

Request for Proposals

To Provide

Consulting Services to the Fallbrook Public Utilities District

For SCADA Programming/Integration Services for the Santa Margarita Groundwater Treatment
Plant

November 20, 2019

Fallbrook Public Utility District

990 E Mission Road

Fallbrook CA 92028

(760) 728-1125

I. Introduction

The District has awarded construction of the Santa Margarita Groundwater Treatment Plant (SMGTP) to a Joint venture of J.R. Filanc Construction and Alberici. The groundwater treatment plant has a peak capacity of approximately 8 MGD and consist of Iron and Manganese Removal and RO treatment processes along with associated chemical feed facilities. There are also multiple pump station and flow control facilities associated with the project. The project was designed by Infrastructure Engineering Corporation (IEC). IEC was responsible for specifying all hardware and software associated with the project and developing control strategies for the system, but is not responsible for developing and implementing the programming of the SCADA system. The consultant selected for this project will be responsible for all programming necessary to implement the project.

The following attachments are included for reference:

1. SMGTP Final Plans and Specifications including control strategies

II. Scope of Required Services

The Proposed Scope of Services for This Project Includes:

TASK 100 – PROJECT MANAGEMENT

Consultant shall provide overall project management including contract administration, and budget and schedule tracking. Consultant shall provide internal quality control and quality assurance procedures.

TASK 200 – REVIEW PLANS AND SPECIFICATIONS

Consultant shall review final construction documents provided by IEC to confirm specified hardware and software is appropriate for integrating with the District's system. The system shall be compatible with software and hardware used by the District for water system operation and will be based on Allen Bradley PLC's with a ClearSCADA software platform. The tasks required to review the construction documents include:

- Review of SMGTP plans and specifications.
- Review of District SCADA system and networking.
- Review Hardware and software specified and provide comments/revisions.
- Review control strategies developed for process control and provide comments/revisions.
- Review communication approach between instruments and PLC and between PLC's and the network and provide comments/revisions.

TASK 300 – IMPLEMENTATION

Consultant shall obtain all software from the Construction Contractor as required by the project construction documents and submitted to the Engineer. This software shall be delivered to the District following completion of the project. Consultant shall provide all required programming to implement the project outlined in the attached preliminary design report.

TASK 301 – Project Kick-off meeting:

The kick-off meeting will introduce project team members from the District and Engineer and provide a clear statement of project goals and critical success factors. Consultant will conduct the meeting and provide meeting minutes. The following topics will be covered at the project kick-off meeting:

- Review Scope of Services
- Schedule and Deliverables
- Project Team Roles and Responsibilities
- Communication and Contact Information
- Review Periods
- Existing Documentation and Software Availability
- Change of Scope Procedures
- Configuration Items
 - Standards and Conventions
 - Reports and Trends
 - Alarm Prioritizing and Area Assignments

TASK 302 – Develop Standards and Conventions Document

The configuration system standards and conventions will be documented and shall be used by the Consultant in programming and configuring the SCADA system. An initial meeting at the District's facility will be held to discuss and define the following principal items:

- Tag Names. Tag Name standards for database points will be defined.
- Graphic Display Conventions. Graphic display conventions will be developed. Conventions will address navigation buttons, control graphics, pop-up displays, and alarm summary. Type, color, and size of devices and flow lines and the presentation of other information on graphic displays will be addressed to ensure similar appearance for similar applications. Colors for dynamic information, static information, trends, and Alarm/Event displays will also be defined.
- Control Standards. Methods for equipment operation will be standardized to ensure that Operator steps required to control equipment are consistent throughout the control system.
- Alarm Conventions. Define the general strategy for operator alarming. This includes the types of items to be alarmed, as well as what device will generate the alarm. Alarming

includes screen alarms as well as dial-out alarms.

A draft Standards and Conventions Document shall be developed for review by the District. Comments will be incorporated into a final draft Control System Standards and Conventions Document. A final version of the Standards and Conventions Document will be included in the final documentation submitted by Consultant.

TASK 303 Develop PLC Programs

After Standards and Conventions document has been developed and reviewed by the District the Consultant shall develop the PLC tag listing and proceed with PLC program development using hardware and software provided to the Consultant. The PLCs shall be programmed to control the plant according to the control strategies listed in the Contract Documents. Consultant shall attend up to 15 progress meeting during PLC program develop prior to start-up.

