



**South Davis Sewer District**

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## **South Davis Sewer District (SDSD) North Plant SCADA and Integration Request for Statements of Qualification (RFSQ)**

Posting Date: July 10, 2024

Deadline for Questions: July 17, 2024 at 2:00 PM

All questions must be submitted through the U3P during the question and answer period to:

Matthew Myers: [mmyers@sdsd.us](mailto:mmyers@sdsd.us) by the due date and time above.

Qualification Due Date: July 23, 2024 at 2:00 PM

Qualifications must be submitted to:

Matthew Myers: [mmyers@sdsd.us](mailto:mmyers@sdsd.us) by the due date and time above.

Proposers are required to confirm receipt of any submitted Questions or Qualifications proposals.



## I. Introduction

South Davis Sewer District (SDSD) Invites qualified consultants to submit Statements of Qualifications for professional services to provide SCADA, Controls and Integration services for the North Plant Upgrade Project. The North Plant Upgrade Project is a roughly \$90 Million Upgrade of the SDSD's North Plant (North Plant). The scope involves installing new aerobic and anaerobic treatment, solids dewatering, and replacing existing headworks and lift stations. The North Plant is currently operating without any SCADA system; however the upgrades will require implementation of one. The Scope of Services section is intended to provide a snapshot of required work for the project, but may be adjusted during pricing negotiations.

## II. Scope of Services:

All project phases include the following items:

- Project Management for the given task. This includes meetings with SDSD staff, the Panel shop and the electrician to ensure the project operates smoothly.
- Panel will be fabricated and UL508 listed at the assembly facility
- Panel testing will occur at an agreed upon location and SDSD will have the option to observe testing as desired.
- All PLCs will be Modicon M340 as selected by SDSD
- Network Switches will be 8 or 16 port N-Tron 5000 series switches with 2 fiber ports each as selected by SDSD
- Include time to test the I/O with the electrician that performed the installation and start up the control loops.
- Touchscreens will not be required in the PLC panels because SDSD will be utilizing iPads or Tablets to do the remote control via SCADA.
- Include Sales Tax for all of the control panels.

### Task 1: Panel and SCADA Design

Design the following PLC panels with the below hardware included. This includes Bills of materials and full fabrication drawings. The following PLCs are included as shown on the project drawings:

PLC-BB  
PLC-DB  
PLC-HW  
RIO-CB  
PLC-DW  
PLC-DCB  
PLC-UW

The following hardware is also included for each panel:

- Each PLC panel will have redundant DC power supplies and a DC UPS with relay monitoring for short term backup
- PLC I/O will have relay digital outputs, DC inputs, 4-20 ma inputs and 4-20 ma outputs
- The enclosure will be a NEMA 4/12 enclosure as all PLCs will be in electrical rooms or near electrical control gear also rated NEMA 4/12 or lesser



- We anticipate most of the enclosures to be free standing enclosures and will include all fusing, power distribution, fiber patch panels, panel light, AC main breaker etc.
- The panels will include minimum 20% spare I/O built into the panels for future expansion and project adaptations as needed thru the project.
- Assume that all VFDs, Motor starters, PQMs, generators etc. that are network connected devices do not require any physical I/O.
- Include separate PLC network adapters for segregation of the MCC ethernet connections, as well as other network connected devices to minimize traffic on the main plant network.
- Include up to two protocol gateways for conversion from Modbus to Modbus TCP
- Include a 5% annual price escalation for materials since many of these panels will not need to be fabricated for 1-2 years from now.
- Include HMI's on PLC-DW only, as the plant desires to utilize WIFI and tablets with full SCADA around the facility. The PLC-DW will only be an interface for the dewatering system controls.

### **Task 2: Panel Fabrication**

Coordinate with and procure hardware for fabrication of PLC panels. Determine Panel fabrication schedules.

- Some panels on the critical path will need to be prioritized based on certain milestone requirements. This will need to be coordinated.
- Test each panel at the panel shop for point to point integrity for all I/O, function of all circuit breakers, lights, network switches, etc. to ensure they are working properly prior to delivery
- Coordinate shipping and delivery to project site.

### **Task 3: PLC and SCADA Programming**

Program the provided PLCs with similar standards, functionality, and operations feel as the PLCs at the SDSD South Plant (South Plant). The automatic control loops will be worked out with AQUA Engineering to ensure that the functions operate as designed by the process engineers.

Vendor PLCs will be coordinated with, and information will be displayed on SCADA

PQMs will have information displayed on SCADA

The Generator will have information displayed on SCADA similar to the new generator at the South Plant.

IP Address lists will be managed for the entire North Plant process network. Anticipate having multiple LANs in the network.

Historian, trending and a dialer will be set up on the SCADA servers. All analog values will be trended in the historian. Up to 3 custom reports will be provided as part of the programming efforts once the system is up and operational.

