CIP
EXPENSE DETAIL

DATE OF COUNCIL CONSIDERATION:
CONTACT DEPARTMENT(S): Austin Water Utility

SUBJECT. Authorize execution of change order #14 to the construction contract with MATOUS CONSTRUCTION, LTD., for the Hornsby Bend Biosolids Management Plant Digester Improvements and Sustainability Project in the amount of $525,709.09, for a total contract amount not to exceed $28,397,710.

CURRENT YEAR IMPACT:

Department:	**Austin Water Utility**
Project Name:	Hornsby Bend Biogas Energy Project
Fund/Department/Unit:	4570 2307 8118
Funding Source:	Commercial Paper
Current Appropriation:	5,843,500.00
Unencumbered Balance:	811,332.48
Amount of This Action:	(525,709.09)
Remaining Balance:	285,623.39
Total Amount of this Action	525,709.09

ANALYSIS / ADDITIONAL INFORMATION: The Hornsby Bend Biosolids Management Plant (BMP) is an award winning, nationally recognized environmental management and research facility, located on FM 973 east of the Colorado River. The original project approved in 2009 is one part of a larger mutually supporting set of capital improvements to implement green infrastructure at the Hornsby Bend BMP. Funding for this project was provided from a $31.8 million zero-interest loan from the Texas Water Development Board as part of the American Recovery and Reinvestment Act (ARRA). The original project will significantly reduce the plant's carbon footprint by improving plant wide energy efficiency and reliability, reducing the use of petroleum based polymers, and enhance production and capture of digester gas, a renewable energy source that will be used to generate electricity. The original contract has provided improvements to the Flow Equalization Basin, Blend Tank mixing, Gravity Belt Thickeners, Process Building ventilation, Digester and Sludge-Holding Basin cleaning and repairs, Process Flow Measurement, gas collection, flares, and iron feed system for odor control. Overall, the proposed improvements are expected to benefit the citizens and rate payers in savings in debt service, by optimizing current process to reduce energy consumption and substantially increase the production of digester gas a renewable energy source. The increased digester gas production from this contract will serve as fuel for a combined heat and power facility that is being implemented in a separate project.

This change order to the original contract is the result of a recent emergency incident at Hornsby Bend. In December 2012, unrelated to the ongoing construction, a pipe carrying digested sludge (manually operated pressure system) exceeded pressure limits and burst in the Govalle Complex Basement Mechanical room causing significant damage to both existing systems as well as new equipment installed as part of this contract. This created an emergency and dangerous condition in the basement which flooded the basement with approximately one million gallons of sludge and severely damaged the majority of equipment housed in the basement. The basement contained the sludge, but after the sludge was pumped from the basement, the extent of the damage was determined. This change order request is based on the result of an assessment conducted on the facility after sludge was pumped from the basement. The AWU requests this additional work to be authorized to address repair and replacement of equipment damaged by the flood, to restore safe working conditions, and to install preventative equipment to protect against future flooding.

The Govalle Complex Basement will be cleaned to remove dried sludge from basement walls, piping, floors, pumps and equipment. Electrical repairs will be made, including; replacing damaged work area lighting, safety switches & disconnects, sensors & instruments and damaged panels. The gas detection system and electric-operated valve actuators damaged by the flood will be removed and replaced. These valves are used to automate the sludge feed into the digesters. Piping and heat exchanger insulation damaged by basement flooding will also be replaced. The efficiency of the heat exchanger is compromised by lack of insulation and creates safety issues resulting from exposed hot water piping. The hot water flow meter which manages the four heat exchanger water recirculation pumps damaged in the flood must be replaced and will be upgraded to a unit with more efficient control. Air relief valves, three-way valve, and compressor/dryer damaged by flooding will be replaced. These valves control hot water recirculation sent to the heat exchangers to maintain sludge temperature for volatile solids destruction and for methane gas production ultimately used as the fuel source for the biogas generator. A rupture disk/thrust restraint will be added as a preventative measure so the system has redundancy in the pressure relief system to avoid a future flood.

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