TASK 304 Develop Operator Workstation Graphic Displays and Database

Develop new operator control and monitoring displays for the Operator Workstations and Local Operator Interfaces. The Operator Workstation shall be programmed to control the plant according to the control strategies in the Contract Documents. After the Operator Workstation graphic displays are developed the Consultant shall review graphics with the District.

TASK 305 Develop Final Graphics Programming

After review of the Operator Workstation graphic displays with the District, the Consultant shall incorporate the District's comments and develop the final Workstation displays and PLC programming.

The consultant's services include but are not limited to the following:

1. Development of graphics in ClearSCADA for the project. It is expected that the following screens will be necessary:
 - a. Plant Overview
 - b. IM Filtration Process
 - c. RO Overview
 - i. RO Process details
 - ii. CIP Process
 - d. Chlorine Contact and Feed
 - e. PW Pumps
 - f. Analyzers Overview
 - g. Chemical Feed 1
 - h. Chemical Feed 2

- i. Backwash Waste and Recovery
 - j. Gheen Pump Station
2. Develop alarms and trends for new and existing facilities based on P&ID's included with the preliminary design. All measurements that provide analog signals shall be able to be included in trends. Develop 30 baseline trends for monitoring and reporting as directed by the District. Program remote notification of alarms and ability to remotely access SCADA system.
3. Programming of process control strategies for the plant. The level of expected programming required is identified in the draft process control strategies. Consultant shall work with staff to finalize the control strategies.

TASK 400 – START UP SERVICES

The consultant shall provide start-up services as described in tasks below including Attendance at start-up meetings, Testing of programming and system components, Troubleshooting of SCADA/programming/communication issues, and Training

TASK 401 Start-up Meetings

The consultant shall attend up to 10 start-up meetings and provide input on coordination of consultant programming with the overall contractor schedule for system start-up.

TASK 402 Field Calibration Report Review

Consultant shall verify that the Contractor's field calibrations are coordinated with PLC programming.

TASK 403 PLC and Operator Workstation Loop Checkout Programs

Consultant shall develop loop checkout PLC Programs and an Operator Workstation Loop Checkout Application to allow the Contractor to trip signals to the PLC and verify operation at an Operator Workstation. The PLC programs shall consist of the minimum programming to allow signals to pass from the field through the PLC and display on the Operator Workstation. No control shall be provided with these Loop Checkout programs.

TASK 404 Verify Control System Installation

After the Contractor has completed fiber optic and control system communication testing, Consultant shall verify control system equipment installation, networking, and communications status. The Consultant shall prepare a statement of deficiency for the Contractor for any control system installation problems or communication errors.

TASK 405 Install and Test PLC Programming

After the Contractor has completed loop checks and verified that all equipment operates in the local manual mode, the Consultant shall install the PLC programming and test/start-up the PLC program. PLC programming shall be tested in manual and auto mode. If signals from field equipment or other PLCs are not available, the signals shall be simulated as required to verify proper operation of the PLC algorithm.

If deficiencies in the Contractor's work are found during the PLC I/O verification or PLC program testing, the Consultant shall provide a statement of deficiency to the Contractor.

The testing and startup of the PLC programs is dependent on the Contractor's completion of work and schedule.

TASK 406 Install and Test Operator Workstation Programming

After the PLC I/O and programming have been verified and tested, the Consultant shall test all Operator Workstation graphic displays for control of the system. If deficiencies in the Contractor's work are found during the Operator Workstation testing, the Consultant shall provide a statement of deficiency to the Contractor for resolution. The deficiency statement may include items regarding the control system installation and communication. .

TASK 407 Site Acceptance Testing

The Consultant shall attend and witness a portion of the Contractor's Site Acceptance Test in conjunction with the District. This task shall include one 2-Day site visit to the District's facility. If the Contractor has significant deficiencies which warrant additional site acceptance testing, the Consultant can attend additional testing as a supplemental service.

