

**COUNCIL ACTION FORM**

**SUBJECT: ENGINEERING SERVICES FOR THE WATER POLLUTION CONTROL FACILITY DIGESTER GAS UTILIZATION STUDY**

**BACKGROUND:**

The Ames Water Pollution Control Facility (WPCF) utilizes three cogeneration engines to convert methane gas into electricity that helps power the plant. Each cogeneration engine drives a generator that is connected to the plant's electrical grid via automatic switchgear. Heat recovered from the cogeneration engines is used to heat the digesters to maintain anaerobic digestion.

The original cogeneration engines operated for years without any problems with routine maintenance procedures. Around 10 years after the initial installation, the maintenance costs of the cogeneration engines began to increase. Siloxanes (a class of contaminants) in the biogas have led to fouling valves and also requiring complete engine overhauls. In 2007, staff increased the frequency of oil changes which has helped to decrease maintenance costs associated with the cogeneration engines. This increase in oil changes was recommended from a study performed in 2006.

The need for an additional evaluation of the facility's digester gas handling components is being triggered by two factors. The first is the implementation of a new Fats, Oils, and Grease (FOG) control ordinance, and the resulting potential for increased gas production at the WPCF. The second is the capacity and condition of the existing engine-generator system that burns digester gas as a feedstock and produces electrical energy that is used on site and heat that is used to heat the digesters. This study will be used as a guideline for future planning and design of projects related to the solids treatment process. **A key component to this study will be to perform a rate and market study to determine what increase in FOG we can expect, and evaluate the ability of the plant to accept this anticipated increase.**

On September 20, 2016 a request for proposals (RFP) for engineering services was issued for the Digester Gas Utilization Study. On October 21, 2016, the City received two proposals in response to the RFP. Firms were asked to submit their fee proposals in separate sealed envelopes from their qualification-based proposals to allow staff to make a selection based strictly on the firms' qualifications for the project.

**After a thorough review of each firm's proposal, staff determined that Strand Associates, Inc. was the most qualified firm for the study.** Following selection of Strand Engineering, fee proposals were opened. Fee proposals for each of the firms submitting proposals for this project are listed below.

Engineering Firm	Fee Proposal
Stanley Consultants, Inc.	\$83,100
<b>Strand Associates, Inc.</b>	<b>\$58,300</b>

Staff has not worked with Strand Consultants before, but was impressed with their proposal and interest in the study. Staff is confident that Strand Consultants will provide a quality study to use for future planning purposes. The current project budget includes \$60,000 for the engineering study in the FY 16/17 Co-Generation System Maintenance CIP project.

**ALTERNATIVES:**

1. Award a contract for engineering services to Strand Associates, Inc. of Madison, Wisconsin for the WPCF Digester Gas Utilization Study in the amount not to exceed \$58,300.
2. Award the contract for engineering services to another firm.
3. Do not award a contract to Strand Associates, Inc. and do not complete the study at this time.

**MANAGER’S RECOMMENDED ACTION:**

With the implementation of the new FOG control ordinance, it is necessary to determine what increases in hauled waste staff may see at the WPCF. Additionally, staff needs to determine if the capacity and condition of the current engine-generator system will meet our future needs. This study will be used as a guideline for future planning and design of projects related to the solids and gas treatment processes.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, as stated above.