



Memo

3/7/2019

To: Mayor and City Council members

Upcoming engineering contract award for planned upgrades to the Southdown water plant. After analysis and modeling the tank size and associated pumps have been upgraded to handle existing and future demands prompting a needed increase to the project budget to be handled at mid-year adjustments. -Trent

To: Clay Pearson, City Manager

From: Fatema Weekly, Project Manager

CC: Jon Branson, Deputy City Manager
Trent Epperson, Assistant City Manager
Robert Upton, P.E., Director of Engineering
Skipper Jones, Assistant Director of Capital Projects

Date: March 7, 2019

Re: Pre-Award for the Southdown Plant Ground Storage Tank Replacement Project

Purpose

This memo provides information about the Southdown Plant Ground Storage Tank Replacement project and the proposed award of a design contract for the project scheduled for the March 25th Council agenda.

Background

This water well and booster pump station was originally constructed with the subdivision development prior to the area's annexation into the City. Consequently, the City inherited the two original storage tanks; 140,000 gallon bolted steel tank and a 500,000 gallon (500 k-gal) welded steel tank. The bolted steel tank has already been decommissioned due to the tank reaching the end of its useful life and showing signs of leaking. Bolted steel tanks have a shorter life span than welded steel tanks or concrete tanks, with the decommissioning of this bolted tank it leaves the site with a single 500k-gal tank to meet the current demand of nearly 1 million gallons per day. With a peaking factor of 2.0, the peak hourly demand for the service area is approximately 1.8 MGD (1,250 gpm). **As a result the well pump can run nearly continuously to maintain water availability during these peak demands.** This was confirmed based on the review of SCADA data for the Southdown WP GST Operational Levels for 2018. Extended Period Simulation (EPS) Water Modeling is being performed on the entire city wide distribution system to determine localized needs. That water model data has provided peak demand pump requirements and operational parameters for this booster pump station, which include constructing a second 500k gal ground storage tank within the plant site and adjusting pump sizes and operational sequencing to improve plant operations, reduce electrical costs and improve service to the surrounding area.

Scope of Project

Current project scope consist of the design to remove and replace the existing 140,000 gallon bolted steel ground storage tank with a new 500,000 gallon welded steel or pre-cast concrete tank and associated yard piping, permanent removal of two existing hydro-pneumatic pressure tanks, and installation of variable frequency drives (VFD) on one or more of the existing booster pump(s). Staff has recently completed negotiations with KIT Professionals, Inc. for a Professional Services contract for engineering and design services for this project.

Award:

KIT Professional Inc., was selected as the most qualified firm utilizing the City's Qualification Based Selection (QBS) process. KIT's knowledge of the City's developing water model and the plant data coming out of that effort makes this firm a front runner for this work. Subsequently in accordance with the QBS process, Staff solicited a scope of work and proposal for the project. Review of the proposal by Engineering & Projects has determined that the proposal is complete and reasonable.

Next Steps:

Staff will present the proposal to Council at the March 25th Council Meeting and recommend an approval and award of the contract for Professional Engineering Services to KIT Professionals, Inc. in the amount of \$285,105. The construction cost estimate (below) shows the project exceeding currently available CIP funding. **The original CIP scope included the removal and replacement of the ground storage tank (GST) with a lower capacity unit, however, as a result of the updated water model, the scope was revised to increase the GST size to a larger tank to accommodate peak demands.** This is due to the modifications to existing pumps and the electrical system that are required to modify plant operations for compatibility with the future surface water delivery and the distribution systems ability to meet the water peak day demand. The project budget is being modified in the mid-year budget adjustments to accommodate these requirements.

Upon approval of the Professional Engineering contract by Council, staff plans to issue a Notice to Proceed (NTP) to KIT Professionals, Inc. for April, 2019 to begin the design phase.

Design is expected to commence immediately upon receipt of the NTP with bid ready documents expected to be completed in 10 months. Construction is anticipated to have an 11 month duration period for the project.

Budget Info:

Funding Sources	Series	To Date	Future	Total Budget
System Revenue - Cash		145,000		145,000
System Revenue - Cash			800,000	800,000
Certificates of Obligation				-
General Obligation Bonds				-
General Obligation Bonds				-
W/S Revenue Bonds				-
Impact Fee - Debt				-
Other Funding Sources				-
Total Funding Sources		145,000	800,000	945,000

Expenditures	To Date	Future	Total
PER			-
Land			-
Design		285,105	285,105
Construction		2,000,000	2,000,000
Construction Management/Inspection			-
Construction Materials Testing			-
FF&E			-
Total Expenditures	-	2,285,105	2,285,105

Project Balance/Contingency	(1,340,105)*
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*Budget deficit is being addressed during the mid-year budget adjustments for CIP and the 2020 CIP.

Schedule Info:

	Base Line	Current
Design Start	April-19	April-19
Bid Start	February-20	
Construction Start	April-20	
Proposed Construction Completion	March-21	

Rain Days: N/A

PROJECT LOCATION:

VICINITY MAP



VICINITY MAP

