

DATE: July 7, 2020

FILE: 8020-02

TO: Chair and Members
Comox Valley Sports Centre Commission

FROM: Russell Dyson
Chief Administrative Officer

Supported by Russell Dyson
Chief Administrative Officer

R. Dyson

RE: Electric Ice Resurfacer Replacement Capital Equipment Initiative

Purpose

To provide the Comox Valley Sports Centre Commission (CVSCC) with information regarding the replacement of the propane powered ice resurfacer to an electric ice resurfacer.

Recommendation from the Chief Administrative Officer:

THAT the purchase of an electric ice resurfacer continue to be supported for early 2021.

Executive Summary

This report is to provide information regarding the replacement of the propane powered ice resurfacer to an electric ice resurfacer for the Comox Valley Regional District (CVRD) Recreation Facility's ice arena 2. The Electric Ice Resurfacer will create a zero-emission atmosphere the cost will be between \$200,000 - \$240,000.

Highlights include:

- Replacement of arena 2 ice resurfacer with an electric model which will improve air quality and reduces strain on building ventilation system.
- The current propane ice resurfacer is 12 years past its life span.
- Reducing our impact on the environment and accelerating our actions to adapt and respond to climate change impacts.
- Replacement of assets in the most cost-effective manner- including all costs, risks and performance attributes.

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Concurrence:

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Background/Current Situation

At the March 2018 planning session, the CVSCC identified Asset Management – focusing on using the Asset Management process to develop the long-term plan for recreation infrastructure and sustainable service delivery, as one of five strategic priorities for the CVRD recreation department. As per the recreation facilities condition assessments and life cycle report the facilities are within their first expenditure spike, due to assets requiring replacements from reaching end of service lives.

Arena 2 ice is currently being maintained by the recreation centres twenty-two-year-old propane powered ice resurfacer (purchased in 1998). This machine has had one full engine replacement along with several part replacements over the years and is well past its life expectancy of 10-12 years. Due to the machines age, parts are becoming difficult to find and maintenance cost to keep the machine running efficiently are increasing each year.

Propane powered models range between \$130,000 – \$180,000 and are still available. Many arenas in BC are making the choice to replace their propane models with electric models. Electric models range from \$200,000 - \$240,000.

There are a number of reasons for going electric for example:

- Electric resurfacers eliminate the pollution inside the arena in the form of carbon monoxide and nitrogen dioxide. Both gases are dangerous exhaust gases given off by internal combustion engines.
- The high energy density of lithium-ion batteries provides the ability to quickly charge between resurfacings, maintaining power and eliminating the need for lengthy overnight recharging periods.
- Charge time is generally equivalent to work time. With the standard or optional extended capacity battery package the resurfacer can support a variety of arena schedules. The battery package is small and lighter weight. Zero-maintenance lithium-ion batteries are sealed and do not require watering. In addition to their improved resiliency and longer cycle life, lithium-ion batteries do not release gasses during the recharging process and are emission-free.
- Electric ice resurfacers might be more expensive than propane or natural gas-powered resurfacers. However, much of this cost difference can be offset over time by lower operating costs.

7 year operating cost estimates	Propane	Electric
Fuel	\$35,000	\$7,000
Maintenance	\$35,000	\$21,000
Battery replacement	Engine depreciation	\$15,000
Total	\$70,000	\$43,000

What needs to be factored in is the cost of battery replacement at intervals of five to seven years. Current battery costs are estimated between \$12,000-25,000 depending on the ice resurfacer brand. The rapid pace of battery development and the savings accruing from high volume production for the automotive industry, this cost might decline sharply before the need for a first replacement in perhaps six years’ time.

Costs have been allocated within the adopted recreation services 2020-2024 financial plan capital equipment, associated with the recreation facilities condition assessments and lifecycle to provide for safety and improvements to assist maximizing asset life expectancy.

Policy Analysis

The following COVID-19 response and renewal framework for the CVRD services are supported:

- Maintaining core services at an affordable cost- Careful management of recreation services and assets essential to providing affordable and reliable services to citizens in the CVRD. Ice use will be a continuing priority for the community moving forward and the current ice resurfacer is long past it's useful lifespan. It may be cheaper in the short term to purchase a propane model however other strategic drivers supporting low carbon initiatives are being met.

The following Sports Commission Strategic Plan Goal is supported:

- Strategic Goal 1- Asset Management Outcome -Utilize the Asset Management process to develop the long-term plan for recreation infrastructure and sustainable service delivery.

The following Strategic Driver is supported:

- Climate crisis and environmental stewardship and protection –outcome–As part of the Clean BC–low carbon initiative

Bylaw No. 2410, being the “Bylaw to Establish the Comox Valley Recreation Complexes Service” was adopted to establish a service for the purpose of constructing, equipping, enlarging, operating and maintaining ice arena-swimming pool complexes and to contribute towards the cost of existing community use facilities and structures in the service area. Participants in the service include the City of Courtenay, Town of Comox, Village of Cumberland and the residents of Electoral Areas ‘A’, ‘B’ and ‘C’.

Options

Purchase an electric ice resurfacer as supported in the 2020-2024 financial plan for the year 2021 with procurement commencing in the late fall and delivery expected in early 2021.

In light of COVID 19 and the opportunity to save some money a propane ice resurfacer could be considered saving approximately \$50,000 for capital improvements however the long term operating costs of the propane model are higher.

Financial Factors

April 2020 the CVRD board adopted the recreation complex function 645 2020-2024 financial plan which includes the capital equipment replacement funds of \$220,000 for an electric ice resurfacer for year 2021.

The life expectancy of an ice resurfacer can be anywhere between 10-20 years and will be dependent on a number of things such as quality of the brand, how well it has been maintained over time and if an active asset management process in place. Costs for replacing the ice resurfacer will vary between the propane and electric models.

Careful management of services and assets is essential to providing affordable and reliable services to citizens and businesses in the CVRD

Legal Factors

All propane or natural gas machines must meet the standards for emissions for indoor air quality and must be tested annually.

Regional Growth Strategy Implications

- i. Public health and safety: Support a high quality of life through the protection and enhancement of community health, safety and well-being:
- ii. Climate change: Minimize regional greenhouse gas emissions and plan for adaptation:
 - Objective 8-A: Reduce GHG emissions created by the building sector
 - Objective 8A-5: Local governments should develop GHG reduction strategies for the operations, maintenance and construction of their buildings in the Comox Valley

Intergovernmental Factors

Other facilities have recently purchased electric ice resurfacer so staff will be communicating with them to determine the electric ice resurfacer performance to help inform the procurement decision process.

Interdepartmental Involvement

Although the Recreation department has taken the lead on this initiative, the Procurement and Finance department provides input and will continue to do so as purchase of an electric ice resurfacer occurs.

Citizen/Public Relations

Together as a community, we can forge a healthier and more sustainable way of life in the Comox Valley. Using an electric ice resurfacer at our facilities is one visual way we can show how recreation services is reducing their emissions and creating a cleaner indoor atmosphere at our facilities.