



EAST ZORRA-TAVISTOCK

To: His Worship the Mayor and Members of Council
From: Will Jaques, Community and Recreation Services
Manager
Report Number: CRSM-2025-02
Subject: Tavistock and District Recreation Centre – August Ice
Meeting Date: February 5, 2025

Recommendation:

THAT Report CRSM-2025-02 be accepted by Council;

AND THAT the Township of East Zorra-Tavistock no longer provide for August (summer) ice at the Tavistock and District Recreation Centre, with ice installation to occur following the Tavistock Fall Fair.

Report:

The Township of East Zorra-Tavistock first provided for “summer ice” in 2005. While the summer ice was initially made available starting in mid-late July, for the last number of years, it has gone in near the beginning of August. As such, this report will refer to summer ice as “August ice.”

Staff completed a survey of area municipalities to determine who is putting ice in their arenas outside of the standard September to end of April ice season. Staff confirmed that, give or take a week or so, most municipalities put their ice in sometime after Labour Day in September, and remove their ice some time in April. Within geographic proximity to the Township, only a few municipalities provide ice outside of this time frame: Stratford (one ice pad operates year round), Woodstock (one ice pad operates year round), Brant County (one ice pad in Paris operates year round), Wilmot (one ice pad operates year round), and the Township of Wellesley will be operating the Wellesley ice pad starting this year, for the bulk of the month of August.

After survey results and its review of the matter, Staff are recommending that the Township no longer provide August ice on a go forward basis. This recommendation is based on facility/refrigeration plant considerations, the lack of optimal facility usage, and the overall cost to the Township in providing this service, which will all be discussed in this report.

Facility/ Refrigeration Plant Considerations:

While August ice provides a service to some of the Township's residents and the public generally, given that it is installed during the warmest time of the year, Staff have a few concerns, especially related to the design of the building and refrigeration plant:

- 1) The Tavistock Arena building structure was not designed for August ice as its walls/ceiling/floors, as well as doors and windows etc., have not been properly insulated for this purpose.
- 2) The original design of the refrigeration plant at the Tavistock Arena would most likely have calculated equipment needs and sizes (compressors, chiller, condenser etc.) based on a fall to spring heat load, which would have been based on historical outdoor temperatures at the time the facility was built. Calculations would not have considered rising outdoor temperatures generally and certainly would not have considered the installation of August ice.
- 3) Given #2, above, with the refrigeration plant required to operate under warm outdoor temperatures for August ice, it is operating beyond its design capabilities and extra stress on the plant is caused. While the refrigeration plant allows for the creation of a cold surface to create ice, the refrigeration plant is also removing heat from the building itself, which is introduced through additional outdoor heat/sun load, people entering/exiting the building and through water that is applied during the resurfacing process. Therefore, having ice in the arena when the outdoor temperature is above 20 degrees (which is common in August/early September) is extremely hard on the refrigeration plant and the various other mechanical components.

- 4) Given #3, above, while during the standard fall to spring season the refrigeration plant typically cycles on/off as the outdoor temperature cools down, during the August ice period, the equipment operates continually (even during the evening when the sun sets) to satisfy the refrigeration plant's requirements. This additional stress significantly lowers the anticipated useful lifecycle of all refrigeration plant components.

- 5) The design and functionality of the dehumidification system is also a critical consideration. Dehumidification is a required function of the refrigeration process to remove water that is trapped in the air. Poor dehumidification can lead to substandard ice conditions, building material failure and the development of mold. In addition, the proper installation of vapour barrier throughout the facility (walls, ceiling, floors etc.) is critical in reducing humidity and ultimately dehumidification loads, but also condensation forming within batt insulation. While the current dehumidification system at the Tavistock Arena is performing satisfactorily during the September to end of April ice season, issues with mold in the facility have occurred in the past with the installation of August ice. Lastly, poor dehumidification will also cause an increase in refrigeration plant run time, which will lead to increased maintenance and/or reduced useful lifecycle of the plant's components (as noted in #4, above).

Quite simply, the refrigeration plant and building were not designed for August ice, and extra run time of the system causes additional stress to the dehumidification system as well.

