

Staff Report to Council

Title: Davidson Centre Generator Replacement Project

Report Number: Parks & Facilities-2024-28

Director: Community Services

Manager: Parks & Facilities

Meeting Date:
Wednesday, November 27, 2024

Date to be considered by Council:
Wednesday, November 27, 2024

Recommendation:

That Council approve pre-budget 2025 funding for the Davidson Centre Generator Replacement Project in the amount of \$600,000 to be funded by the Lifecycle Reserve Fund.

Executive Summary:

The current generator at the Davidson Centre lacks the capacity to operate the entire facility in the event of a power outage. Presently, staff must manually switch off building systems to avoid overloading the generator. Staff are seeking pre-budget approval of this item due to its critical nature in operating building systems during power outages or emergencies, and the expected manufacturing lead time of 7 months from the date of order.

Strategic Priorities:

C.13-Protect people, property and the environment from the effects of dangerous conditions caused by people and nature

Financial Considerations:

The total project cost is expected to be \$600,000 and funded by the Lifecycle Reserve Fund. This cost is inclusive of the new generator, concrete pad improvements, electrical servicing costs and fuel servicing costs.

The proposed generator recommended by staff will have a natural gas fuel source (in lieu of the traditional diesel). Staff are currently working with the gas utility at the Davidson Centre to ensure there is adequate servicing capacity for a natural gas generator. In the event a natural gas fuel source is untenable due to the existing infrastructure, staff will procure a diesel generator of the same electrical capacity. A diesel generator would reflect a project savings of approximately \$90,000 over natural gas.

The current generator at the Davidson Centre, while undersized for its application, is still functioning. There are opportunities for staff to sell this asset as surplus if it cannot be used at another location within the Municipality.

Policy:

N/A

Context and Background Information:

The Davidson Centre currently has one generator located at the exterior of the facility which powers the building in the event of a power outage. The current generator is a 200 amp Sommers Diesel Generator that is undersized to power the entirety of the facility following the additions and replacement of the arena's ice refrigeration plant.

Due to the undersized nature of the existing generator, in the event of a power outage, staff must manually switch off several key building systems to prevent overloading the generator. These systems include the ice plant, several HVAC units, various light circuits and the arena dehumidifiers. Once these systems have been switched off, the existing generator is able to supply power to the remaining systems.

While this power outage procedure has worked for several years, it poses risks to staff and building systems, while leaving the facility only partially operational. Furthermore, as the procedure requires manual staff intervention, there is a risk that should there be an outage outside of the Davidson Centre's hours, staff will not be present to disable the required systems. In this case, the generator would automatically attempt to assume the load of the entire facility which could lead to damage of building systems as well as the generator itself.

It is important to note that the Davidson Centre may be called upon as a warming center or mustering location in the event of an emergency. Should the emergency be associated with a power outage and require people to take shelter at the facility, having limited heating/cooling systems functional could be a significant challenge to providing adequate services.

Moreover, the DC's generator also serves a purpose outside of emergency situations. Since the ice pad at the DC is in operation in the warm months of August/September, an extended power outage could threaten the ice surface without back-up power. Should the ice be compromised during a power outage, it could take up to 2 weeks to re-install the ice.

The proposed 500 kw natural gas generator will be adequately sized to support the energy demand of all the key systems at the Davidson Centre. Further, the natural gas fuel source will increase the generator's reliability and reduce risks associated with keeping the unit fueled.

Consultation Overview:

Staff have consulted with electrical contractors and generator suppliers in developing this proposal. Staff have also consulted with the Community Emergency Management Coordinator in determining the need for a generator at the Davidson Centre during a possible emergency, as well as, the most desirable fuel source during emergency situations.

Origin:

2025 Budget

Implementation Considerations:

If approved, staff expect a 7-month lead time on generator manufacturing, with the unit being installed in the summer of 2025. Staff are seeking pre-budget approval to ensure the generator will be installed and functioning ahead of the fall/winter of 2025.

Risk Analysis:

Should the current generator be left at the Davidson Centre, staff will continue to be unable to power all key facility systems during a power outage. This could lead to service deficiencies during emergency situations, loss of the ice during an extended power outage, or facility/equipment damage should the generator engage after staff hours.

Attachments: None

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