

## Summary of Propane Golf Equipment Testing Program

**Background:** In July 2015, The City of Columbus partnered with R&R Products Inc. (manufacturer and parts supplier of mowing equipment) and the Propane Education and Research Council (PERC) to test propane powered mowing equipment designed for golf courses. The program offered the city the opportunity to test out propane mowing equipment for free over the course of a year in exchange for recording performance data on each mower (city provided fuel and basic maintenance). At the end of the testing period, the city has the option to purchase any of the equipment at a 55% depreciated rate.

Columbus was one of eight golf locations selected nationally to participate in this program and the only municipal course selected. Fleet Management selected the Airport Golf Course as the course to participate in this program. The city was provided with four new propane powered pieces of golf course equipment. Three of these units are used for mowing fairways and greens; the fourth piece of equipment is a sand bunker groomer.

**Results:** The fairway mower encompassed 1,162 acres of operation and used 725 gallons of fuel during the testing period. The bunker groomer operated for more than 36 hours raking sand traps and used 27 gallons of propane. One mower was dropped from the testing due to on-going mechanical issues while the fourth mower will be tested for an additional twelve months to further evaluate newly designed cutting heads.

Fuel prices fluctuated over the course of the testing period, but overall propane averaged \$.30/gallon less than diesel. The propane powered fairway mower was \$218 cheaper to operate during the testing period based on fuel use & costs compared to a diesel powered fairway mower.

According to PERC, propane reduces greenhouse gas (GHG) emissions and carbon monoxide (CO) emissions by 15 percent and 40 percent, respectively, compared to gasoline and diesel. The actual final emissions report from Columbus' program testing will be available in September of this year. Signage regarding the propane mowers and environmental benefits was posted on Airport clubhouse doors and received positive feedback from patrons.

**Recommendations:** Based on the overall results of the equipment testing and the feedback from the operators of the equipment, Fleet Management recommends that two of the fairway mowers (Reel Max 744) and one of the bunker groomer (Sand Max 521) be purchased. The propane equipment testing program was legislated and approved by City Council (Ordinance # 1120-2015). Costs are below:

Equipment	Regular unit price	Unit price with 55% program discount	Number of units	Columbus Cost w/discount	Savings
<b>Reel Max 744</b>	\$37,995	\$17,097.75	2	\$34,195.50	\$41,794.50
<b>Sand Max 521</b>	\$13,495	\$6,072.75	1	\$6,072.75	\$7,422.25
<b>Cylinders and other equipment</b>	\$29,720.85	\$13,374.38		\$13,374.38	\$16,346.47
<b>Total Costs</b>	<b>\$119,205.85</b>			<b>\$53,642.63</b>	<b>\$65,563.22</b>

Because Columbus participated in this program, the discounted rate of 55% will save the City over **\$65,563** and ensures the equipment has a one year warranty. The same type of fairway mower, a Toro, cost the city \$41,325 to purchase in 2013. The propane fueling infrastructure has been established and can remain in place. The purchase of equipment would require additional council legislation to proceed.