Usage:

Following the first summer ice season, in 2005, it appears that it was challenging to secure regular renters and as such, rental incentives were implemented to try and secure additional usage for the first few years. "Gap Ice" was a key incentive, which was well used by patrons. While little usage data is readily available between 2006 and 2021, since the Township began directly operating the Arena, usage has been less than optimal. Staff note that currently, most of the August ice is rented during daytime hours (which is also the warmest time of the day and requires the refrigeration plant to work harder) and there is little weekend usage (most rentals occur between Monday and Friday).

During the last 3 years, August ice rentals have been as follows (in hours), including major users:

RENTER	2022	2023	2024
Bartlett	16	16	0
City Hall Hockey	2	4.5	7.5
Dietz	6	6	4.5
Ertel (Hockey Camp)	30	30	30
Gibb	6	7	0
Hruden	6	0	0
Mitani	4	5	0
Myers	0	0	7
Proedge (Hockey Camp)	6	0	0
Prolific (Hockey Camp)	30	30	0
SMRC Skills	0	0	7.5
Tavistock Braves	16	17	18.5
Tavistock Royals	2	3	3.5
Tavistock Skating Club	62.5	70	66
Misc. Rentals	102	101.50	33.50
TOTAL	282.5	250	178

For Council's information, there are a total of 496 hours available to rent during the August ice period (total available ice per day is 16 hours X 31 days in August = 496 hours).

Staff note that usage has been dropping over the last 3 years, and there is no doubt many reasons for this occurring. One factor could be the reduction of incentives to increase ice rentals (i.e. "Gap Ice"). However, even if rentals do increase again to the 2022 usage levels (or even above those levels), the increased usage will still not come close to meeting with standard usage during the fall to spring ice season, which was approximately 350 hours per month during the 2023-24 season. Further, it should be noted that increasing usage by re-instituting rental incentives will only lead to the Township not receiving sufficient revenue to cover ongoing operating costs, and certainly not covering future capital repairs and equipment replacement.

Council should also keep in mind that increasing usage would lead to more people entering and exiting the building, leading to more warm outdoor air also entering the building. This would further increase the heat load in the building, and lead to more stress on the refrigeration plant and dehumidification system.

Overall Cost:

It is fully recognized that the Arena’s revenue does not outmatch its expenses (i.e. the Arena is not a revenue generator and does not “make money” for the Township) at any point in the year, especially if consideration is given to budgeting for future capital repair and equipment replacement. However, the Township’s Arena operational costs vs. revenue needs to be looked at in greater detail for the August ice period. With the annual Tavistock Fall Fair occurring in early September, there was a requirement from the very beginning in 2005 to ensure the ice surface area of the Arena remained available for Fall Fair activities. This required covering the ice surface with plywood to protect the ice, which was rented from a neighbouring municipality. Over the last number of years, the cost to the Township for covering the ice has further increased beyond the rental of the plywood floor itself, as fewer volunteers were available to assist in the placement of the floor. Instead, paid staff are now used for this purpose. Obviously if there was no August ice, there would be no requirement to cover the ice surface for the Fall Fair.

While covering the ice surface remains the major expense in the provision of August ice, there are additional expenses that would be avoided or significantly decreased if the ice were not installed. Below is a chart showing the revenue and expenses from providing summer ice over the past 3 years:

	2022	2023	2024
REVENUE*			
TOTAL	\$37,805.36	\$33,866.79	\$29,549.15
EXPENDITURES			
Staffing Costs**	141.25 hrs X \$40/hr = \$5,650	125 hrs X \$40/hr = \$5,000	89 hrs X \$40/hr = \$3,560
Additional Utilities (Hydro, Natural Gas)***	~\$5,000	~\$5,000	~\$5,000
Floor Covering (for annual Fall Fair)	\$13,100	\$13,500	\$13,900
Additional wear/tear and stress on equipment and the facility	See discussion below	See discussion below	See discussion below
TOTAL	\$23,750.00	\$23,500.00	\$22,460.00
REVENUE – EXPENDITURES	\$14,055.36 + Wear/Tear/Stress	\$10,366.79 + Wear/Tear/Stress	\$7,089.15 + Wear/Tear/Stress

*Calculation based on total ice rental revenue received during the August (summer ice) period – approximately one month. For comparative purposes, during the regular 2023-2024 September to April season, the average monthly revenue received was approximately \$40,000, with a high received of approximately \$50,000 (November and January), and a low received of approximately \$30,000 (September and April).

