



**RECREATION AND CULTURE
SERVICES DEPARTMENT
CORPORATE ASSET
MANAGEMENT DEPARTMENT
MEMORANDUM**

Page: 1
File: A15-2021-
160Q
Pending #:

TO: MAYOR, J. LEHMAN AND MEMBERS OF COUNCIL

FROM: K. DATEMA, MANAGER OF RECREATION AND CULTURE FACILITIES, EXT 4799
A. WICKS, SUPERVISOR OF FLEET STRATEGY, EXT 5735

NOTED: K. OAKLEY, ASSOCIATE DIRECTOR OF CORPORATE ASSET MANAGEMENT
B. ARANIYASUNDARAN, GENERAL MANAGER, INFRASTRUCTURE AND GROWTH MANAGEMENT
D. MCALPINE, GENERAL MANAGER, COMMUNITY AND CORPORATE SERVICES
M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RE: ELECTRIC ICE RESURFACERS

DATE: SEPTEMBER 21, 2022

The purpose of this Memorandum is to inform members of Council about the purchase and implementation of two (2) new electric ice resurfacers.

Recreation and Culture Services operates a fleet of twelve (12) ice resurfacers, all of which are fueled by compressed natural gas (CNG) and internal combustion engines. As these units reach the end of their useful lifecycle and require replacement, Recreation and Culture Services, along with Corporate Asset Management, have implemented a joint strategy to be more sustainable and replace CNG units with electric units.

The City went to market to replace two (2) CNG ice resurfacers in the fall of 2021. The tender was awarded to Engo for two (2) electric ice resurfacers (Engo IceWolf). The units were received in July of 2022 and are ready for deployment for the upcoming winter season. The two (2) units will be located at the East Bayfield Community Centre.

Electric ice resurfacers have a multitude of benefits including:

- A lithium-ion battery for 100% electric operation, no fossil fuels needed;
- Zero carbon dioxide emissions equating to improved arena air quality for participants and spectators;
- Each electric ice resurfacer will eliminate approximately (17) seventeen to (19) nineteen tonnes of greenhouse gas emissions annually;
- Quiet operation, reducing ambient noise for staff and patrons;
- 30% or a \$2,000.00 reduction in maintenance cost annually for an electric unit compared to an internal combustion engine;
- 80% energy savings (fossil fuel units consume \$5,000 of fuel per year compared to \$1,000 for electricity to charge the lithium-ion battery);



**RECREATION AND CULTURE
SERVICES DEPARTMENT
CORPORATE ASSET
MANAGEMENT DEPARTMENT
MEMORANDUM**

Page: 2
File: A15-2021-
160Q
Pending #:

- Limitless battery availability due to intermediate quick charging between ice resurfacings. If the battery is at 25%, it will take approximately 1 hour to fully charge the unit; and
- The Engo Ice Wolf units come with many advanced safety features such as: emergency shutdown system, seat sensor, fully integrated diagnostic system, boltless blade change system and assisted blade level controls which reduces physical exertion required to change blades and level ice.

The cost for a fossil fuel ice resurfacers is roughly \$100,000, whereas the electric units are \$130,000. A unit lifecycle is 10-15 years based on use. Therefore, the higher initial capital cost for an electric unit is offset by lower operating and maintenance cost over the life of the unit.

The fleet replacement strategy moving forward involves replacing the remaining ten (10) compressed natural gas units when they reach the end of their useful life. This strategy is aligned with several Council endorsed initiatives, including the City's greenhouse gas emissions reduction strategy "Inspiring Climate Action in Barrie", and motion 21-G-124 which requires staff to phase out fossil fuel maintenance equipment.