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Title: Actions pertaining to retaining consultants for additional work related to water distribution system corrosion control treatment research and studies:
1. Approve Amendment No. 1 to the Research Agreement between the City of Fresno and Virginia Polytechnic Institute and State University in an amount not to exceed \$100,000;
2. Approve Amendment No. 1 to Consultant Agreement with Water Quality & Treatment Solutions, Inc., in an amount not to exceed \$330,000.

Sponsors: Department of Public Utilities

Indexes:

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Attachments: 1. Amendment No 1 - Virginia Tech Agreement_PartiallyExecuted.pdf, 2. 1st Amendment Water Quality and Treatment Solutions.pdf, 3. Sole Source Approval Memo.pdf

Date	Ver.	Action By	Action	Result
4/27/2017	1	City Council	approved	Pass

REPORT TO THE CITY COUNCIL

April 27, 2017

FROM: THOMAS C. ESQUEDA, Director
Department of Public Utilities

BY: GEORGEANNE WHITE, Assistant Director
Department of Public Utilities - Administration & Water Policy

SUBJECT

Actions pertaining to retaining consultants for additional work related to water distribution system corrosion control treatment research and studies:

1. Approve Amendment No. 1 to the Research Agreement between the City of Fresno and Virginia Polytechnic Institute and State University in an amount not to exceed \$100,000;
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RECOMMENDATION

Staff recommends the Council authorize the Director of Public Utilities or designee to execute Amendment No. 1 to the

Agreements previously approved by City Council on September 22, 2016, with Virginia Polytechnic Institute and State University ("Virginia Tech") and Water Quality and Treatment Solutions, Inc. ("WQTS").

EXECUTIVE SUMMARY

On September 22, 2016, as required by Administrative Order 6-19, the Fresno City Council affirmed the determination that Dr. Edwards and Dr. Snoeyink are uniquely qualified to assist the City with the discolored water investigation in NE Fresno, and the corrosion control testing required for the Southeast Surface Water Treatment Facility (SES WTF). The Department of Public Utilities has completed the first phase of research with Dr. Edwards and Dr. Snoeyink and is ready to proceed with the next phase of the research and testing.

BACKGROUND

On January 19, 2017, the U.S. Environmental Protection Agency (EPA) submitted a report to the State Water Resources Control Board (SWRCB) summarizing the findings of EPA's review of the City's water quality data for Lead and Copper Rule (LCR) compliance. In the report, the EPA confirmed "[t]he City is in compliance with the [action level] for lead 1993-2015" - which is the entire time the LCR has in effect. As the safety of the public water supply is the highest priority for the City, the City greatly appreciates the EPA providing a third-party, independent review of the City's LCR compliance data, and confirming the City's compliance with the LCR.

While the City has been compliant with state and federal LCR, and the City's water system has been optimized for reduced lead and copper corrosion, the presence of inferior galvanized pipe in NE Fresno appears to be contributing to discolored water reports from residents in NE Fresno. Both Dr. Edwards and Dr. Snoeyink have reported that galvanized pipe is a poor material choice for residential plumbing because of the imprecise and variable manufacturing processes associated with its fabrication, and many large cities and utilities across the nation have banned galvanized pipe for premise plumbing for just that reason. Accordingly, the City desires to continue working with Dr. Edwards and Dr. Snoeyink to determine the technical feasibility of implementing a water chemistry that can be applied in the City's water supply system to reduce the corrosion of inferior galvanized pipe, while remaining compliant with the state and federal lead and copper rule. While the City is not compelled by state law or federal law to provide water that addresses inferior galvanized pipe, the City does desire to research the technical feasibility of addressing such conditions.

The work with Dr. Edwards and Dr. Snoeyink has been planned to be completed in two phases. With Phase I of the work now complete, the City is prepared to initiate Phase II with the first Amendments presented to Council today in this agenda item.