TASK 408 Training

Consultant shall provide training on Operation of the SCADA system for Operations Staff (3 Days) and Training on Programming/Troubleshooting of Control System (3 Days)

TASK 409 Final Documentation

After the system is fully operational and accepted by the District, the Consultant shall deliver final documentation. Electronic copies shall be provided on USB thumb drives. The table below lists the quantities and type of documentation to be provided to the District:

Documentation Type	Hard Copy	Electronic Copy
PLC Programs	None	2 electronic copies shall be provided for all data
HMI Software Database	None	

LOI Programs	None	
Graphic Displays	None	
Standards and Conventions	None	
Software and Licensing from Task 300	None	

III. Facility Location

The FPUD SMGTP is adjacent the District's Water Reclamation Plant which is located at 1425 Alturas Rd. in Fallbrook CA. Meetings are anticipated to take place at the WRP or at FPUD offices in Fallbrook at 990 East Mission Road in Fallbrook CA.

IV. Proposal Requirements

Written proposals are to include a discussion of the Consultant's overall approach to the project, a summary of key personnel and qualifications, a rate schedule and documentation of the firm's qualifications. A cost proposal shall be included in a separate sealed envelope. The proposal shall not exceed 15 pages excluding appendices (resumes and detailed project examples). Responders will be evaluated based on the information submitted in accordance with Section VI. Proposals submitted in response to this RFP shall include:

1. Executive Summary – Include a brief overview
2. Proposed Approach
3. Project Organization and Key Personnel
4. Experience
5. Rate Schedule and Cost Proposal
 - a. Include an hourly rate schedule including all service fees and anticipated travel costs.
 - b. Cost proposal shall identify the effort anticipated to complete the project. Identify assumptions associated with the cost proposal. Include in a separate sealed envelope.
6. References
 - a. Provide three references including contact information for similar projects conducted by key staff proposed for this project.
7. Schedule
 - a. Project Schedule shall identify major milestones and time to complete tasks after each milestone is met.

V. Evaluation Criteria

1. Approach to work
 - a. Understanding of the Project
 - b. Familiarity with programming in ClearSCADA.
 - c. Familiarity with implementing process control strategies outlined
2. Company/Staff and Project Experience
 - a. Past performance on similar projects
 - b. Proven specialization of firm on similar projects
 - c. Cost, schedule and quality control on similar projects
3. Project Manager and Staff
 - a. Past performance, depth of management and technical expertise of project manager on similar projects.
 - b. Past performance and technical expertise of proposed staff on similar projects.
 - c. Recent project experience
 - d. Ability to respond quickly to District needs and be on-site to address issues.
4. Previous Experience with Similar Projects
 - a. Prior work experience and performance.
 - b. Familiarity with ClearSCADA and process control.
5. Availability of Staff
 - a. Commitment and availability of key personnel.
6. Quality Control/Quality Assurance Program
 - a. Quality control and quality assurance program
7. Schedule
 - a. Ability of the Consultant to perform the work in a timely manner.

VII. Schedule for Selection and Award

The District anticipates that the process for selection of firm and awarding of the contract will be according to the following tentative schedule:

1. Issue RFP.....November 20, 2019
2. Pre-proposal meeting.....December 12, 2019
3. Proposal due date.....January 14, 2020
4. Interview (TBD).....January 20, 2020
5. FPU Board of Directors approval (TBD)January 27, 2020
6. Final selection and notification (TBD)January 28, 2020
7. Construction Complete.....November, 2021

The pre-proposal meeting is mandatory and will be held at the SMGTP site adjacent to the WRP at 1425 Alturas at 9:00 AM.

VIII. Special Conditions

1. An example professional services contract is included on the attachments. Consultant shall identify any changes they will require in the contract.

IX. Submittal Requirements

1. One (1) executed original, clearly marked on the cover and three (2) additional copies of the proposal shall be submitted. An individual authorized to execute legal documents on behalf of the project team shall sign the proposal.
2. This RFP shall be received no later than 4:00 PM local time on January 14, 2020, at the District's Administrative offices:

Fallbrook Public Utility District
Attn: Joye Johnson, Operations Specialist
990 East Mission Road
Fallbrook, CA 92028

Failure to comply with the requirements of this RFP may result in disqualification.

All questions regarding this RFP shall be directed to Joye Johnson, Operations Specialist, at joyej@fpud.com or 760-728-1125.