



# CITY OF SANTA BARBARA

## COUNCIL AGENDA REPORT

**AGENDA DATE:** January 15, 2013

**TO:** Mayor and Councilmembers

**FROM:** Engineering Division, Public Works Department

**SUBJECT:** Contract For Preliminary Design Services For Aeration Basin System Improvements, Phase 2

### **RECOMMENDATION:**

That Council authorize the Public Works Director to execute a contract, in a form approved by the City Attorney, with Brown and Caldwell in the amount of \$259,215 for preliminary design services for the Aeration Basin System Improvements Project, Phase 2, and authorize the Public Works Director to approve expenditures of up to \$25,921 for extra services of Brown and Caldwell that may result from necessary changes in the scope of work.

### **DISCUSSION:**

#### **BACKGROUND**

On June 29, 2010, Council awarded a contract to Brown and Caldwell (B&C) to prepare an Assessment Report to evaluate and develop recommendations to improve the secondary treatment process at the El Estero Wastewater Treatment Plant (El Estero). B&C, working with staff, evaluated several alternative operational approaches for improving the secondary treatment process. This review resulted in B&C's and staff's recommendation to pursue the Aeration System Improvement Project (Project).

On October 11, 2011, Council awarded a contract to B&C to prepare a Preliminary Design Report (PDR) for the Project. Since the Project will change El Estero's existing secondary treatment operating strategy from a non-nitrifying system to a nitrification/denitrification system, a PDR was needed to thoroughly evaluate and define the recommended improvements and to develop design criteria to ensure that there is a clear project definition for the final design. This operational change will improve and stabilize the secondary effluent quality and reduce the use of potable water in the production of recycled water, which will improve the overall treatment process at El Estero.

## PROJECT DESCRIPTION

During B&C's work on the PDR, hydraulic limitations were identified that inhibit the denitrification process. B&C and staff recommend replacing the existing gravity flow secondary sludge withdrawal system with a pumped secondary sludge withdrawal system. Additionally, the flow into the secondary clarifiers is not equally split, which affects these clarifiers' performance and resulting overall treatment process effluent quality. The scope of work will revise the secondary clarifiers' inlet structure to provide equal flow splitting into these clarifiers.

The proposed improvements will address El Estero's longstanding issues with highly variable secondary effluent quality, operational inflexibility and energy efficiency, while not reducing its current wastewater treatment capacity of 11 million gallons per day. The nitrification/denitrification process will produce a more stable secondary effluent, create higher quality process water for subsequent production of recycled water, and will yield a higher quality of treated effluent discharge into the Pacific Ocean.

Given the complexity of the secondary treatment process, a PDR for the Phase 2 improvements is now needed for this secondary sludge pumping and secondary clarifier flow splitting design work. The previously completed B&C Assessment Report, along with the final PDR for both Phases 1 and 2 will be used as the basis for final design work. A new competitive Request for Proposal process is planned to be used to select a separate engineering design firm for final design services for the Aeration Basin System Improvements.

## DESIGN PHASE CONSULTANT ENGINEERING SERVICES

Staff recommends that Council authorize the Public Works Director to execute a contract with B&C in the total amount of \$285,136, to prepare a PDR for the Phase 2 Project. B&C was selected through a competitive process for the Assessment Report work effort and is on the City's Pre-qualified Engineering Services List. B&C has successfully completed similar work efforts for El Estero and other wastewater treatment plants.

FUNDING

The following summarizes all estimated total Project costs:

**ESTIMATED TOTAL PROJECT COST**

Assessment Report (by Contract)	\$284,621
Project Administration (by Staff)	\$38,000
<b>Subtotal</b>	<b>\$322,621</b>
Preliminary Design Phase 1 (by Contract)	\$398,886
Preliminary Design Phase 2 (by Contract)	\$285,136
Project Administration (by Staff)	\$49,815
<b>Subtotal</b>	<b>\$733,837</b>
Estimated Cost for Final Design and Construction	\$18,500,000
<b>Subtotal</b>	<b>\$18,500,000</b>
<b>TOTAL PROJECT COST</b>	<b>\$19,556,458</b>

There are sufficient funds in the Wastewater Capital Fund to cover this professional services contract work. Currently, staff is pursuing several options to fund construction, including a low interest Clean Water State Revolving Fund loan and bonds.

This item was presented to the City's Water Commission at their meeting on December 10, 2012. The Water Commissioners voted 4-0-0 in favor of staff's recommendation.

**SUSTAINABILITY IMPACT:**

Nitrification/Denitrification will improve water quality for both recycled water production and treated effluent discharge into the Pacific Ocean.

**PREPARED BY:** Joshua Haggmark, Principal Civil Engineer/LA/sk

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

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