Phase I Research and Study

On September 22, 2016, the Fresno City Council approved contracts with Dr. Edwards and Dr. Snoeyink to conduct additional testing and research to assist the City with the discolored water investigation in NE Fresno, and the corrosion control testing required for the Southeast Surface Water Treatment Facility (SES WTF). In cooperation with the SWRCB, City staff has been working with Dr. Edwards to conduct bench scale testing of existing water quality conditions using galvanized pipe coupons removed from residents' homes. These testing procedures provided background information on existing water quality conditions and the interaction of existing waters with residential galvanized pipe. Once the background conditions were defined, Dr. Edwards then evaluated alternative water chemistry options to assess the effects on the release of iron and zinc from galvanized pipe. Dr. Edwards has identified several water chemistry options, and those options will now be tested using Pipe Loop Testing setups. Parallel with Dr. Edwards' bench scale testing, the City has been working with Dr. Snoeyink's team to plan, design and construct a 9-rack Pipe Loop Testing setup at the NES WTF, and the assembly of the unit was substantially complete the week of March 20, 2017. The Pipe Loop Testing setups include the use of residential galvanized pipe made available to the City by residents. The Pipe Loop Testing will be conducted in cooperation with the SWRCB from approximately April 2017 to April 2018.

Phase II Research and Study

With the bench scale testing complete and the Pipe Loop Testing setups complete, the Phase I research and study efforts by Dr. Edwards and Dr. Snoeyink are now complete. The City requests authorization to proceed with Phase II research and testing with Dr. Edwards and Dr. Snoeyink.

During Phase II of the research and study work, Dr. Edwards will continue to perform bench scale studies in parallel with the Pipe Loop Testing setups. This effort will provide the City with an additional data set to validate and confirm the

findings of the Pipe Loop Testing setups. Additionally, Dr. Edwards research team will be tasked with reviewing the residential water quality testing data, water distribution testing data, water treatment plant production data, and groundwater production data to identify correlations, patterns, and trends in water quality conditions that can then be translated into operational changes in groundwater production and surface water production to positively affect the release of iron and zinc from inferior galvanized piped. This information and data analysis will be summarized for the City in the form of a technical memorandum.

During Phase II of the research and study work, Dr. Snoeyink's team will oversee and direct the operations, testing, and performance of the Pipe Loop Testing setups. The City of Fresno's Water Treatment Plant Operators will operate, troubleshoot, and maintain the Pipe Loop Testing setups on a day to day basis, to simulate water quality conditions in the water distribution system. The information and data collected by the City's Water Treatment Plant Operators will be submitted to Dr. Snoeyink's team for review and evaluation, as the water quality data is provided by the testing laboratory. Dr. Snoeyink's team will rely on the water quality data to make a determination of the effectiveness of the water quality chemistry options being tested for reducing the release of iron, zinc, lead, and copper from the Pipe Loop Testing setups. The last time a study of this nature of was conducted for the City was in 1996 and 1997 in advance of the NESWTF being placed into service. At that time, the decision was made to conduct all testing offsite from Fresno in Seattle, Washington. For this testing program, all work will be conducted in the City of Fresno by City staff so that City staff gain "hands-on" experience with assessing the impact of water chemistry on the corrosion of iron, zinc, lead, and copper.

ENVIRONMENTAL FINDINGS

Pursuant to the definition provide in the California Environmental Quality Act (CEQA) Guidelines Section 15378 these Amendments are not "projects."

LOCAL PREFERENCE

Local preference does not apply to these contracts pursuant to FMC section 4-109.

FISCAL IMPACT

These consultant agreements will not have any impact to the General Fund. Funds are available within the Water Enterprise Fund by reallocating FY 2017 appropriations for professional and technical services in the Water Division's Operating budget.

Attachments:

Amendment No. 1 to Agreement with Virginia Tech

Amendment No. 1 to Agreement for Consultant Services with WQTS

Sole Source Approval Memo