City of Palo Alto (ID # 11648)

City Council Staff Report

Report Type: Consent Calendar **Meeting Date: 12/7/2020**

Summary Title: Corte Madera Tank Replacement

Title: Approval of Contract Number C21175922A With Anderson Pacific Engineering Construction, Inc., in the Amount of $5,545,000 for Corte Madera Reservoir Replacement Project (WS-09000); and Authorization for the City Manager to Negotiate and Execute Related Change Orders Not-to-Exceed $554,500, for a Total Not-to-Exceed Amount of $6,099,500

From: City Manager

Lead Department: Utilities

Recommendation

Staff recommends that the Council:

1. Approve and authorize the City Manager or designee to execute the contract C21175922A with Anderson Pacific Engineering Construction, Inc., in an amount not-to-exceed $5,545,000 for the Corte Madera Reservoir Replacement (WS-09000) Capital Improvement Project; and
2. Approve and authorize the City Manager or designee to negotiate and execute one or more change orders to the contract with Anderson Pacific Engineering Construction, Inc. (APEC) for related additional but unforeseen work, which may develop during the project, the total value of which shall not exceed $554,500 or 10% of the contract amount.

The total contract not-to-exceed amount is $6,099,500, which includes contract amount of $5,545,000 and a 10% contingency of $554,500. The contract is linked here.

Background

The City of Palo Alto maintains a water system consisting of five receiving stations from San Francisco Public Utilities Commission's (SFPUC's) Hetch Hetchy aqueduct system, seven reservoirs, seven booster pumping stations, eight wells, and approximately 242 miles of water transmission and distribution mains. Corte Madera reservoir is one of the three remaining reservoirs in the system that have not been seismically rehabilitated or replaced.

Corte Madera reservoir is a 1.5 million gallon (MG) above-ground welded steel reservoir that was constructed in 1969 and is nearing the end of its useful life. Staff observed that Corte Madera Reservoir was in the worst shape of the three remaining tanks. The exterior walls are exhibiting heavy corrosion near the reservoir base, and the interior roof coating is delaminating due to the corrosion underneath it. As a result, staff has spent significantly more time and effort to maintain the water quality in the tank; for example, the reservoir flushing needs are performed weekly. The structural condition has also led to safety concerns for staff to access the roof, which has prevented regular roof inspections of the reservoir. Staff has notified the State about the missed inspections and that the City was in the process of evaluating the tank rehabilitation or replacement. Additionally, the reservoir does not meet current seismic and structural code requirements for its location. After an in-house evaluation based on previous rehabilitation projects, it was determined that it is more cost effective and will increase the number of useful years to replace the tank than to rehabilitate it.

SRT Consultants (SRT) was hired to develop a preliminary design for the replacement of the Corte Madera reservoir. SRT's analysis included a return on investment analysis between steel and concrete tank replacement. Although a steel tank typically has lower construction capital cost, it requires significantly more maintenance. The total cost of a steel tank is expected to exceed the cost of a concrete tank over its anticipated useful life. Another advantage of concrete tanks is that they tend to maintain better water quality than steel tanks due to their inherent insulating properties. Based on SRT's analysis and recommendation, it was decided to build a new, same capacity, above-ground, pre-stressed concrete reservoir. SRT's evaluation included development of a conceptual engineering report and preliminary (25%) design, as well as a budgetary level cost estimate.

Discussion

Project Description

Due to the engineering issues involved with replacement of existing reservoirs, the design/build method for this project was approved by the Utilities Director and the City Manager. The scope of work for Corte Madera Reservoir Replacement Project includes the following:

- overall project design (reservoir with appurtenances, valve vault and piping, site piping and electrical/instrumentation system)
- engineering construction support
- construction management
- demolition and excavation
- civil engineering and earthwork
- geotechnical and seismic improvements
- construction of reservoir with appurtenances (stairways, landing, ladders, mixer, concrete testing, handrailing, hatches, manways, liner and drainage system, interior piping, and overflow piping)
- construction of altitude valve and by-pass
- fence and paving
- storm drain system manhole

- site drainage
- electric distribution and lighting system
- instrumentation, controls and security system
- water sampling system
- fiber optic conduit system
- permitting
- testing

Solicitation Process

On February 19th, 2020, a Request for Proposal (RFP) was posted on PlanetBids through the City's web portal for the Corte Madera Reservoir Replacement Project. Proposals were received from two qualified firms on April 1st, 2020. Proposal cost ranged from $5,545,000 to $6,799,000 with project duration ranging from 14 months to 19 months respectively.

