



# CITY OF SANTA BARBARA

## COUNCIL AGENDA REPORT

Agenda Item No. \_\_\_\_\_

File Code No.

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**DRAFT**

**AGENDA DATE:** October 1, 2013  
**TO:** Mayor and Councilmembers  
**FROM:** Water Resources Division, Public Works Department  
**SUBJECT:** Contract for Water Distribution System Modeling Services

### RECOMMENDATION:

That Council authorize the Public Works Director to execute a Professional Services contract with Carollo Engineers in the amount of ~~\$\$108,210.00~~ for Water Distribution System modeling services, and authorize the Public Works Director to approve expenditures of up to \$10,821.00 for extra services of Carollo Engineers that may result from necessary changes in the scope of work.

### DISCUSSION:

#### BACKGROUND

The City's water system is comprised of 306 miles of water mains, 17 pressure zones, 14 reservoirs, and 12 pump stations. To assist with evaluating this complex system, a hydraulic water system model was developed in 2002. The model was updated and calibrated in 2006 for a water quality study, and then again in 2008 for maintenance. The model was created using H2OMAP water modeling software, and it reflects all the major elements in the City's water distribution system, including water mains, reservoirs, wells, pump stations, pressure reducing stations, valves, and interagency connections.

#### PROJECT DESCRIPTION

The proposed work is for Carollo Engineers (Carollo) to use the City's Geographical Information System (GIS) to update the City's water model to reflect the current water distribution pipeline network and related facilities. Carollo will also calibrate and then validate the model by comparing model data against real-time field data and the City's Supervisory Control and Data Acquisition (SCADA) data. Carollo will then convert the water model from H2OMAP software to the next generation InfoWater software to allow for seamless integration with GIS, and to enable enhanced system modeling capabilities, water quality analysis, and water main replacement planning.

Carollo will use the updated water model to analyze the water distribution system under a variety of demand and flow conditions to identify any system deficiencies, and to recommend water distribution system improvements that address water pressure, water quality, fire protection, pipe replacement and system redundancy.

Carollo will provide staff with training for using the model, and a final report describing the model updates, calibration methodology and validation results. The report will include recommendations for additional SCADA endpoints in the distribution system which would provide enhanced water system information. Carollo will also provide one year of as needed on-call support for system modeling and software training.

#### CONSULTANT SELECTION

Carollo was chosen for this work through a competitive Request for Proposal process. Seven proposals were received from engineering firms. Staff interviewed four firms whose proposals demonstrated the highest conformance with the requested scope of work. Through this process, Carollo was selected as the best consultant to perform this work. Carollo has successfully completed similar scopes of work for the City in the past.

#### BUDGET/FINANCIAL INFORMATION:

This project was anticipated, and there are adequate appropriated funds in the Water Fund for this professional consultant work. At their meeting September 9, 2013, the Board of Water Commissioners voted x-x-x to concur with staff's recommendations.

#### SUSTAINABILITY IMPACT:

An updated water distribution system model which includes the City's entire pipe network, water facilities and related appurtenances will greatly assist City staff with programming and designing system improvements in a cost-effective and efficient manner. The targeted improvements will also support long-term operation and maintenance of the City's water distribution

**PREPARED BY:** Catherine Taylor, Water System Manager/AF/cr

**SUBMITTED BY:** Christine F. Andersen, Public Works Director

**APPROVED BY:** City Administrator's Office