



**DATE:** April 20, 2010

**TO:** Mayor and City Council

**FROM:** Director of Public Works

**SUBJECT:** Authorization for the City Manager to Execute a Professional Services Agreement for Supervisory Control and Data Acquisition (SCADA) Programming for the Emergency Wells SCADA Installation Project

### **RECOMMENDATION**

That Council adopts the attached resolution authorizing the City Manager to execute a Professional Services Agreement with SCADA Support Group (SSG) for Supervisory Control and Data Acquisition (SCADA) programming for the Emergency Wells SCADA Installation Project in an amount not-to-exceed \$59,200.

### **BACKGROUND**

In 1994, the City implemented a Supervisory Control and Data Acquisition (SCADA) system to monitor, gather data, and assist in control of water distribution, and wastewater collection and treatment. The heart of a typical SCADA system is a computer that monitors measureable parameters such as pressure, temperature, flow rates, and the like ("sensors"); and performs operations such as turning pumps on or off, and opening and closing valves ("actuators"). A SCADA system requires special programming to translate the data received from the facilities and sensors into a readable and operable graphical interface for the water and sewer system operators.

Hayward's five emergency wells are a critical component of the City's water system and will be relied upon to provide about half the City's water supply in an emergency such as an earthquake. The wells currently are operated manually by a worker visiting the site.

### **DISCUSSION**

The purpose of this project is to design and install the necessary SCADA system and equipment for remotely operating each of the five well sites from the City's SCADA Operations Room at the Utilities Center on Soto Road. The equipment to be added to each well site generally consists of a programmable logic controller (PLC), a radio, an antenna, wiring, and a motorized operator for the valve that isolates each well from the distribution system. On March 2, 2010, Council authorized the City Manager to execute a professional services agreement with Carollo Engineers for the design and construction administration of the necessary equipment for the project.

A key component of this project is the programming of a new SCADA interface in the Utilities Operations Room to monitor and control the wells' operation. Adding the wells into the City's

SCADA system would allow the wells to be activated more quickly in an emergency, operated remotely, and allow staff to more easily monitor well operational data, such as groundwater levels, over time. The SCADA programming will be performed concurrently with the construction phase of the project, so that the remote operation of the well sites can be tested immediately after the new equipment has been installed.

Control Manufacturing Company (CMC) installed the current City SCADA System in 1994. The team that performed this work for CMC went on to form a separate company called SCADA Support Group (SSG). In June 2006, after considering proposals from various SCADA programming firms, SSG was selected for a project to upgrade equipment and update the design of the two Utilities' SCADA systems, at the Water Pollution Control Facility (WPCF) and at the Utilities Center, where the water distribution and wastewater collection facilities are monitored and controlled. SSG has a good background regarding the City's SCADA systems.

**Consultant Selection**- Staff recommends the execution of an agreement with SSG to provide SCADA programming on the Emergency Wells SCADA Installation Project. Because of the history SSG has in programming the original SCADA system in 1994, as well as the upgrades to the SCADA systems that started in 2006 and are just being completed, SSG is well qualified to perform this work.

In order to expand the list of firms that are familiar with the City's SCADA programming, staff intends to hire a firm other than SSG to do the programming of the programmable logic controllers (PLCs) at each of the five well sites. This small contract will allow a second firm to become familiar with the City's SCADA system, should SSG be unavailable for some reason in the future. The City plans to hire the firm Telstar of Concord. Telstar has been very responsive on previous work and is already somewhat familiar with the City's system, having worked on the radio portion of the City's SCADA system and having programmed the PLC of a recirculation pump for the Highland 250 reservoir.

A detailed scope of work and fee of \$47,775 have been negotiated with SSG. The not-to-exceed amount of \$59,200 for the professional services agreement will allow \$11,425 for additional services, which may be needed for SSG to spend extra time coordinating with the firm hired for PLC programming.

## **FISCAL AND ECONOMIC IMPACT**

The estimated project costs are as follows:

Design and Construction Administration Services – Carollo	\$ 73,000
SCADA Programming (SSG)	59,200
PLC Programming (Telstar)	10,800
Design Administration – City Staff	20,000
Construction Contract	250,000
Inspection and Testing	<u>12,000</u>
Total	\$425,000

The FY 2009 Capital Improvement Program (CIP) includes \$350,000 for the Emergency Wells SCADA Installation Project in the Water System Capital Improvement Fund. These funds are sufficient to allow this work. Adjustments will be proposed to the FY 2011 CIP to provide sufficient funding for the construction contract.

In addition, per an agreement between the City of Hayward and the East Bay Municipal Utility District (EBMUD), EBMUD will contribute \$50,000 towards the project as mitigation for potential impacts on the City's emergency wells from their Eastside Wellfield Project.

## **PUBLIC CONTACT**

No additional public contact is planned for the project. All work will be done inside Utilities facilities, located in industrial or commercial areas. There will be no impact on the neighbors or the public.

## **SCHEDULE**

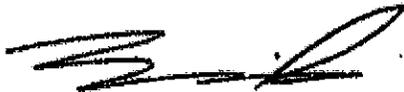
The estimated schedule for this project is summarized as follows:

Begin Design	April 2010
Complete Design and Advertise	July 2010
Award Construction Contract	September 2010
Begin Construction	September 2010
End Construction	February 2011

*Prepared by:* Alex Ameri, Deputy Director of Public Works

*Recommended by:* Robert A. Bauman, Director of Public Works

Approved by:



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Fran David, Acting City Manager

Attachment:

Attachment I: Draft Resolution

# DRAFT

HAYWARD CITY COUNCIL

RESOLUTION NO. 10-\_\_\_

Introduced by Council Member \_\_\_\_\_

RESOLUTION AUTHORIZING THE CITY MANAGER TO NEGOTIATE AND EXECUTE A PROFESSIONAL SERVICES AGREEMENT WITH SCADA SUPPORT GROUP FOR SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) PROGRAMMING FOR THE EMERGENCY WELLS SCADA INSTALLATION PROJECT, PROJECT NO. 7171

BE IT RESOLVED by the City Council of the City of Hayward that the City Manager is hereby authorized and directed negotiate and execute a Professional Services Agreement with SCADA Support Group for Supervisory Control and Data Acquisition (SCADA) programming for the Emergency Wells SCADA Installation Project, Project No. 7171 in an amount not to exceed \$59,200 in a form to be approved by the City Attorney.

IN COUNCIL, HAYWARD, CALIFORNIA \_\_\_\_\_, 2010

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST: \_\_\_\_\_  
City Clerk of the City of Hayward

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney of the City of Hayward