



Staff Report

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Report To: General Government Committee

Date of Meeting: January 10, 2022 **Report Number:** CSD-002-22

Submitted By: George Acorn, Director of Community Services

Reviewed By: Andrew C. Allison, CAO **Resolution#:**

File Number: **By-law Number:**

Report Subject: Orono Arena and Newcastle Memorial Arena Renovations

Recommendations:

1. That Report CSD-002-22 and any related communication items, be received;
2. That Council refer the proposed budget of \$6,402,000 (exclusive of debt administration costs) to the 2022 budget for consideration; and
3. That all interested parties listed in Report CSD-002-22 and any delegations be advised of Council's decision.

Report Overview

In this report, staff are seeking Council consideration, by referring this report to the 2022 budget meeting, of necessary infrastructure renovations to the Orono Arena and Community Centre and Newcastle Memorial Arena. Both facilities are over 45 years old and have not undergone any major renovation/upgrade to date.

In August 2020, an arena refrigeration engineering firm was retained to complete assessments of the arena floors, rink board systems, refrigeration plant equipment and de-humidification systems at both facilities. Based on the findings of these assessments, staff are recommending the replacement of the main components of the refrigeration system including the refrigerated arena floor, at both locations. Additionally, staff in consultation with the Boards, have identified further renovations and upgrades that should be considered at the same time.

It is recommended that the investment be made in the refrigeration infrastructure at both arenas to replace major components and extend the useful life of both facilities by 10 – 15 years. Without the necessary upgrades, the refrigeration systems, specifically the refrigeration piping in the concrete arena floors are subject to unexpected failure that could result in the shutdown of the facility and the loss of months of the ice operation season.

1. Background

- 1.1 In a previous report on the future recreation facility for Bowmanville, Report [CSD-003-21](#), staff had identified the state of the aging infrastructure at the two Board operated arenas. Both facilities were opened in the mid-1970s and although they have been well maintained over the years, there has been no major replacement of the refrigeration infrastructure at either facility.
- 1.2 In 2010, the Municipality completed a \$2.2M upgrade to the Darlington Sports Centre, which opened in 1975. The work included the replacement of the refrigerated arena floor, rink board system, refrigeration equipment as well as an interior lobby expansion and accessibility improvements. The objective of this upgrade was to extend the useful life of the facility by 15 years or to 2025, at a minimum. Based on the current condition of the building, staff are confident the facility will remain fully operational beyond 2025. It is intended that the proposed renovations in Orono and Newcastle will have the same positive impact on their useful life.
- 1.3 In August 2020, Community Services retained an independent arena engineering firm to provide an assessment of the ice rink and refrigeration systems for the Orono Arena and Community Centre (Attachment 1) and the Newcastle Memorial Arena (Attachment 2). The scope of their work included an assessment of the refrigeration plant equipment,

the refrigerated arena floors/associated piping, the rink board/glass systems, and de-humidification systems. In September 2020 we received a report for each facility that was shared with each Arena Board Chair.

- 1.4 The major findings in both reports included the recommendation to replace the ammonia chillers in both arenas. As failure of this equipment could present a hazard to both staff and the public, this work was approved in our 2021 capital budget and was completed this past summer. The reports also concluded that, based on the age of both refrigerated arena floors, a failure of the imbedded brine piping system could occur at any time. It was recommended that replacement of both floors and the associated refrigeration systems be planned for in the near term.
- 1.5 To provide some context, both arena floors are original and have been in service for over 40 years. By comparison, the floor at Darlington Sports Centre was replaced after 35 years and Pad A at the Garnet Rickard Complex was replaced after 30 years. With a median useful life of 25 – 30 years for arena floors, both have far exceeded that benchmark. A major floor failure at the start of or during an ice season could result in a loss of that ice season, with significant impact to rental revenues and recreation services to the communities.
- 1.6 Based on the existing (pre COVID-19) demand in Clarington for ice time, it is critical to keep all existing ice surfaces fully operational as the loss of one ice surface would have a major impact on the ability to provide a satisfactory level of service to our community. In fact, the current ice supply is not able to fully satisfy the current needs of our minor sport organizations and as has been previously reported, they are required to seek additional ice time outside Clarington.
- 1.7 Currently there are a total of seven arenas operating in Clarington, with five being Municipally operated. While Council has also been considering the expansion of indoor recreation for Bowmanville, including a new twin pad arena, it is important to point out this is not for planned replacement for existing facilities. The two additional ice surfaces, when constructed, will assist in satisfying the demand for ice time across Clarington, that has occurred due to current and future residential growth. This demand includes a need for additional hours for public programming (public and parent/tot skating) and minor hockey, including for the Newcastle Village Minor Hockey Association.
- 1.8 According to the 2017 Indoor Recreation Facility Development Strategy, contingent on the existing demand for ice to be sustained, any decision on the fate of our older arena facilities would not be recommended, until such time as Council approves the construction of another twin pad arena at the Diane Hamre Recreation Complex. This will require the two Board operated arenas, as well as the Darlington Sports Centre, to effectively operate until the new ice pads planned for Diane Hamre are constructed and operational.

