

CITY OF SANTA ROSA
BOARD OF PUBLIC UTILITIES

TO: BOARD OF PUBLIC UTILITIES
FROM: TRACY DUENAS, SUPERVISING ENGINEER
CAPITAL PROJECTS ENGINEERING

SUBJECT: SOLE SOURCE CONTRACT SPECIFICATION FOR TESCO
PROGRAMMABLE LOGIC CONTROLLERS AND SCHNEIDER
ELECTRIC RADIO TELEMETRY SYSTEM FOR CONTROLLER
AND RADIO UPGRADES AT WATER PUMP STATIONS AND
SEWER LIFT STATIONS, CONTRACT NO. C02052

AGENDA ACTION: RESOLUTION

RECOMMENDATION

It is recommended by the Transportation and Public Works Department and the Water Department that the Board of Public Utilities, by resolution, approve the sole source contract specifications for Tesco Controls, Inc. programmable logic controllers and Schneider Electric radio telemetry system for the Controller and Radio Upgrades at Water Pump Stations and Sewer Lift Stations, Contract No. C02052.

EXECUTIVE SUMMARY

This resolution will approve the sole source contract specifications for Tesco Controls, Inc. programmable logic controllers and Schneider Electric radio telemetry for the Controller and Radio Upgrades at Water Pump Stations and Sewer Lift Stations, Contract No. C02052.

BACKGROUND

The City of Santa Rosa (City) Water and Wastewater (Local) Operation Division supervisory control and data acquisition (SCADA) and radio telemetry system provides means for remote monitoring, collection and storage of operational data, and control of its water pump stations and sewer lift stations. In August of 2019, a predesign report by Kennedy Jenks identified the existing SCADA and radio telemetry system as being vulnerable to obsolescence. The system is comprised of existing solid-state equipment manufactured in the 1980's and 1990's, and integrated hardware and software from different manufacturers. Non-uniform hardware and software has resulted in an increased

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frequency of communications errors between various facilities. Kennedy Jenks' report evaluated the SCADA system at the following locations:

- the primary system at the Utilities Field Operation (UFO)
- the backup system at water Pump Station 4 (PS4)
- two repeater sites located at water reservoir R7 and R17
- 21 water pump stations at various locations
- 17 sewer lift stations at various locations
- 1 water well site

Water pump station and sewer lift station radio communications are transmitted via two sets of redundant radio repeaters located at water reservoir R7 and R17 sites. The repeaters in turn relay communications with redundant radio sets located at the primary and backup SCADA systems, locations at UFO and PS4, respectively. The R7 repeater communicates with 11 water pump station sites via UFO SCADA and 6 sewer lift station sites via PS4 SCADA. The R17 repeater communicates with 9 water pump stations and 1 well site via UFO SCADA and 11 sewer lift station sites via PS4 SCADA.

Kennedy Jenks' predesign report assessment and evaluation provides the basis for the scope of work for the proposed Controller and Radio Upgrades at Water Pump Stations and Sewer Lift Stations (Project), Contract No. C02052. The Project will involve programmable logic controller (PLC) upgrades to 22 various Local Operation pump station sites, and radio telemetry improvements to 41 various Local Operation facility locations, as shown on Exhibit A and described as follows:

Facility	Address	PLC UPGRADES	RADIO UPGRADES
Sewer Lift Station (SLS) 01	2101 Stagecoach Rd/Parker Hill Rd		X
Sewer Lift Station (SLS) 02	3978 Skyfarm Dr/St Andrews Dr		X
Sewer Lift Station (SLS) 03	3987 Clearbrook Ct		X
Sewer Lift Station (SLS) 04	4021 Skyfarm Dr		X
Sewer Lift Station (SLS) 05	3925 Fawn Glen Pl		X
Sewer Lift Station (SLS) 09	601 Piezzi Rd		X
Sewer Lift Station (SLS) 10	2583 Country Club Dr/Guerneville		X
Sewer Lift Station (SLS) 11	W Collage Ave & Fulton Rd		X
Sewer Lift Station (SLS) 12	2820 Mohawk St		X
Sewer Lift Station (SLS) 13	2541 Pawnee St		X
Sewer Lift Station (SLS) 15	107 Alderbrook Dr		X
Sewer Lift Station (SLS) 16	5391 Montgomery Dr		X
Sewer Lift Station (SLS) 17	8810a Oakmont Dr		X
Sewer Lift Station (SLS) 18	3975 Shelter Glen Way		X
Sewer Lift Station (SLS) 19	3710 Newbury Ct		X
Sewer Lift Station (SLS) 20	3978 Hansford Ct		X
Sewer Lift Station (SLS) 21	3919 Flintridge Dr		X
Water Well W2-1	806 Carlee Rd		X