Include the following Computer software and hardware in this task:

- One full size network rack with open frame
- Two Dell Servers
- Ignition Software licenses for one primary and one backup server and perspective module
- Two Rack mount UPSs for the two servers
- One copy of PLC programming software for installation on primary server



- One copy of HMI programming software for installation on the primary server

Include two Screen review meetings to go over with the SDSD staff the SCADA screens during development to add any comments and adjustments to the screens desired during the process. Anticipate developing the screens with a similar look and feel to the South Plant to provide consistency and continuity between facilities.

Note that if phone callouts are desired a VOIP or SIP connection phone line are required. Alternatively, a land line can be used for call outs as well. Otherwise callouts will be via text (Cell connection sim card required) or e-mails. Any combination of the above can be utilized as coordinated with the SDSD thru the development of the SCADA screens.

Note that the majority of the I/O for this facility (Approximately 90%) is network I/O from VFDs, Starters, PQMs, Generators, Vendor panels etc. The physical I/O and PLC panel drawings disproportionately represent the amount of programming required for all of the software I/O connected in this control system. We have approximately 94 network-controlled devices in this system each with up to 40+ anticipated I/O connections to them for larger Vendor systems to display, control and trend on SCADA.

#### **Task 4: PLC & SCADA Commissioning Support**

Commissioning support should anticipate labor for the following activities:

- Physical I/O testing with the electricians
- Network I/O testing to devices and vendor panels
- Network Coordination with Clearlink
- Clean Water Testing / Loop Tests
- Process startup and testing
- Training
- Client Computer configuration (District Computers)

There are two separate startup efforts anticipated, one during the first startup of the blowers and MBBR with associated equipment, and one for the balance of plant.

#### **Task 5: Instrument Package**

The project instruments will be procured and furnished by SDSD.

#### **Task 6: Instrument Package Engineering and Support**

The additional work required for the instrument package is carried in this task, and will be performed on an hourly basis based on billing rates for the following activities:

- Loop Drawing generation. Add instrument termination points on the PLC I/O drawings and/or separate loop drawings as required for use by the contractor during installation for instrumentation as necessary.
- Instrument Startup and commissioning will be provided.
- Instrument calibrations and configuration sheets will be provided once the instruments setup is completed. These will be compiled with the information from the submittal package to provide an instrument O&M manual
- Instrument Training as necessary.



## Task7: Project Closeout

PLC panel and loop drawing record drawings will be provided based on the contractor redlines provided. These will be provided to SDSD after commissioning and testing is completed.

## Responsibilities of Others

1. Installation of all provided equipment to be provided by project contractor and/or electrician.
2. All terminations and labeling of field cables to be provided by project electrician.
3. Configuration of Network Switches to be performed by the SDSD IT contractor.
4. Conduit and Wiring to be performed by others to power the instruments, and interconnect the signals to the Control Panels.
5. Network Cable Testing prior to connection to the network switches per the contract specifications.

## III. Statement of Qualification (SOQ) Requirements and Scoring

Technical Qualification Evaluation - Responsive qualifications will then be evaluated by an evaluation committee appointed by SDSD against the qualification technical criteria noted in this RFSQ. Qualifications will be evaluated against the technical criteria as follows:

1. Experience and Expertise: 25 points

List and describe similar projects with similar clients and scopes.

2. Team Qualifications: 25 points

List individual team member resumes/CVs that you anticipate would be working on this project, and where the individual is based

3. Past Performance: 25 points

Highlight past projects successfully completed and list references from other Owners. Points will be awarded subject to contacting and checking with references provided.

4. Local Presence: 25 points

These points will be assessed based on locations of team members and projects highlighted in items 1-3 above.

Total possible: 100 points

This SOQ is not being used to solicit costs, pricing or to negotiate fees; this will be done in accordance with the Utah Procurement Code. **Please do NOT submit costs with your SOQ.**



## IV. Award

### RFSQ PROCESS

This RFSQ is not being used to solicit costs, pricing, or to negotiate fees; this will be done in accordance with the Utah Procurement Code.

Pursuant to UCA §63G-6a-Part 15, this RFSQ is being used to identify qualified Design Professionals (Vendors). This process is comprised of the following stages:

#### **Stage 1 - RFSQ: Vendor Qualifications**

During this stage Vendors will submit SOQ's based on the criteria described herein. Vendors will be evaluated based on the evaluation criteria noted herein. An evaluation committee will score the Qualifications to identify the three (3) highest scoring vendors.

#### **Stage 2 – Fee Negotiations**

Stage 2 will consist of fee negotiations with the highest scoring vendor. If a fair and reasonable contract cannot be negotiated with the highest scoring vendor, SDSD will enter into negotiations with the next highest scoring vendor, and so on until a fair and reasonable contract can be established.

It is anticipated that this RFSQ will result in a single contract award to the responsive and responsible Offeror with the highest score justified by the procurement code, providing cost is found to be reasonable and fair after negotiations.

After the evaluation and final scoring of qualifications is completed, the SDSD shall award the contract as soon as practicable (subject to the requirements of Utah Code Section 63G-6a-707(10) and 63G-6a-1503 and 1503.5) to the eligible responsive and responsible Offeror, subject to Utah Code Section 63G-6a-707(10) and 1503.5, provided the RFSQ is not canceled in accordance with Utah Code Section 63G-6a-902.