2. Refrigeration System Assessments – Major Findings

- 2.1 These assessments were completed by I. B. Storey Inc. in August 2020. The purpose was to assess the current state of the facility in terms of ice rink operations and to make recommendations on immediate and short term required actions, suggestions on performance enhancements, and recommend a long-term capital plan to extend the useful life of the facility.
- 2.2 If this project is approved by Council, staff will undertake further investigation and non-destructive testing, after this ice season, on the various refrigeration components to prepare the specifications and final scope of the proposed upgrades.

Newcastle Memorial Arena

- 2.3 As previously mentioned, the shell and tube ammonia chiller was identified as being at the end of the median life and was susceptible to failure. Due to the potential hazard this would pose, a new chiller was installed this past summer and would not be included in the proposed refrigeration equipment upgrade.
- 2.4 The two refrigeration compressors were showing signs of wear and tear on the exterior, with one unit being beyond 20 years of age and at the end of useful life. The other newer compressor is over 50% through useful life and will need replacement, based on the observed condition, in the next 4-5 years. If the project is approved, a more detailed assessment of this compressor will be done prior to being replaced.
- 2.5 At the time of the inspection, the arena floor was 44 years of age with evidence of surface wear and tear including previous areas of concrete patching. The exposed piping in the header trench showed signs of rust and decay. At this age, the floor is susceptible to failure and was recommended for replacement in the near term.
- 2.6 Based on the condition of the rink board system, it is assumed the structure is original with partial repairs and modifications being completed over time. Significant corrosion was noted on the metal framing at the entrance to the ice surface and there was evidence of splitting and cracking of the plywood at the ice surface level. A new board and glass system is being proposed.
- 2.7 The arena is equipped with two mounted de-humidifier units. At the time of the inspection the units were not in operation and were not accessible. Based on the style of the units, which were not produced after 2007, the units were at least 13 years old in 2020. It is recommended these two units be replaced at the time of the major renovation.
- 2.8 An assessment of compliance with the CSA B52 Mechanical Refrigeration Code was also completed. This is the Regulation, adopted by the Technical Standards and Safety

Authority (TSSA), for the safe design, construction, maintenance, and operation of refrigeration systems in Ontario. Some items identified were dealt with this past summer and the remaining “grandfathered” compliance concerns will be included in the proposed project.

- 2.9 It was also observed the refrigeration system controls were out of date and, with their replacement, the refrigeration system will be able to operate more effectively and help improve ice quality at the same time as better managing energy consumption.

Orono Arena and Community Centre

- 2.10 As was the case for Newcastle Arena, the shell and tube ammonia chiller was at or near the end of the median life and, based on the observation of exposed components was showing signs of significant rusting. This chiller was also replaced this past summer and will not be included in the proposed equipment replacement plan.
- 2.11 The two refrigeration compressors were showing signs of rust on the exterior and, based on the information available, are 20 years old and at the end of their median lifecycle. The proposed project includes replacement of both compressors.
- 2.12 At the time of the inspection the arena floor was 42 years of age with some evidence of minor surface wear. At this age, the floor is well beyond the median age and is susceptible to failure and was recommended for replacement in the near term. Based on the proposed construction schedule this would occur in 2024.
- 2.13 The rink board system was installed in 1978 and for the most part is original, although it is evident that sections have been replaced. Significant corrosion was noted on the metal framing at the bench doors and the entrance to the ice surface and there was evidence of splitting and cracking of the plywood at the ice surface level. A new board and glass system is being proposed.
- 2.14 The arena is equipped with two mounted de-humidifier units. At the time of the inspection the units were not in operation and were not accessible. Subsequent to the inspection, one unit was replaced this year and the other unit is good condition. It is recommended these units be integrated in the refrigeration controls upgrade.
- 2.15 An assessment of compliance with the CSA B52 Mechanical Refrigeration Code was also completed. This is the Regulation, adopted by the Technical Standards and Safety Authority (TSSA), for the safe design, construction, maintenance, and operation of refrigeration systems in Ontario. Some items identified were dealt with this past summer and the remaining “grandfathered” compliance concerns will be included in the proposed project.

- 2.16 It was also observed the refrigeration system controls could be improved and with their replacement the refrigeration system will be able to operate more effectively and help improve ice quality at the same time as better managing energy consumption.

3. Financial Considerations

- 3.1 The Municipality has received indicative rates for serial debentures for ten years. These rates are subject to change up until the debenture is issued. Serial debentures provide equal principal payments with declining total debt costs over the term of the debt. Per discussion with the Region of Durham this is the structure they are currently utilizing for their debenture issues.
- 3.2 While the project would involve two arenas, it is recommended that they be debentured, and work completed simultaneously to reduce the cost of debt issuance.

