



February 6, 2020

TO: LOCSO Board of Directors

FROM: Rob Miller, PE, District Engineer

SUBJECT: **Agenda Item 7G – 2/6/2020 Board Meeting**
Supervisory Controls and Data Acquisition (SCADA)
Improvements for District Water System Operations

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DESCRIPTION

The District operates and maintains an existing SCADA system to monitor process parameters, perform normal operational controls and generate alarm conditions to alert operators to changing, unusual or failure conditions throughout the District's water system. The SCADA system consists of Programmable Logic Controllers (PLC), Human Machine Interface (HMI) screens, communications and network interfaces to bridge the hardware. The District's existing SCADA system is old, antiquated and unreliable. It is the District's desire to evaluate the existing system and develop a SCADA Upgrade Request for Proposals (RFP) document to secure a contract and update the system to a modern SCADA system using a design-build delivery approach. This approach is modeled after a similar upgrade done successfully by the Nipomo CSD for their water and wastewater system SCADA upgrades. This process of upgrading the SCADA system will be implemented in two phases, the first of which will be for the SCADA consultant to evaluate the existing SCADA system, and work with District staff to:

- Detail the current system attributes;
- Define the District's desires for system upgrade requirements and preferences;
- Detail automation levels and degree of controls desired;
- Outline requirements for new radio communication system required to understand site geographic capabilities, design considerations and constraints.

The new SCADA system, once upgraded, will be reliable, secure, expandable, easily maintained and operate at a high performance, and will serve the District's needs moving forward for at least 15 to 20 years or more. The project will evaluate and recommend new hardware including PLCs, new operational software, and most importantly explore alternatives for reliable, cost-effective high-speed communication.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends that the Board authorize staff to award contract to AECOM the amount of \$30,360, to provide Phase 1 services to evaluate the District's existing SCADA system and provide a letter report to the District of their findings.

This item will be approved along with the Consent Calendar unless it is pulled by a Director for separate consideration. If so, staff recommends that the Board adopt the following motion:

Motion: I move that

- 1) The Board direct staff to award contract to AECOM for Phase 1 SCADA evaluation services, in the amount not to exceed \$30,360; and***
- 2) Authorize the General Manager to execute said contract.***

DISCUSSION

The District's water system consists of the following facilities that will be involved with the SCADA upgrade:

- Booster Station – 1
- Wells – 4 total
- Tanks – 2 total
- Intertie – 1
- Drainage Sites – 4 total

The District's Utilities Group consists of Water and Drainage Division operating from the Los Osos Community Services District office. Operations are monitored by the Utilities Group through an existing Supervisory Control and Data Acquisition (SCADA) located at the respective facilities.

At this time, the specifics of what existing SCADA elements can be salvaged and incorporated into the new SCADA system, are not known. The study to be conducted by the SCADA Consultant will refine recommendations in this regard.

District staff approached AECOM for these services, due to their depth of expertise in this highly specialized task. Few companies have the qualifications and expertise needed to provide SCADA services as described in this staff report and AECOM's proposal. AECOM has provided services in California reaching back 50 years, successfully engineering a variety of water and wastewater systems, conveyance, water resources, electrical, structural, environmental, and transportation projects. Their recent work experience includes recently completed SCADA System improvements at Wastewater Treatment Plants in Thousand Oaks, City of Oxnard and ongoing SCADA upgrades at Thousand Oaks Water Treatment Facility, and more locally, SCADA upgrades for the Nipomo CSD Water and Wastewater Facilities.

FINANCIAL IMPACT

This Phase 1 effort, at \$30,360, [s currently budgeted for under the Fund 500 (9006) and Fund 800 (9006) Capital Outlay budgets. Once Phase 1 is completed, the District envisions the Phase 2 SCADA System Implementation (Develop RFP, Design-Build Contract) to include estimated budget costs as follows:

The estimated budgetary costs for future expenditures as follows:

- Prepare RFP for Design-Build Contract (including construction support), \$60,000
- SCADA Design-Build Contract, ~\$300,000 to \$500,000