**Calculation based on one employee required to perform 30 minutes of work for each rental hour. Includes time dedicated solely to ice related operations (resurfacers/ on ice maintenance, cleaning dressing rooms, additional facility cleaning because of ice usage etc.). \$40/hr is based on the average cost of an employee and includes wage and benefits. Alternatively, this calculation could be viewed as the 'opportunity cost' of a staff member not being able to perform other duties as they are required to perform ice related operations.

***Calculation based on utility bills received for June and July vs. August in the respective year. Amount takes into consideration actual billing dates not being fully contained within a particular month, and that utilities are balanced out over the entire year. While firm utility costs are not known, what can be determined is that approximately \$4,000 in additional hydro and \$1,000 in additional natural gas is used at the Arena during the month of August (when there is ice) vs. the months of June and July (when there is no ice), so the estimated amount of \$5,000 does fairly represent the additional costs.

Additional Wear/Tear/Stress:

As noted in the report, operating the refrigeration plant and other mechanical components (i.e. the dehumidification system) during the warmer months provides additional wear/tear and stress on all components. This will lead to additional ongoing maintenance and a reduced lifecycle on all equipment, eventually. This is Staff's largest concern with putting in ice during the month of August. Unfortunately, it is not easily possible to financially quantify exactly what the wear/tear and stress to the system may be costing the Township. The primary issue is that the entire system has multiple components each with their own individual lifecycle values, and breaking out each value is extremely difficult.

However, as one example, there are two compressors as part of the refrigeration plant system. The two compressors have a current replacement value of \$110,000 each, a useful life of 25 years each, and must each receive an 'overhaul' service every 5 years (at a cost of approximately

\$10,000, each). It should be noted that without the overhaul service, the useful life of each compressor would be reduced substantially.

To maintain August ice, each compressor runs on average twice as many hours per day than during the regular September to April season. In 2023, for example, each compressor ran approximately 675 hours during the period of August ice (approximately 22.5 hours per day) and in the month of November that year, each compressor ran approximately 375 hours (12.5 hours per day). The total number of hours that both compressors (together) ran over the course of the entire 2023-2024 year was approximately 6900 hours, of which 1350 hours (675 hours X 2) were from August ice. As such, the August ice period represents approximately 20% of the annual total compressor usage, where the remaining 36 weeks of fall to spring ice represents the remaining 80%.

Given the above, with an expected useful life of 25 years for each compressor, broken out into hours, each compressor has a useful life of approximately 86,250 hours (3450 hours X 25 years). If the Township continues to provide August ice, we are reducing the useful life of our compressors by the above-noted 20% or 5 years. This amounts to a \$22,000 capital cost increase (\$110,000 replacement cost divided by the 25-year useful life multiplied by the 5 years reduced life expectancy.)

Again, the compressors are only one part of the whole refrigeration plant system which if required to be replaced in its entirety because of a colossal failure, would cost between \$1.5M and \$2.5M.

Conclusion:

As noted, Staff are recommending that the practice of installing August ice be discontinued. The long run cost of operating August ice, especially in consideration of the wear/tear and stress on the building and refrigeration plant, as well as premature capital replacement of the refrigeration plant components, are Staff's primary concerns with continuing to provide August ice. As noted, there are other rinks in neighbouring municipalities that do provide for ice during this period, which may be able to provide the Township's historic users with ice for their purposes, as well. Should Council concur with the recommendation, staff would advise the Township's historic August ice users of the decision as soon as possible so that if required, they may make alternate arrangements moving forward.

Financial Implications:

While there would be an immediate loss of operating revenue by not providing August ice (approximately \$7,500 per year), there would also be an offsetting reduction in the amount required to be contributed to the arena building reserve for future capital equipment and building replacement considerations from the operating expenses.

Strategic Plan Linkage:

- Financial Sustainability
- Good Governance
- Infrastructure
- Service Delivery
- Community Vitality
- Environmental Awareness

Attachments:

- None.

Report Approval Details

Document Title:	Tavistock and District Recreation Centre - August Ice.docx
Attachments:	
Final Approval Date:	Jan 30, 2025

This report and all of its attachments were approved and signed as outlined below:

Karen DePrest