



DATE: March 11, 2019

TO: Council Sustainability Meeting

FROM: Director of Utilities & Environmental Services

SUBJECT: Update on the City's Renewable Diesel Use in Diesel Vehicle Fleet Pilot

RECOMMENDATION

That the Committee reviews and comments on this informational report.

SUMMARY

Renewable diesel is an alternative diesel fuel made from vegetable oils and animal fats which produces significantly fewer emissions than conventional diesel. The fuel has been viable in diesel vehicle fleet applications and is also associated with improved engine performance when compared to other diesel fuels. As such, the Fleet Division is currently implementing a trial period to test its use in certain vehicles within the City's fleet. If at the end of the trial period no problems are identified with the fuel's use in these vehicles, staff plan to begin replacing currently used ultra-low sulfur fuel with renewable diesel at all ten of the City's fueling stations.

BACKGROUND & DISCUSSION

At the January 14, 2019 Council Sustainability Committee meeting, staff presented a report¹ regarding the City's diesel-powered emergency backup generators and the feasibility of using more renewable sources of emergency power. In the report, staff identified renewable diesel as a fuel source that is not suitable for use in backup power applications due to its biodegradability and long-term storage concerns, but which is proven in vehicle applications and is currently being utilized by other municipalities, including the Cities of San Francisco, Oakland, and San Leandro. The carbon intensity of renewable diesel can be up to 80% lower than ultra-low sulfur diesel, which is the standard diesel option currently available on the market. Due to renewable diesel's reduced emission levels and proven use in vehicle fleets, the Committee requested that staff prepare a report regarding the feasibility of integrating renewable diesel in Hayward's vehicle fleet.

Because renewable diesel matches the chemical composition of conventional diesel, it is considered a "drop in" fuel, and can simply be added to the City's diesel tanks – no draining of

¹ <https://hayward.legistar.com/LegislationDetail.aspx?ID=3834313&GUID=04920F01-ED08-4C07-BCB3-E8036AE973A1&Options=&Search=>

the ultra-low sulfur diesel currently in these tanks is necessary. Similarly, no engine modifications need to be made in order for the vehicles to utilize the fuel.

The City's Fleet Division is currently implementing a 60- to 90-day renewable diesel trial period to test its use in City vehicles. This trial, occurring at Fire Station 1, began on Monday, February 4, 2019. Seven vehicles fill up at this station, including three fire engines, two ladder trucks, and two other vehicles. If at the end of the trial period staff do not identify any problems with the fuel's use in these vehicles, the Fleet Division plans to begin utilizing renewable diesel in all ten of the City's diesel tanks, which are located at each of the nine fire stations, as well as at the Water Pollution Control Facility. This also means that, upon full implementation, all of the City's approximately 108 diesel-powered vehicles will be utilizing renewable diesel whenever they fill up at one of the City's diesel stations. However, it is important to note that many of the City's diesel vehicles do not solely rely on fuel provided by the City's fueling stations. Many vehicles also fuel up at commercially operated stations, which only offer ultra-low sulfur diesel at this time. For this reason, few City vehicles will be operating on 100% renewable diesel 100% of the time.

ECONOMIC IMPACT

The use of renewable diesel in City vehicles will not impact the local economy.

FISCAL IMPACT

The renewable diesel being used for this trial period is provided by Neste, one of the largest global suppliers of renewable diesel. Neste also supplies renewable diesel to the Cities of San Francisco, Oakland, and San Leandro. Use of Neste's product at Fire Station 1 over a 90-day period is estimated to result in an approximately \$570 increase over what would otherwise be spent on ultra-low sulfur diesel. Full adoption of renewable diesel at all City fueling stations is estimated to raise annual bulk diesel spending from approximately \$213,300 to approximately \$220,700. Fleet staff anticipate that this \$7,400 increase in fuel costs will be made up quickly in maintenance savings, as renewable diesel burns more completely than other diesel types during the combustion process, resulting in reduced particulate emissions. Reduced particulate emissions leads to reduced particulate buildup within the engines, fewer clogs, and better engine performance.

STRATEGIC INITIATIVES

This agenda item does not directly relate to one of Council's three Strategic Initiatives.

SUSTAINABILITY FEATURES

Utilizing renewable diesel to fuel the City's diesel-powered vehicles has the potential to cut emissions associated with the City's vehicle fleet and overall carbon footprint.

NEXT STEPS

Staff will keep the Committee apprised of the results of this trial period when it concludes, as well as the timeline for full implementation, assuming the trial period does not reveal any issues with the fuel's use in City vehicles.

Prepared by: Kait Byrne, Management Analyst

Recommended by: Alex Ameri, Director of Utilities & Environmental Services

Approved by:

A handwritten signature in black ink, appearing to read "Kelly McAdoo". The signature is written in a cursive style with a large initial "K" and a long horizontal stroke extending to the right.

Kelly McAdoo, City Manager