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Water Reservoir (R) 7	5557 Yerba Buena Rd		X
Water Reservoir (R) 17	2201 Newgate Ct		X
UFO	35 Stony Pt Rd		X
Water Pump Station (PS) 15	6368 Sonoma HWY		X
Facility	Address	PLC UPGRADES	RADIO UPGRADES
Water Pump Station (PS) 01	280 Fountain Grove Pkwy	X	X
Water Pump Station (PS) 02	1395 Fountain Grove Pkwy	X	X
Water Pump Station (PS) 03	3503 Thomas Lake Harris Dr	X	X
Water Pump Station (PS) 04	2260 Sonoma Ave	X	X
Water Pump Station (PS) 04B	2521 Del Rosa Ave	X	X
Water Pump Station (PS) 04R	2300 Franklin Ave	X	X
Water Pump Station (PS) 05	3785 Skyfarm Dr	X	X
Water Pump Station (PS) 06	5204 Montgomery Dr	X	X
Water Pump Station (PS) 07	5219 Monte Verde	X	X
Water Pump Station (PS) 08	5870 Mountain Hawk Dr	X	X
Water Pump Station (PS) 09	2889 Summerfield Rd	X	X
Water Pump Station (PS) 10	4738 Woodview Dr	X	X
Water Pump Station (PS) 11	1825 Kawana Springs Rd	X	X
Water Pump Station (PS) 12	297 Valley Oaks Dr.	X	X
Water Pump Station (PS) 13	801 White Oak Dr	X	X
Water Pump Station (PS) 14	1051 White Oak Dr	X	X
Water Pump Station (PS) 16	4177 Chanate Rd	X	X
Water Pump Station (PS) 17	2750 Fountain Grove Pkwy	X	X
Water Pump Station (PS) 18	2195 Fountain Grove Pkwy	X	X

PLC upgrades will include replacement or upgrades to existing control panels and hardware, wiring, door mounted operator interfaces, and all necessary programming. The Project will be phased in a manner that all radio upgrades will occur first and within a prescribed 2-3-week duration, with no more than half the SCADA system offline at a time. Once all radio upgrades are completed, PLC upgrades at the various water pump station sites will commence in such manner that upgrades for each station will occur within a prescribed one-week duration, with only one station taken offline at a time.

Local Operations has standardized its SCADA system with Tesco Controls, Inc. (Tesco) programmable logic controller (PLC) equipment and technology to provide remote management of various processes involved with water and wastewater operations. To support the system, the Water Department is staffed with factory trained instrumentation technicians that control, maintain, monitor and respond to system failure. Local Operations is also proposing to standardize its radio telemetry system with Schneider Electric equipment and technology in an effort to match the Water Reuse Division. The existing telemetry system is subject to obsolete equipment and discontinued manufacturer technical support. Upgraded radios will minimize operational impacts,

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provide higher data rates, reduce interference, and provide more efficient use of the overly dense existing wireless spectrum. It is for these reasons that Local Operations requires Tesco series PLC equipment and Schneider Electric radio telemetry equipment for the Project.

The contract specifications are currently written to explicitly sole source the following:

Programmable Logic Controllers

- Programmable Logic Unit - Tesco L3000 PLC System
- Secure Control and Communication Module (processor) - Tesco Model L3000e
- Universal Input / Output modules - Tesco L3000 Model HDIO
- Power Supply Unit - Tesco Model L3000 PSU

Radio Frequency

- Transceiver - Schneider Electric Trio QR-150 and QB-150

PRIOR BOARD OF PUBLIC UTILITIES REVIEW

Not applicable

ANALYSIS

The authority to approve the proposed sole source items lies with the Board of Public Utilities. Section 3400 of the California Public Contract Code requires when a specific brand or trade name product is called for in connection with the construction or repair of a public works project, the contract specification must be followed by the words “or equal” so that bidders may furnish any equal product or service at a lower cost to the taxpayer.

However, Section 3400 allows the award authority to make a finding that allows a specific brand or trade name for a particular product or service in order to match other products in use on a particular public improvement, either completed or in the course of completion.

Local Operations uses Tesco Controls, Inc. PLC's exclusively to manage its water pump station and sewer lift station operations. Continued utilization of Tesco equipment will maintain reliability and uniformity within the existing system; capitalize on staff's familiarity and institutional knowledge; streamline training, maintenance, and troubleshooting procedures; and reduce spare parts inventory. Local Operations' proposal to standardize

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Schneider Electric radio telemetry equipment and technology will also provide operational uniformity and compatibility with the Water Reuse Division already exclusively using the product. Approving such a proprietary specification will maintain reliability and uniform compatibility with existing equipment and minimize operational impacts to the division.

FISCAL IMPACT

Funds for this project were appropriated in the 2019-20 fiscal year Water Department Capital Improvement Program budget. Any future funds, if needed, will be appropriated as part of the Water CIP budget.

ENVIRONMENTAL IMPACT

This action is categorically exempt from the California Environmental Quality Act (CEQA), pursuant to CEQA Guideline Title 14, Chapter 3, Article 19, Sections 15301 and 15303 of CEQA, as the Project consists of a minor alteration of an existing public sewerage facility operated by the Water and Wastewater Operations Departments, located within the City limits.

BOARD/COMMISSION/COMMITTEE REVIEW AND RECOMMENDATIONS

Not applicable

ATTACHMENTS

- Attachment 1 – Site Map

CONTACT

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