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**TO:** Board of Contracts and Awards  
**FROM:** Michael P. Slevin III, P.E., Director, Environmental Services  
John Burk, P.E., Division Manager, Science and Engineering  
**COPY:** City Council, City Manager, City Clerk, SBE Coordinator, LEAP Coordinator,  
Lance Bunch, P.E., Project Manager, and Samol Hefley, Finance/Purchasing  
**SUBJECT:** Contract Amendment No. 1 with McKinstry Essention, LLC for the Central  
Wastewater Treatment Plant Energy Management Project,  
Contract No. 4600013137 – February 4, 2020  
**DATE:** January 17, 2020

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**RECOMMENDATION SUMMARY:**

The Environmental Services Department requests approval to increase Contract No. 4600013137, an Energy Services Contract, with McKinstry Essention, LLC, Seattle, WA , by \$6,265,906.99, plus a 15 percent total project value contingency, for a cumulative total of \$12,877,682.07, plus applicable taxes, budgeted from the ES Wastewater Fund 4300, for energy management improvements at the Central Wastewater Treatment Plant.

**STRATEGIC POLICY PRIORITY:**

- Assure outstanding stewardship of the natural and built environment.
- Encourage and promote an efficient and effective government, which is fiscally sustainable and guided by engaged residents.

The bio-gas treatment facility at the Central Treatment Plant (CTP) will create renewable natural gas (RNG) vehicle fuel. Doing so will create a public benefit by reducing greenhouse gas emissions by at least 60 percent compared to diesel usage, supporting the use of renewable fuels for transportation purposes, and increasing the revenue received by the Environmental Services Department.

**BACKGROUND:**

In accordance with the 2008 Climate Action Plan and the Environmental Action Plan, the City has committed to reducing its greenhouse gas emissions. Further, the Environmental Services Department (ESD) is challenged to provide its ratepayers vital utility services at an economical price. The opportunity to reduce our greenhouse gas emissions while generating revenue through sale of a valuable product is unique.

An unavoidable by-product of treating wastewater is the production of bio-gas, which is a mixture of a variety of gases of which about 60 percent is methane. Currently the City's bio-gas is used to provide heat to some of the CTP buildings and treatment processes, and the remainder is wasted via flaring. Flaring provides no useful energy but does result in somewhat cleaner emissions compared to direct venting of the bio-gas. Staff estimates the average amount of bio-gas flared has the energy equivalent of 450 gallons of diesel per day.

When bio-gas is processed it can be used interchangeably with natural gas. According to the Environmental Protection Agency, using methane from this source will reduce greenhouse gases by at least 60 percent compared to diesel fuel or natural gas extracted from the earth. In addition,



if bio-gas is used for vehicle fuel then it is eligible for an environmental, credit (Renewable Identification Number or RIN) that provides strong economic support to the project.

This project will provide for the design and construction of the bio-gas collection, conveyance, and treatment infrastructure. This project will also provide for the design and construction of energy management related improvements to the CTP's site lighting, heating boilers, and biosolids treatment process.

This contract increase is necessary to implement additional energy management related project scope. The original scope of the project was based on planning level information and assumptions. The engineering design process uncovered new information that warranted modifications to these original project assumptions, which in turn had significant impacts on the project scope. Recent cleaning and upgrades to the CTP's digesters resulted in an increase of gas production of approximately fifty percent more digester gas than was historically produced. This additional bio-gas requires significant upsizing of the originally proposed bio-gas treatment equipment. The engineering design process also identified additional modifications to the facility's heating boilers to improve overall performance and efficiency. Additional energy efficiencies associated with heating, ventilation, and air conditioning (HVAC) were identified in three existing buildings at the CTP. This increase will allow for improvements to these energy intensive systems that are currently inefficient and beyond their design life.

**ISSUE:** Currently the CTP is flaring excess bio-gas which contributes to global warming. This wasted gas could be utilized as a resource. Additionally the CTP's hot water boilers, site lighting, biosolids treatment, and building HVAC systems are currently operating with numerous inefficiencies.

**ALTERNATIVES:** An alternative to the project is continued flaring of excess bio-gas as-is and continuing to operate energy inefficient equipment. The practice of bio-gas flaring emits pollution and provides no valuable return for the practice; and the practice of operating inefficient equipment wastes energy and resources to continually repair outdated and unreliable equipment. While this keeps the City in compliance with our air quality requirements, it is not the best option available. The recommended alternative provides the following benefits that are not provided by the current practice: reduced dependence on fossil fuels, decreased greenhouse gas emissions, decreased particulate emissions, a new revenue source, and reduced electrical consumption and equipment maintenance costs.

**COMPETITIVE SOLICITATION:**

The City is utilizing the Energy Savings Performance Contracting (ESPC) as one strategy to meet greenhouse gas reduction. The ESPC process utilizes an Energy Services Contract (ESCO) to develop and install viable efficiency measures. Through a competitive selection process (Specification No. PW10-0224F), the City selected the McKinstry Essention, LLC of Seattle, WA as the City's ESCO. This contracting is defined under RCW 39.35A and allows local government to develop and install measures that reduce energy and water consumption in a technically and financially viable manner.



CONTRACT HISTORY: This contract was originally awarded to McKinstry Essention, LLC, Seattle, WA, via Resolution No. 39927 on January 30, 2018.

SUSTAINABILITY: This driver for all components of this project are either electrical energy conservation based or reduced emissions based. The recovery and reuse of bio-gas that is currently be wasted into the atmosphere will result in a significant positive environmental effects; and the improved electrical efficiencies will help to reduce the City's carbon footprint.

SBE/LEAP COMPLIANCE: McKinstry Essention, LLC has a Small Business Enterprise (SBE) goal for this project of between 8-15 percent. The Local Employment and Apprenticeship Training Program (LEAP) goal is 15 percent.

**FISCAL IMPACT:**

This project will require the City to finance construction of the needed facilities. Debt service for these facilities will be paid by revenues derived from sale of the processed bio-gas and environmental credits. It is expected that this project will provide positive cash flow for the life of the facility.

**EXPENDITURES:**

FUND NUMBER & FUND NAME	COST OBJECT (CC/WBS/ORDER)	COST ELEMENT	TOTAL AMOUNT*
4300 Wastewater Fund	ENV-04015-08	5330100	\$7,205,793.04
<b>TOTAL</b>			<b>\$7,205,793.04</b>

\*EXCLUDING SALES TAX

**REVENUES:**

FUNDING SOURCE	COST OBJECT (CC/WBS/ORDER)	COST ELEMENT	TOTAL AMOUNT*
4300 Wastewater Fund	523900	Loans (TBD)	\$7,205,793.04
<b>TOTAL</b>			<b>\$7,205,793.04</b>

FISCAL IMPACT TO CURRENT BIENNIAL BUDGET: \$5,936,505.00, plus applicable sales tax; the remainder of the project costs will be included in the upcoming 2021-2022 Biennial Budget.

ARE THE EXPENDITURES AND REVENUES PLANNED AND BUDGETED? Yes

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