Summary of Solicitation Process

Proposal Title	Corte Madera Reservoir Replacement Project	
Proposal Number	RFP 175922 Design Build Services	
Proposed Length of Project	14 months	
Number of Notices sent to Vendors via City's eProcurement System (PlanetBids)	2090	
Number of Proposal packages downloaded	57	
Total Days to Respond to Proposal	41	
Pre-Proposal Meeting?	Yes (Mandatory)	
Number of Proposals Received:	2	
Bid Price Range	$5,545,00 to $6,799,000	
Company Name	Location (City, State)	Amount
Anderson Pacific Engineering Construction, Inc.	Santa Clara, California	$5,545,000
Overaa Construction	Richmond, California	$6,799,000

Staff has reviewed the two proposals and rated them based on the factors defined in Palo Alto Municipal Code Section: 2.30.410 <https://codelibrary.amlegal.com/codes/paloalto/latest/paloalto_ca/0-0-0-51990>. Anderson Pacific Engineering Construction, Inc. (APEC) was the higher-ranked proposer with a proposed cost of $5,545,000. Staff contacted other agencies pre-COVID and post-COVID that had constructed similar tanks and compared the cost. After adjusting for differences in scope and applying construction cost increases in recent years, the equivalent cost is between $5.8 and $7.0 million. Therefore $5.5 million to build the Corte Madera Reservoir is considered reasonable for the work being performed under current market conditions.

The proposed cost is 10% above the original engineering estimate of $5,100,000. After APEC was selected, staff negotiated with APEC on the proposed cost and project scope. Although the cost was not reduced, staff was able to negotiate the final scope with additional items.

Therefore, the difference between the proposed cost and engineering estimate is primarily due to additional scope including geotechnical improvements. The following items were added to the project scope as part of the negotiations:

- Reservoir geotechnical improvements in the form of underground piers
- Thicker reservoir concrete slab due to geotechnical improvements
- Additional concrete reinforcement due to increased concrete slab thickness
- Foundation keyway due to geotechnical improvements
- Additional excavation and backfilling due to geotechnical improvements
- Reservoir mixing system
- Reservoir interior piping
- Reservoir drainage system
- Reservoir overflow piping
- Doubling the length of fiber optic conduits installation

The contingency amount of $554,500, which equals 10 percent of the contract amount, is recommended for additional unforeseen work that may develop during the project. Additional work is common with construction projects because during construction there may be previously unknown obstructions and ground conditions that require changes in how construction will proceed, leading to change orders that may create additional costs. A contingency fund is necessary to prevent significant delays in the project to handle these unforeseen conditions. Any unspent contingency funds are returned to reserves at the end of the project.

APEC, as the Design-Build team lead, teamed up with three (3) engineering consulting companies to provide overall support for project design, engineering construction, geotechnical engineering, and electrical/instrumentation engineering design. Additionally, the team includes a subcontractor who is specialized in design and construction of pre-stressed concrete reservoirs. Staff confirmed with the Contractor's State License Board that APEC, and their listed subcontractor, have active licenses on file. Staff checked references provided by APEC for previous work performed and received positive feedback from other agencies. Staff also confirmed that both APEC and their subcontractor are registered and in good standing with the California Department of Industrial Relations (DIR). In addition, APEC has contracted with the City in the past for other Utilities capital improvement projects and has demonstrated the knowledge and ability needed to complete this project on schedule and within budget.

Resource Impact

Funds for this contract ($5,545,000) and the contingency amount of ($554,500) are available in the FY 2021 Adopted Capital Budget for the Water Fund in the Water Tank Seismic Water System Upgrades project (WS-09000). Any unspent contract or contingency funds will be returned to reserves at the end of the project.

Summary of Project Costs for Water Tank Seismic Water System Upgrades (WS-09000)

Design-Build Cost (Construction + Design)	$5,545,000

10% Contingency	$554,500
Estimated Staff Time (Includes Engineering & Inspection Time)	$831,750
TOTAL	**$6,931,250**

Policy Implications

The approval of this contract is consistent with existing City policies including the Council approved 2018 Utilities Strategic Plan (Staff Report 9022), especially the Strategic Objectives, Priority 4 Strategy 1 "Establish a proactive infrastructure replacement program, based on planned replacement before failure to support reliability and resiliency." Facing an evolving utility business environment, aging infrastructure needs, and sustainability objectives, CPAU must maintain a competitive position in the market. Remaining financially sustainable and competitive in the market while optimizing our resources is key to maintaining and enhancing our value to customers. Strategies in this Priority focus on proactively renewing and managing CPAU's infrastructure, continuously improving financial processes, enhancing infrastructure maintenance programs, defining CPAU's role in community resiliency, and achieving sustainable energy resource and water supply plans.

Stakeholder Engagement

Stakeholder engagement for this project consisted of the request for proposal process described above. No public engagement was deemed necessary.

Environmental Review

This project is categorically exempt from California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines 15302 (replacement or reconstruction of existing facilities), since the new structure will be located on the same site and have substantially the same purpose and capacity as the structure replaced.