Newcastle Memorial Arena

- 3.3 Proposed Project Budget:

Engineering & Design	307,000
Construction	3,070,000
Project Contingency	<u>307,000</u>
Total	\$3,684,000

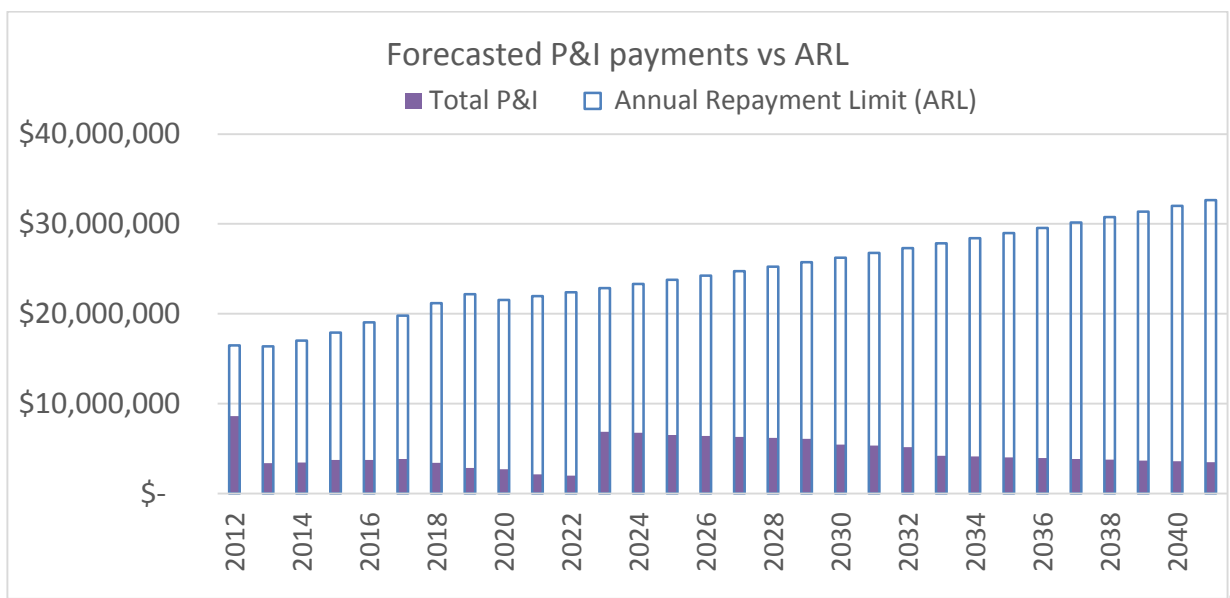
Orono Arena and Community Centre

- 3.4 Proposed Project Budget:

Engineering & Design	226,500
Construction	2,265,000
Project Contingency	<u>226,500</u>
Total	\$2,718,000

- 3.5 Staff have assumed a rate of 2.20 per cent for a 10-year debenture. The interest rate is the current indicative rate and is subject to change; a 10-year debenture is recommended as the useful life of the renovation is approximately 10-years. A debenture greater than 10-years would be against prudent fiscal planning and the current Debt Management Policy of the Municipality.
- 3.6 The total cost of debt, assuming \$6.6 million in principal to cover costs, would be approximately \$7,398,600. Interest costs would total approximately \$798,600. As this is a renovation of existing infrastructure there would be no eligibility for development charges.

- 3.7 The proposed debt, exclusive of debt required for a new facility, would not bring the Municipality near its internal debt limit. With the proposed debt of a new recreation facility, the debt servicing charge would approximate 7.5 per cent which is allowed within the Debt Management Policy of the Municipality.
- 3.8 Including proposed debt for a new facility, the annual debt servicing charges are illustrated below:



4. Proposed Project Schedule

- 4.1 Although the project budget is being requested in 2022, staff are recommending the engineering be completed this year with the renovation work being completed at Newcastle in 2023 and in Orono in 2024.
- 4.2 It is estimated the renovation work would take up to seven months to complete, which would require coordination with each Arena Board to shorten their existing spring schedule or to delay their fall re-opening.
- 4.3 Staff plan to coordinate the engineering and design work for both locations, and if possible, tender the work as one project, with two distinct construction schedules. If this can be accomplished, we may be able to attract a more competitive price for both locations.

5. Concurrence

- 5.1 This report has been reviewed by the Director of Financial Services/Treasurer who concurs with the recommendations.

6. Conclusion

- 6.1 It is respectfully recommended that Council consider this project during the deliberation of the 2022 budget. Staff do realize this is a significant investment in two older indoor arenas, however, without a planned approach to the replacement of the two refrigerated arena floors, we risk the failure of these floors that would result in the facility being non-operational for a minimum of six months. The loss of a partial or entire ice season at either arena would have a drastic impact on the supply of ice for not only the local community but the entire municipality.
- 6.2 As the proposed upgrades are intended to extend the useful life of each facility by 15 years, or beyond, it is necessary to make the investment in the refrigeration system infrastructure at this time.

Staff Contact: George Acorn, Director of Community Services, 905-623-3379 ext. 2502 or gacorn@clarington.net .

Attachments:

Attachment 1: I.B. Storey Report - Orono Arena and Community Centre

Attachment 2: I.B. Storey Report - Newcastle Memorial Arena

Interested Parties:

The following interested parties will be notified of Council's decision:

Allen Lagace, President
Orono Amateur Athletic Association

David Bouma, Chair
Newcastle Memorial Arena Management Board