarms are working correctly. The contractor will ensure that the computer is updated with cyber security software to protect the treatment plant from possible cyber-attacks. The contractor will train the water staff how to navigate and operate the new computer.
- d. The contractor will make sure that surge protection is in place for all scopes of the project.
- e. The contractor will upgrade the Sun Hill Booster Station with the equipment needed from the products list to allow the building to be monitored and operated through the current SCADA system at the water treatment plant. Surge protection will also be installed on all the equipment in the building. The contractor will train the water staff in how the new equipment works.

PRODUCTS

MCP Enclosure:

1. The Current enclosure is Cabon Steel 48 X 36 X12 part number Hoffman enclosure CSD483612. This Enclosure is too small for things that have been added over the years, so a lot of things are on the bottom of the panel (Ethernet switches, modems etc.). We will need a bigger enclosure to ensure everything is mounted and secure. **This panel will need to have room for future expansion of the treatment plant per the 2024 capital improvement plans from Underwood Engineers.**
2. The Current enclosure has conduits coming in the top and bottom of the enclosure. The new enclosure will only have conduit coming in on the sides and in the bottom as condensation collects in the attic of the building and starts to drip in the control enclosure.

Terminals

1. All terminals will be labeled with terminal numbers. Terminals will be separated Digital inputs, Digital outputs, Analog Inputs, and Analog outputs.
2. All analog signals exiting the plant will have Citels or equivalent power surge in place as analogs at the plant seem to get struck by lightning every spring.

PLC:

1. The Current PLC setup is as follows 1746 – A13 13 slot chassis, 1746-P4 power supply, 1747-L551, SLC 5/05 Processor, 3 1746-NI8, 3 1746-NO4I, 3 1746-IA16, 2 1746-OW16, 1492-ER35 end anchor, and 1492- EB3.
2. The new PLC should be an Allen Bradley CompactLogix 5370 L36ERM to bring it up to today's standards.
3. The Following cards should be brought to CompactLogix equivalent. They should be as follows 3 1746-NI8 (24 points) should be 2 1769-IF16 (32 points) 8 spares, 3 1746-No4I (12 points) should be 3 1769-OF8 (24 points) 12 spares , 3 1746-IA16 (48 points) should be 3 1769-IQ16 (48 points) this would give us 4 spares , 2 1746-OW16 (32 points) should be 1769-ow16 (32 points) with 8 spare.
4. All PLC inputs should be wired to terminal blocks. All PLC outputs should be wired to Isolation relays to provide dry contacts for outside power. All wires to these dry contacts will be wired with yellow wire to show possibility of power from outside equipment.

Panel view

1. Panel view will be a minimum of 12 inches. We recommend a C-more EA9T12CL. The panel view needs to be able to run the plant if the plant goes down. The size of the Panel View needs to be this size for ease to allow the operator to see what their plant is doing without going through too many screens.

Auto dialer

1. The existing auto dialer is A 4 channel Raco Gateway auto dialer. The following are being monitored by the auto dialer: Channel 1 Scada computer failure, 2 eyewash, fire, and security, 3 water storage tank low level alarm, and 4 process alarm.
2. The auto dialer is used as a backup, mainly if the Scada computer fails.

UPS

1. Should have enough power for 10 minutes to allow for the generator to start.
2. The UPS will be wired to a UPS failure relay that will send an alarm and bypass the UPS for control power.

Scada Computer

1. The Scada desktop computer shall have at least Windows 11 PRO, 32 GB of ram, and 1 TB SSD.
2. Scada software will be IFIX 2023 or Higher, XLreporter latest addition, and Top view with VOIP modem Latest or equivalent. The alarm call out interface needs to be operator friendly to allow operator to enable/disable alarms from calling out with ease.
3. A new printer will be provided to allow the printout of reports and day-to-day things.
4. Operators remote dial in via Log me in. This would have to be added to the new computer.
5. Cyber security is very important with this upgrade and the addition of a Sonic wall for VPN and firewall.
6. Firewall is very important to block unauthorized access to the system.

