



TO: Elizabeth Pauli, City Manager
FROM: Michael P. Slevin III, P.E., Environmental Services Director
COPY: Infrastructure, Planning and Sustainability Committee; James G. Parvey, P.E., LEED AP, Environmental Services Division Manager
SUBJECT: Bio-gas Utilization Project at the Central Treatment Plant
DATE: October 11, 2017

SUMMARY:

The Office of Environmental Policy and Sustainability (OEPS) has been evaluating the feasibility, economics, and environmental benefit of processing Bio-gas (methane) generated in the waste treatment process for use as vehicle fuel. The results of the evaluation confirm that the project is feasible, economically beneficial, and will provide substantial greenhouse gas reductions. The purpose of this presentation is to provide the committee with details of the evaluation and receive direction as whether to move the project forward to the full Council.

BACKGROUND:

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 our Bio-gas is used to provide heat to the plant and the remainder is flared. Flaring provides no useful energy but does result in somewhat cleaner emissions. We estimate that the average amount of Bio-gas flared has the energy equivalent of 400 gallons of diesel per day.

When the Bio-gas is processed it can be used interchangeably with natural gas. According to the EPA, using methane from this source will reduce GHGs by at least 60 percent compared to diesel fuel or natural gas extracted from the earth. In addition, if the Bio-gas is used for vehicle fuel it is eligible for an environmental credit (Renewable Identification Number or RIN) that provides strong economic support to the project.

ISSUE:

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 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. We therefore recommend that the City move forward with processing the CTP Bio-gas into vehicle fuel.

ALTERNATIVES:

An alternative to the project is continued flaring of excess Bio-gas as is the current practice. This practice emits pollution and provides no valuable return for the practice. While this keeps us in



compliance with our air quality requirements, it is not the best option available to the City. 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, and a new revenue source.

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 pay for itself within 7 years and provide positive cash flow for the life of the facility.

RECOMMENDATION:

Based on these considerations, the Environmental Services Department recommends developing the Central Treatment Plant's Bio-gas as a vehicle fuel. This is a highly effective method of reducing the City's greenhouse gas emissions while reducing costs for the Wastewater Utility's rate payers.

With the IPS Committees approval ESD would like to bring forward contracts to implement this proposal to the City Council.