



WASHOE COUNTY

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STAFF REPORT

BOARD MEETING DATE: November 13, 2018

DATE: October 11, 2018

TO: Board of County Commissioners

FROM: Dylan Menes, S.E., P.E., Senior Licensed Engineer
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THROUGH: Dwayne Smith, P.E., Division Director, Engineering and Capital Projects
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SUBJECT: Recommendation to approve an Agreement for Professional Consulting Services between Washoe County and Jacobs Engineering through January 31, 2020 to provide a Wastewater and Reclaimed Water Control System Master Plan and Operational Improvements for the Washoe County SCADA Networks [in the amount of \$422,800]. (Commission Districts 2, 4, and 5.)

SUMMARY

Washoe County operates and maintains sanitary sewer conveyance and treatment systems in Cold Springs, Lemmon Valley, Spanish Springs and South Truckee Meadows areas. The County also operates and maintains a reclaimed water system from the effluent generated in South Truckee Meadows. An irrigation water system is also operated and maintained in Wadsworth.

The majority of the components of all these systems have some form of Supervisory Control and Data Acquisition (SCADA) equipment, controls, and communications functionality. This SCADA system allows for monitoring, measuring, and control of equipment in all the County's utility facilities. Currently staff must manually visit and measure basic functions such as flow rates and water levels in many locations; additionally, there is very limited redundancy and emergency operational control functionality in the current County SCADA system.

This proposed contract serves to review and assess the entire utility-wide existing SCADA and emergency back-up power systems and subsequently will define deficiencies and criticalities to the existing system. The consultant will lead Stakeholder workshops to assist in the development and proposal of alternatives for a 20-year capital project program and master plan to develop a more robust, efficient, and resilient SCADA network. These alternatives will then have a life-cycle cost analysis performed to select the best alternatives for future Master Planning.

AGENDA ITEM # _____

Additional scope for this contract includes the development of a water quality compliance data base to store and report out on all water quality testing data; field as-built drawings developed for existing facility electrical systems; integration with the SCADA system and the County's asset management system; and aggregation and integration of Operations and Maintenance documentation and reporting templates into the SCADA system.

CH2M Hill, now Jacobs Engineering, along with Sierra Controls developed and provided most all of the Utility's existing SCADA network and facilities. This proposed engineering services contract is being recommended to leverage the consultant's institutional knowledge of the Utility's systems, and to provide continuity with existing designs, and staff operational knowledge for future enhancements and expansion.

Washoe County Strategic Objective supported by this item: Safe, Secure and Healthy Communities

PREVIOUS ACTION

There is no previous action on this requested contract and there are no other previous actions concerning providing operational improvements related to this scope.

BACKGROUND

The SCADA system is what allows sewer and reclaimed water system operators to remotely monitor and control the health and operations of all the various pumps, valves, electrical equipment, and facilities that are required to maintain the sanitary sewer and reclaimed water systems for Washoe County. This SCADA system has grown organically over time and was implemented differently at most locations; the system is not present nor securely located in other facilities, often requiring operations crews to physically visit the site for any operational issues or to simply understand how the system is operating. Additionally, there is very limited redundancy and emergency operational controls for the system in the event of a disaster or major disruption of service. Sierra Controls Systems, Inc., a proposed subconsultant for this engineering-services contract, has provided the County's SCADA utility systems since 1984 and has designed, installed, and maintained most of the system.

Currently, water quality and compliance data is not managed holistically across the utility and historic data is often missing. As-built documentation of some of the facilities' electrical systems does not exist, and there is very limited remote back-up power management ability in the event of a power outage. Gaps in system design and parameters require extensive operational work to manage, and an inconsistent tracking of laboratory testing results makes larger operational trending and analysis challenging.

FISCAL IMPACT

The proposed agreement to provide a System-Wide SCADA (Supervisory Control and Data Acquisition) Control System Master Plan Study and Operational Improvements for the Washoe County Wastewater and Reclaimed Water Networks totals \$422,800. Utility staff estimates that 25 percent of the cost (\$105,700) is attributable to the County's reclaimed water system, and 75 percent of the cost (\$317,100) is attributable to the

County's sanity sewer system. Sufficient budget authority for the reclaimed water portion exists in cost center 664500 account 710100 (Professional Services). A budget adjustment will be processed in FY19 to move authority for the sewer portion into cost center 664950 account 710100 (Professional Services).

RECOMMENDATION

It is recommended the Board of County Commissioners approve an Agreement for Professional Consulting Services between Washoe County and Jacobs Engineering through January 31, 2020 to provide a Wastewater and Reclaimed Water Control System Master Plan and Operational Improvements for the Washoe County SCADA Networks [in the amount of \$422,800].

POSSIBLE MOTION

Should the Board agree with staff's recommendation, a possible motion would be: "Move to approve an Agreement for Professional Consulting Services between Washoe County and Jacobs Engineering through January 31, 2020 to provide a Wastewater and Reclaimed Water Control System Master Plan and Operational Improvements for the Washoe County SCADA Networks [in the amount of \$422,800].