



## **AGENDA MEMORANDUM**

Action Item for the City Council Meeting of July 26, 2016

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**DATE:** July 19, 2016

**TO:** Margie C. Rose, City Manager

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**Authorization to declare emergency and expedite procurement of goods  
and services associated with water quality**

### **CAPTION:**

Resolution declaring an emergency and expediting the procurement of goods and services necessary for water quality improvements in an amount not to exceed \$2,720,000, and authorizing the City Manager, or designee, to execute all documents necessary for these emergency procurements pursuant to State law and Article X, Section 2 of the Charter of the City of Corpus Christi.

### **PURPOSE:**

The purpose of this agenda item is to declare an emergency and authorize the City Manager or designee to expedite the procurement of materials and services associated with water quality issues.

### **BACKGROUND AND FINDINGS:**

To deal with the water boil advisory issued by TCEQ on May 13, 2016, City Manager's designee administratively authorized a small AE contract to the LNV Inc. (Engineer) who teamed with Hazen and Sawyer to conduct a thorough investigation into the City's water treatment and distribution systems.

Consequently, the City implemented alternate disinfection conversion to free chlorine in the water system and lifted the boil water advisory. The Engineer evaluated the operations and performance of the water system including various short, mid and long-term action items. The Engineers' evaluation and recommendation was to procure the following Master List of Items associated with water quality issues immediately to further optimize the system's water quality and minimize the potential future for nitrification events. The list is as follows.

Item	Estimated Cost	Description/Justification
Four Chemscan Analyzers for treated water monitoring at the O.N. Stevens Water Plant	\$150,000	The four (4) existing ammonia/monochloramine analyzers are obsolete and unreliable. Accurate and reliable analyzers are essential to establishing stable water quality as they provide plant operators with the tools needed for better monitoring and control of chlorine and ammonia. The proposed analyzers with proven reliability and monitoring capabilities for total chlorine levels are required.
Tank Mixer for Flour Bluff Elevated Storage Tank	\$40,000	Due to the location of the tank, and flow and pressure trends of the water system, it is often difficult to maintain uniform and stable chlorine residuals in the tank. A mechanical mixer is required to help establish uniform water quality in the reservoir.
Sampling Program for Elevated and Ground Storage Tanks	\$26,000	Currently, the water quality monitoring capabilities for the elevated and ground storage tanks is limited. This sampling program is required to gain a better understanding of the water quality variations in the tanks and to determine whether improved monitoring and/or mixing is needed.
Chlorine Dioxide Annual Chemical Costs	\$750,000	A new chlorine dioxide (ClO <sub>2</sub> ) system at the ONSWTP will provide a number of benefits such as reduced THM formation potential, improved control of nitrification, and reduced oxidant demand, which would result in reduced pre-chloramination dosing. The most common way of producing ClO <sub>2</sub> is by facilitating a chemical reaction between chlorine and sodium chlorite. This item addresses the anticipated annual costs associated with purchasing the sodium chlorite.
Chlorine Booster Station	\$250,000	A sodium hypochlorite storage and feed system will provide for boosting chlorine to tie up residual ammonia (FAA) at the City of Corpus Christi's Navigation Pump Station. High FAA is recognized as a common cause of nitrification in water systems. A chlorine booster station will provide the operators with the ability to reduce FAA in the distribution system.
Chlorine Dioxide System Improvements at O.N. Stevens Water Plant	\$850,000	A new chlorine dioxide system at the ONSWTP will provide a number of benefits such as reduced THM formation potential, improved control of nitrification, and reduced oxidant demand, which would result in reduced pre-chloramination dosing.
Tank Mixers for Navigation and Staples Ground Storage Tanks	\$150,000	The largest storage volumes of water in the distribution system are currently stored at Navigation and Staples Pump Stations, and as a result, water age is impacted at these locations. A mechanical mixer will provide for each tank to help maintain uniform water quality in the reservoirs.
O.N. Stevens Water Plant Pilot Model for Granular Activated Carbon	\$300,000	Managing and monitoring nitrification is only an issue for water systems using chloramines as the primary disinfectant. The City is currently investigating the feasibility of permanently switching from chloramines to free chlorine as the primary disinfectant. Prior to implementation, bench top testing and a pilot study must be performed to determine GAC performance, change out frequency of the media, and ultimately the costs and viability. This item will provide the City with a physical model of the ONSWTP which can be used for piloting and testing the GAC along with other operational and capital improvements.
Granular Activated Carbon Pilot Study	\$200,000	In addition to the Water Plant Pilot Model for Granular Activated Carbon as listed above item, this item includes the costs associated with operating and monitoring the GAC pilot for up to 6 months and a providing a report on the findings and recommendations.

**ALTERNATIVES:**

None

**OTHER CONSIDERATIONS:**

The costs listed above are based on current estimations and may vary with future actual expenses.

**CONFORMITY TO CITY POLICY:**

Conforms to City Fiscal Policy

**EMERGENCY / NON-EMERGENCY:**

Emergency

**DEPARTMENTAL CLEARANCES:**

Utilities Department

**FINANCIAL IMPACT:**

X Operating      ☐ Revenue      X Capital      ☐ Not applicable

<b>Fiscal Year 2015-2016</b>	<b>Project to Date Expenditures (CIP only)</b>	<b>Current Year</b>	<b>Future Years</b>	<b>TOTALS</b>
Operational Budget		150,000	816,000	966,000
Capital Budget		1,750,000		1,750,000
<b>Total Budget</b>		1,900,000	816,000	2,716,500
Encumbered / Expended Amount				
This item				
Future Anticipated Expenditures This Project		1,900,000	816,000	2,716,500
<b>BALANCE</b>		0	0	0

Fund(s): Water Capital Funds and Operating Funds

**RECOMMENDATION:**

City staff recommends approval of the Ordinance.

**LIST OF SUPPORTING DOCUMENTS:**

Resolution