



Legislation Details (With Text)

**File #:** 18-345      **Version:** 1      **Name:**  
**Type:** Consent Item      **Status:** Passed  
**File created:** 6/29/2018      **In control:** City Council/Public Finance and Economic Development Authority/Parking Authority  
**On agenda:** 9/4/2018      **Final action:** 9/4/2018  
**Title:** SUBJECT: Award Contract to Cardno, Inc. to Perform Engineering Evaluation of Elevated Water Tanks, Project No. 117025

**REPORT IN BRIEF**

Consider approving an agreement for professional services (structural engineering) to evaluate the condition of the elevated water tanks at Well Sites #1, #2, and #7.

**RECOMMENDATION**

City Council - Adopt a motion approving an agreement for professional services (engineering design services) with Cardno, Incorporated, in the amount of \$121,253; and, authorizing the City Manager or Assistant City Manager to execute the necessary documents.

**Sponsors:**

**Indexes:**

**Code sections:**

**Attachments:** 1. Vicinity Map, 2. Well Site #1 Tank Example -Aerial Photograph.pdf, 3. Cardno, Inc. Contract

Date	Ver.	Action By	Action	Result
9/4/2018	1	City Council/Public Finance and Economic Development Authority/Parking Authority	approved	Pass

*Report Prepared by: Joseph D. Angulo, Environmental Project Manager, Engineering*

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**ALTERNATIVES**

1. Approve, as recommended by staff; or,
2. Approve, subject to modifications as conditioned by City Council; or,
3. Refer to staff for reconsideration of specific items; or,

4. Deny.

## **AUTHORITY**

Charter of the City of Merced, Section 200, et seq.

Services with an estimated value greater than \$31,000 are made by written contract in accordance with Merced Municipal Code, Title 3 - Revenue and Finance, Chapter 3.04.

## **CITY COUNCIL PRIORITIES**

As provided for in the 2018-19 Adopted Budget

## **DISCUSSION**

The City of Merced's municipal water supply system includes elevated water tanks at Well Sites #1, #2 and #7. The tanks were installed in approximately 1917, 1951, and 1968, respectively, and range in size from 300,000 - 500,000 gallons. Generally water is pumped into the tanks from groundwater wells at the sites and thereafter gravity influences flow out of the tanks through discharge piping. Elevated water tanks serve multiple purposes with the primary being to regulate and maintain the pressure in the distribution system piping. Additional benefits include that the tanks provide an emergency source of water (storage capacity) and, in the event of a power outage, water would still flow under the influence of gravity.

In 2001, the City procured the services of CH2MHill of Redding, California, to investigate the condition of Tanks #1 and #2. The purpose of the study was to determine if the tanks were meeting system reliability needs for water flow and demand, and also analysis for earthquake risks. The study included field investigation of the tanks' structural condition and concrete footings. Both tanks exhibited cracks in the concrete footings and various degrees of rust/corrosion on the structures themselves. CH2MHill's study acknowledge that Tanks #1 and #2 construction did not conform to current standards and retrofitting would be necessary to achieve risk reduction from a seismic event. Staff do not have information that a similar evaluation has been performed on Tank #7.

At this time staff believes it is appropriate to determine the relevant costs to retrofit and maintain the three elevated tanks as necessary for current code compliance, versus demolition and removal of the structures. Due to the age of the structures the potential risks from an earthquake will only increase as the concrete footings are exposed to weathering. A comprehensive study of all three tanks is preferable since Tank #7 does not have historical documents available.

### Request-for-Proposals

Staff solicited proposals to obtain the services of a consulting firm with an appropriately licensed structural engineer. One firm submitted a proposal as of the suspense date- Cardno, Inc., of Ventura, California.

Staff requested that Cardno Inc. provide a scope-of-work to appraise the tanks' condition at the Well Sites #1, #2 and #7 and develop cost estimates for evaluation.

The Cardno, Inc. contract under consideration includes:

- Evaluating the three tanks current conditions including a visual inspection utilizing a 100-foot boom lift;
- Reviewing available documentation on Well Sites #1 and #2;
- Evaluating the condition of Tank #7's concrete footings;
- Performing a structural analysis of each tank to determine compliance with California Building Code and American Water Works Association requirements;
- Developing costs estimates to bring the tanks into compliance with the applicable requirements;
- Developing cost estimates to demolish the tanks.

The Cardno, Inc. fee proposal for completing the above tasks is for the not-to-exceed sum of \$121,253. Staff will present options for City Council consideration at a future date to determine the fate of the three tanks.

### **IMPACT ON CITY RESOURCES**

This project was established as a Capital Improvement Project and account 557-1106-637.65-00-117025 contains sufficient funding to complete the project.

### **ATTACHMENTS**

1. Vicinity Map
2. Well Site #1 Tank Example - Aerial Photograph
3. Cardno, Inc. Contract