Communications Panel

1. Sized to all equipment needed.
2. Both Modems will have separate shelves and be labeled Well 4 and the phone number and polling and the phone number.
3. PLC will be a MicroLogix 1400
4. UPS
 - A. Should have enough power for 10 minutes to allow for the generator to start.
 - B. The UPS will be wired to a UPS failure relay that will send an alarm and bypass the UPS for control power.

Sun Hill Booster Station

1. The Sun Hill Booster currently has a MicroLogix 1400 that takes all the information at the station and displays it on the Panel view.
2. We would like the Sun Hill Booster to communicate the information back to the water plant VIA Cellular Communications. A separate enclosure for cellular communication to keep controls and communication separate.
3. Sun Hill Scada screen should include the following readings.
 1. DI - Pump runs.
 2. DI – High pressure alarm
 - 3 DI – Low Pressure alarm
 - 4 AI – System PSI reading
 - 5 AI – Building Temperature
4. All analog points from the station must be added to historical, captured and trended. All setpoints need to be settable from station and on Scada screen/or screens.
5. Current auto dialer will serve as a backup in case Cellular communication fail.

EXECUTION

- a. The contractor will provide proof of insurance and all certifications that pertain to the scope of work being performed.
- b. The contractor will be responsible for contacting the Town building inspector for all permits needed to do the work.
- c. The contractor will contact the Water Foreman or the Public Works Director for startup scheduling if there is a change order needed.
- d. The contractor will be allowed to review the products list if other recommendations are suggested that may better the operation.

- e. The contractor will keep the work area clean throughout the project so that the water staff can continue to perform regular and/or emergency duties.
- f. The contractor will test all new equipment, alarm systems etc. at the end of the scope of work and train the staff on how to navigate and operate the new equipment.

INSPECTION

- a. The contractor will be responsible for confirming that all new installations on the scope of work are working correctly and testing all the equipment, alarms, surge protection etc. before final payment is made.
- b. The contractor will schedule with the Water Foreman to train the water staff on how to operate, adjust settings, and understand the new equipment in the Water Treatment plant and Sun Hill Booster Station.
- c. The contractor will check that all equipment and wiring is organized and clearly marked and secured.
- d. The contractor will clean up any debris from the scope of work performed.
- e. The contractor, with the Water Foreman, will do a final walk through of the treatment plant and the Sun Hill Booster Station to check that the scope of work is satisfactory.

RESPONSE TO RFP

Interested contractors shall provide the Town with a written proposal outlining experience, references, materials to be used, cost, time frame, methods, services to be provided by the contractor and services anticipated to be required from the Town. Include a list of your key personnel to be used for this contract and their level of expertise.

All material submitted in response to this RFP shall become the property of the Town and shall not be returned.

BIDDER QUALIFICATIONS

The Director of Public Works shall make such investigations as deemed necessary to determine the ability of the Bidder to perform the work. No award may be made to any Bidder who cannot meet the following requirements.

- a. Shall not have defaulted on any previous contracts within the prior three years
- b. Shall maintain a permanent place of business
- c. Shall have adequate personnel and equipment to perform the work expeditiously
- d. Shall have suitable financial status to meet obligations of the work
- e. Shall not have failed to complete previous contracts on time
- f. Shall have completed a minimum of three similar projects

The Director of Public Works reserves the right to reject any Bid if the foregoing requirements are not satisfied or if any evidence fails to satisfy the Director that such Bidder is properly qualified.

CONSIDERATIONS AND LIMITATION

The major consideration for the Town is prompt and efficient work and the most economical manner, at the most reasonable price.

This solicitation does not commit the Town to award a contract, pay any costs incurred in preparing a proposal, or to procure or contract for any services or supplies.

The Town reserves the right to reject or accept any and/or all the proposals received for any reason which the Public Works Director determines is in the best interest of the Town. **Selection shall not be made purely on price alone.**

Further, the Town reserves the right to negotiate with any and/or all qualified sources, or to cancel in part, or in its entirety, the solicitation for whatever reason is determined by the Director of Public Works to be in the best interests of the Town. The Town reserves the right to eliminate portions of the work.

