



MANAGER'S MEMORANDUM

Prepared for: **Naperville City Council**

By: City Manager's office

11/01/2018

A. MANAGER'S MEMORANDUM

Source:
1. Public Works

Subject:
Alternative Fuels

Action:
FYI

**CITY OF NAPERVILLE
MEMORANDUM**

DATE: November 1, 2018

TO: Mayor and City Council
Doug Krieger, City Manager

FROM: Dick Dublinski, Director of Public Works

SUBJECT: Alternative Fuels

PURPOSE:

The purpose of this memorandum is to provide a history of the Department of Public Work's (DPW) research into alternative fuels.

BACKGROUND:

The City budgets \$1.2 million annually for fuel and uses an average of 490,000 gallons of unleaded gasoline and diesel to run the City's fleet of over 580 vehicles. Although fuel consumption has remained steady over the past ten years, fuel pricing has ranged from a low of \$1.64 to more than \$4 per gallon over the last ten years. The current average retail price for gasoline is \$2.88 and diesel is \$3.24. Due to the volatility of fuel pricing in 2012, DPW started researching alternative fuels for the City's fleet to minimize the fluctuation in the City's fuel budget.

Providing options for alternative fuels such as CNG could lead to substantial savings for the City in the years ahead as well as a variety of other advantages including positive environmental impacts, public-private partnership opportunities, and economic development chances that are all byproducts of this clean fuel.

DISCUSSION:

DPW's research into alternative fuels has been mainly focused on electric, propane, and Compressed Natural Gas (CNG). The first alternative fuel vehicle purchased by the City was a hybrid (electric and unleaded) in 2011. Since that time, the City has purchased 8 hybrid vehicles, 2 propane vehicles, and 3 CNG vehicles to gather data on how each type of alternative fuel vehicle performs.

Electric Vehicles

DPW initially researched electric vehicles due to Naperville's low electric rate and their availability in the marketplace. DPW has found that the technology for both hybrid and electric vehicles has been getting progressively better, more efficient, and cost effective. Although the initial purchase price of the vehicle is more than a traditionally fueled vehicle, the fuel savings over the life of the vehicle make the hybrid and electric vehicles a feasible option for the City, and we recommend these vehicles to our Departments where it makes operational sense. The CY2019 budget includes 3 electric vehicles. The estimated fuel

savings for hybrid vehicles is \$6,000 over 10 years. The estimated fuel savings for a pure electric vehicle is approximately \$16,000 over ten years.

Propane

Staff evaluated propane fueled vehicles due to the ease of implementation and potential cost savings. The City currently has 2 propane vehicles purchased in 2014 and 2016. The retail cost of propane is currently \$3.85 per gallon. DPW has found that this fuel operates seamlessly for heavy duty pick-up trucks that need more power than an electric vehicle can currently provide. At current prices, it is a more expensive fuel source and the cost of converting vehicles to propane does not make it a viable option at this time.

CNG

Beginning in 2013, staff began investigating the potential for the City to transition a portion of the fleet from oil-based fuels to compressed natural gas (CNG). CNG is methane stored at high pressure than can be used in place of gasoline or diesel. CNG produces fewer undesirable gases than gasoline or diesel and is generally less expensive. The current retail price of CNG is \$2.22 per GGE (gasoline equivalent).

In order to implement CNG for City vehicles, a filling station would be required. The cost to construct a CNG filling station is approximately three million dollars. To realize any return in investment on a CNG filling station, a minimum of 225,000 GGEs per year would need to be purchased at that site. This would require large or multiple fleets to commit to using the station for long periods of time. DPW did not want to commit to using that many GGEs per year, and began looking for private partners that could benefit from having a local filling station.

Beginning in 2014, any vehicle that the City thought could be converted to CNG were purchased factory prepared for CNG, making a conversion possible and cost effective in the future.

In August of 2015, the City issued an RFP for a design concept and proposal for the CNG station, and worked with the selected vendor to evaluate the construction and operation of a local CNG filling station that would be unmanned, open 24 hours per day, and available to the public. In 2016, the City applied for a grant through the Drive Clean Chicago's Station Grant Program for the construction of CNG filling stations. The City's CNG project was awarded the grant qualifying it for reimbursement of up to 30% of station development costs, up to \$300,000. Under the grant program, the CNG station will need to be operational by July 30, 2019.

To test the viability of using CNG vehicles for different operations, the City converted one police and two fire vehicles to CNG. To date these vehicles have performed well, and DPW intends to continue to explore the use of CNG when the station is available.

With the new contract for refuse and recycling, an opportunity for an additional fleet to enter into a long-term commitment for the a local CNG station became available. With Groot's commitment towards CNG, the construction of the filling station became viable

without the City's guarantee of any gallons towards the project. The possibility of the CNG station helped Groot give a very competitive price for the proposed new refuse and recycling contract and guarantees the City a favorable fixed price for CNG for many years. The lease for the construction of the CNG station is on the November 7, 2018 City Council agenda.

RECOMMENDATION:

Distribute this memorandum to the City Council.