

## Staff Report

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**Report To:** Community Services Committee  
**Report From:** Ryan Gowan, Manager of Arena Operations  
**Meeting Date:** December 13, 2023  
**Report Code:** CS-23-131  
**Subject:** Bayshore and JMRRRC Hydro Usage Update

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### **Recommendations:**

THAT in consideration of Staff Report CS-23-131 respecting Bayshore and Rec Centre Hydro Usage Update, the Community Services Committee recommends that City Council receive the report for information purposes.

### **Highlights:**

- The Bayshore Community Centre saved 170,209.33 kWh in 2023 compared to 2019.
- The Julie McArthur Rec Centre saved 19,975 kWh in 2023 compared to 2019.

### **Strategic Plan Alignment:**

[Strategic Plan](#) Priority: A City that Grows - KR2 - Implement assessment based management

### **Climate and Environmental Implications:**

This supports the objectives of the City's Corporate Climate Change Adaptation Plan by strengthening the resiliency of City infrastructure or services.

## **Previous Report/Authority:**

Arena Operations Capital Update CS-22-120

## **Background:**

In September of 2022, the Community Services Committee received report CS-22-120, outlining the potential energy and cost savings from proposed upgrades to the lighting and refrigeration plant equipment at the Bayshore Community Centre and Julie McArthur Regional Recreation Centre. At that time, it was requested that a report be brought back to Committee in 2023 to update on the energy consumption reductions and savings following the completion of these upgrades.

In 2022, the report estimated that the savings from the refrigeration plant upgrades were expected to be between 15%-19%, or almost 100,000 kWh/Year. The savings were to be realized by the reduced compressor run-time hours, increased condenser size, and transition from a shell and tube chiller to a more efficient plate and frame heat exchanger. In addition to the direct energy savings, there are significant benefits to the life expectancy of the equipment with less run time and reduced maintenance costs over the life of the assets.

Additionally, the LED lighting upgrades at the Bayshore Community Centre were forecasted to generate savings of 220,000 kWh/Year and a CO<sub>2</sub>e reduction of 317,000 lbs annually. A smaller-scale LED retrofit at the Julie McArthur Regional Rec Centre was estimated to result in a yearly savings of 16,000 kWh/Year.

## **Analysis:**

For this report, the period from January to October 2019 and 2023 was selected for a detailed comparison of hydro consumption and costs. This timeframe was chosen as 2019 was the last full year the facilities were uninterrupted by COVID-19, providing a more accurate baseline for evaluating savings post upgrades.

The table below shows the annual consumption and net costs for the Bayshore and Julie McArthur Recreation Centre between those months, offering a detailed comparison. The third column provides a comparison

based on a fixed rate of \$.19 kWh, representing the Canadian average hydro rate in 2023 (excluding HST, delivery, or global adjustment).

#### Bayshore

Year	Annual kWh	Annual Cost	Cost at \$ .19/kWh
Jan - Oct 2019	1,013,040.00	\$169,718.88	\$192,477.60
Jan - Oct 2023	848,004.53	\$133,516.20	\$161,120.86

Comparatively, the Bayshore hydro consumption decreased by 170,209.33 kWh between 2019 and 2023, resulting in a net cost savings of \$36,202. The savings at the fixed rate of \$.19/kWh were slightly less at \$31,357.

#### JMRRC

Year	Annual kWh	Annual Cost	Cost at \$.19/kWh
Jan - Oct 2019	1,308,151.40	\$193,708.71	\$248,548.77
Jan - Oct 2023	1,288,176.10	\$182,681.00	\$244,753.46

Similarly, the Julie McArthur Rec Centre hydro consumption decreased by 19,975 kWh between 2019 and 2023, resulting in a small cost savings of \$11,027. At the fixed rate of \$.19/kWh, the savings would be \$3795.31.

Various factors can impact consumption between different months or years, such as temperature, humidity, ice installation/removal date, and facility use. For example, consider the impact of the Musical Ride event hosted at the Bayshore. The ice was installed at the end of August, removed two weeks later, and reinstalled in September. This would have a direct impact on the monthly hydro consumption, which would not be seen historically.

Additionally, the cost per kWh is significantly influenced by the time of use in each facility, with hydro rates being lower during off-peak hours (7 pm-7 am, evenings, and weekends) than during on-peak hours (7 am – 11 am and 5 pm- 7 pm).

While the initial project estimates may not be directly met due to these factors and hydro rate increases, there is still a significant reduction in energy consumption, resulting in cost savings and a decrease in CO2e.

## **Financial Implications:**

Over the 15 months following the completion of the capital upgrades at the Bayshore, significant savings have been achieved, totaling 304,504 kWh with an actual cost savings of \$73,987.42 or \$57,855.83 at the fixed rate of \$.19/kWh. Over that same period, at the Julie McArthur Rec Centre, consumption has been reduced by 100,043 kWh with a slight increase of \$298 in actual costs or a savings of \$19,008.12 at the average Canadian hydro rate of \$.19/kWh.

Considering the current data and factoring in a 2% annual increase in the electrical rate, there is a forecasted savings between 2023 and 2040, totaling \$745,807.72, with an expected energy reduction of 20% between the two recreation facilities.

## **Communication Strategy:**

This report to Community Services Committee.

## **Consultation:**

CIMCO Refrigeration Net Zero Studies

## **Attachments:**

None.

## **Recommended by:**

Ryan Gowan, Manager of Arena Operations

## **Submission approved by:**

Tim Simmonds, City Manager

For more information on this report, please contact Ryan Gowan, Manager of Arena Operations, at [rgowan@owensound.ca](mailto:rgowan@owensound.ca) or 519-376-3594 ext. 4222.