COMMENCEMENT

Anticipated work would begin during the summer/fall months of 2024. All work to be completed by November 29, 2024. Work hours will be from 7:30 am to 4:00 pm Monday through Friday. No holidays or weekends allowed. Work hour exceptions will be made if there is an issue that justifies the changes.

MEASUREMENT AND PAYMENT

No payment will be made for the work or portions of the work that do not meet the requirements of this RFP. Payment will be made in two installments, one at the halfway point of the project and one at the end of the project after the contractor has trained the staff and performed a final walk through with the Foreman to inspect the scope of work performed.

INDEMNIFICATION AND INSURANCE

The Contractor shall defend, indemnify and hold harmless the Lessee, its officers and employees, from and against any and all losses suffered by the Lessee, its officers and employees and any and all claims, liabilities or penalties asserted against the Lessee, its officers, and employees, by or on behalf of any person, on account of, based on, resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor.

The Contractor shall obtain and maintain in force during the term of the contract, Commercial General Liability and Comprehensive Liability; Excess Liability and Property Liability insurance including contractual coverage, in amounts noted below:

Minimum Limits of Liability:

- \$1,000,000 each occurrence*
- \$1,000,000 personal & adv. injury*
- \$2,000,000 general aggregate*
- \$2,000,000 products / completed operations aggregate.*
- \$5,000 medical expenses (any one person)*

Prior to the beginning of the contract the Contractor shall provide a Certificate of Insurance demonstrating the required insurance coverage. The policy shall be the standard form employed in the State of New Hampshire, issued by underwriters acceptable to the Town of Raymond and authorized to do business in the State of New Hampshire. Each policy shall contain a clause prohibiting cancellation or modification of the policy earlier than ten (10) days after written notice thereof has been received by the Town of Raymond.

All liability policies shall include the Town of Raymond, New Hampshire as named as additional insured.

- a. The Contractor's insurance shall be primary in the event of loss.
- b. The additional insured endorsement must include language specifically stating that the entity is to be covered for all activities performed by, or on behalf of, the Contractor, including the Town of Raymond's general supervision of the Contractor.
- c. The Town of Raymond, New Hampshire shall be listed as a Certificate holder and additional insured.
- d. Insurance Certificates must be provided prior to commencement of work.

To the extent that this is applicable, the Contractor hereby agrees to purchase and maintain as required by the law the appropriate workmen's compensation insurance to cover all claims of employees of said Contractor; should the

Contractor fail to purchase and maintain such insurance, and should the Town of Raymond be found liable to employees of the Contractor, the Town of Raymond may recover the amount of any compensation paid to employees of the Contractor and any expenses relating thereto.

Workers' Compensation coverage limit shall be provided when required by statute:

Limits of Liability: Coverage A - Statutory

Coverage B: Each accident \$2,000,000

Disease: Each employee \$2,000,000

Disease: Policy Limit \$2,000,000

PERMITS

It shall be the responsibility of the contractor to identify and secure all federal, state, and local permits which may be required and necessary to perform all aspects of the work to be performed.

PERSONNEL

The selected contractor shall provide qualified licensed and safety trained personnel through the duration of the contract to perform all tasks proposed.

HOLIDAYS

The contractor shall not be allowed to work on, on any state, federal holidays.

BONDS

No bid or performance bonding is required.

END OF SECTION

Bid Sheet

2024 Water Treatment Plant Master Control Panel and Computer Replacement with Sun Hill Booster Station Upgrade

Product List

1	MCP Enclosure	TOTAL	_____
2	Terminals	TOTAL	_____
3	PLC	TOTAL	_____
5	Panel View	TOTAL	_____
6	Auto Dialer	TOTAL	_____
7	UPS	TOTAL	_____
8	Scada Computer	TOTAL	_____
11	Communications Panel	TOTAL	_____
12	Sun Hill Booster Station	TOTAL	_____
Other Items			
13		TOTAL	_____
14		TOTAL	_____
15		TOTAL	_____

Grand Total

SUM OF COSTS FOR ALL ITEMS LISTED ABOVE

Executed by a *DULY AUTHORIZED* member of the company :

Name *Title* *Date*

Name *Title* *Date*

Business Address: _____

Business Phone: _____

E-mail address: _____

E-mail address: _____