



CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: April 11, 2017

TO: Mayor and Councilmembers

FROM: Water Resources Division, Public Works Department

SUBJECT: Authorization For Execution Of Lease Agreement – Pretreatment Equipment For The Cater Water Treatment Plant

RECOMMENDATION:

That Council authorize the Public Works Director to execute a five-year lease agreement, subject to approval as to form by the City Attorney, with Premier Materials Technology, Inc., for pretreatment equipment to assist the Cater Water Treatment Plant at a monthly lease rate of \$5,014.96 or \$60,179.52 per year.

DISCUSSION:

Lauro Reservoir, located on San Roque Road, receives and holds surface water supplies from Lake Cachuma and the City's Gibraltar Reservoir (Gibraltar) for treatment at the City's Cater Water Treatment Plant (Cater). As a result of the multi-year drought, Gibraltar had been out of service for the past few years. Last summer's Rey Fire burned approximately 33,000 acres upstream of Lake Cachuma near Gibraltar. This was followed by winter storms that caused water run-off to flow through the charred watershed and into Gibraltar, completely filling it, but with water loaded with mud, ash, and charred debris. Gibraltar's water quality was so degraded that it could not be treated for drinking water using conventional methods. Unfortunately, with each additional storm and surge of runoff into Gibraltar, the particulate matter was re-suspended and additional organic material flowed into Gibraltar, which continued to delay the ability to use this valuable water supply. In March, after weeks without rainfall, the water quality in Gibraltar has improved enough to make it marginally treatable, however not without higher treatment costs and lost opportunity costs associated with having to wait to begin utilizing this water source.

The City is a member of the US Technology Approval Group (TAG), whose primary purpose is to provide an opportunity for water and wastewater utilities to collaboratively review emerging technologies. TAG members include Los Angeles Department of Water and Power, East Bay Municipal Utility District, Denver Water, Las Vegas Valley Water District, San Francisco Water Power and Sewer, and Metropolitan Water District of Southern California.

Using TAG's resources, staff investigated pretreatment technologies for improving the quality of the City's surface water supplies. Staff has located Premier Materials Technology, Inc. (Premier), which manufactures and supplies the KRIA Ionizer (Ionizer). The Ionizer creates a superoxide, also known as a hyperoxide, which is injected into the water column through micro-bubbles and negatively charges the particulates in the water, making the water more oxygen-rich. The added oxygen makes the water biologically healthier, and it also enhances particulate coagulation, which leads to improved filtration during the water treatment process.

The TAG has vetted the Ionizer and recommends it as a credible technology for cleaning bodies of water. The U.S. Army Corps of Engineers has run field tests with the Ionizer and received promising results that the Ionizer is a cost-effective pretreatment for cleaning waterways, with no added chemicals.

After further vetting and discussions with Premier, staff believe that the Ionizer is a cost-effective solution for reducing the levels of the problematic constituents (primarily organic carbon and turbidity) in water, so that the water could be used sooner after a large storm event, when water quality has been degraded from debris and ash contamination.

By placing the Ionizer at Lauro Reservoir, the raw water supply from both Gibraltar and Lake Cachuma will be pretreated to make the water more conducive to water treatment at Cater. It is anticipated that the Ionizer would also help avoid harmful algal blooms in Lauro Reservoir, and improve Cater's ability to meet the Environmental Protection Agency standards for trihalomethane levels, which can spike from the additional treatment needed to combat high levels of organic carbon in the water.

The Ionizer technology is relatively new and protected by a patent; therefore, there are no comparable products in the market place to consider as an option. Staff is recommending that a five-year lease purchase arrangement be established. If, after 12 months of operation, the Ionizer is not performing in accordance with expectations, it can be removed from service and the lease terminated. However, if the Ionizer is successful at reducing treatment costs at Cater, the device could become a permanent installation, owned by the City after the five year term of the lease, or sooner if authorized by Council.

The United States Bureau of Reclamation (USBR) owns and operates Lauro Reservoir. Staff has received permission from the USBR to install the Ionizer in Lauro Reservoir and to connect to the USBR's electrical service to support this work effort.

BUDGET/FINANCIAL INFORMATION:

The monthly lease rate of \$5,014.96 is a budgeted expense in the Water Fund for fiscal year 2017. Staff is pursuing federal disaster funding to offset these costs.

A copy of the lease agreement is available for public review in the City Clerk's Office.

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