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Town of Aurora

General Committee Report

No. OPS23-021

Subject: **Winter Outdoor Rink Status Update**

Prepared by: Sara Tienkamp, Director of Operations

Department: Operational Services

Date: October 3, 2023

Recommendation

1. **That Report No. OPS23-021 be received; and**
2. **That staff continue to utilize rink kits for construction of outdoor ice rinks versus traditional natural ice; and**
3. **That a full size (NHL) rink kit system be included in the 2025 Capital Budget as a placeholder for an additional outdoor rink; and**
4. **That staff present to Council in 2024 a Business Plan that considers the costs and benefits of establishing a Refrigerated Boarded Outdoor Rink.**

Executive Summary

Outdoor ice skating is a very popular activity in Canada, and some would say it makes up the fabric of what it means to be Canadian. This report provides information on Aurora's outdoor ice rinks, how they evolved to date and future opportunities to be explored:

- Natural ice rinks have been part of Aurora's winter experiences for decades.
- Changing climatic patterns present challenges for ice rink construction.
- Rink kits introduced to improve rink construction and length of time they are available to the residents during a winter season.
- Maintaining service levels of new rinks is more challenging and required additional equipment and staff time.
- Larger scale rinks a consideration for the future expansion of outdoor rink opportunities.

- Parks and Recreation Master Plan (PRMP) recommends preparing a business plan in consideration of a refrigerated outdoor rink.

Background

Natural ice rinks have been part of Aurora's winter experiences for decades.

Whether at Machell Park, Confederation Park, Town Park or in more recent years at Ada Johnson Park, ice skating on one of the Towns outdoor rinks is just part of growing up in up in Aurora.

Parks staff have been building and maintaining natural outdoor rinks since the 1960's with great success, expanding locations over the years with the help of many dedicated staff and volunteers.

Traditionally the natural ice rinks have been established by packing the snow cover (minimum 20 cm) with a roller and building a base by saturating the snow with water, allowing it to freeze for 24-48 hrs. This was followed by many successive overnight floods and scraping of ice by staff for a period of a week or more under ideal weather conditions, typically -10C or more. As a result, the residents have historically enjoyed both hockey and pleasure skating from Jan to March at four (4) park locations around Town.

Recently, due to ever changing weather patterns and the pandemic, the Town moved away from traditional natural ice construction in favour of a rink kit, inclusive of a liner and low boards to construct rinks. The Town currently has six (6) rink kits (18m x 30m) which have been in a variety of locations over the past couple of years.

Analysis

Changing climatic weather patterns present challenges for ice rink construction.

Winter weather in the Greater Toronto Area (GTA) has historically always involved some freeze/thaw periods as we sit in the Lower Great Lakes Region where weather is quite variable compared to northern regions of Ontario. It is typical for the GTA to receive a January thaw, in addition to long periods of below zero weather. More recently the weather patterns are more unpredictable and can include long stretches of mild above zero temperatures, rain, little to no snow cover or erratic up/down temperature swings. These patterns have significantly affected municipality's ability to create and sustain natural outdoor rinks for any amount of time.

Wilfrid Laurier University has been collecting data the past few years from a network of outdoor rink-makers from across Canada and the United States to study winter weather conditions and climate change.

Using daily, real-time information collected throughout the winter by the “Rink Sentinels” network, researchers found that the skating season in western Canada, especially in the northern Prairies, was long and cold, while rinks in eastern Canada and the United States didn’t freeze until mid-January and many skating ponds remained unsafe for skating throughout most of the winter. Specifically, southwestern Ontario through to New Brunswick, rink start up was later than normal and interrupted multiple times by winter thaws, something Aurora has been experiencing the last few years.

Researchers predict longer-term trends to be more variable winter conditions and average temperatures that hover closer to the freezing point, especially the lower Great Lakes region. With winters that are generally shorter and milder, and with unpredictable and variable conditions, rink-making will be a bigger challenge as milder winters continue to trend in coming decades.

Rink kits introduced to improve rink construction and length of time they are available to the residents during a winter season.

Winter of 2020 was particularly mild, and things were compounded by the start for the pandemic in March, which shut down recreation activities completely.

Parks staff were unable to build any rinks for the winter of 2019-2020 and it certainly was not because of lack of effort, weather was just not co-operative due to the variable temperatures. This was the first time the Town did not have any operational outdoor skating rinks for the residents. In fact, weather in the previous few years had presented challenges for staff in maintaining rinks for any extended period and Parks were already turning their minds to alternative delivery methods, including ice cells, liner type rinks and a potential refrigerated outdoor rink.

In late Fall of 2020, with winter top-of-mind and pandemic restrictions in place, a decision was made to utilize pandemic Safe Restart Funding to purchase winter ice rink kits, in hopes the Town could deliver skating surfaces for residents and allow for outdoor recreation within the pandemic health guidelines. Staff acquired four (4) kits and worked to install them at Town Park and Ada Johnson Park. As a result, the Town was able to provide ice from mid-January to mid-March allowing residents to enjoy much needed recreational opportunities under pandemic restrictions.

An additional two (2) rinks were purchased for the winter of 2021-2022, allowing staff to locate rinks in other areas of Town. Rink locations in 2022-2023 were as follows:

- Town Park – one (1) rink (pleasure skating)
- Machell Park – two (2) rinks (one (1) hockey, one (1) pleasure skating)
- Confederation Park – one (1) rink (pleasure skating)
- Ada Johnson Park – two (2) rinks (one (1) hockey, one (1) pleasure skating)

The size of the rink kits purchased limits mixed use, such as hockey and pleasure skating on the same surface as the space cannot be delineated as effectively as our historical natural ice rinks which were significantly larger in size. This posed safety concerns for the users and as a result staff designed specific rinks for hockey only, where two (2) rinks were co-located. This has been somewhat successful but, as it is not monitored, there are many instances when patrons wishing to play hockey utilize both rinks, causing issues for the pleasure skaters.

Since rink kits have been acquired, they have proved valuable as staff have been able to create rinks and sustain them, even though winter conditions have continued to be unstable for natural rink constriction. The liner within the rink has allowed the water in the rink to be maintained during freeze/thaw cycles and while it may melt somewhat it is able to freeze again during the next cooling period. The base layer of a natural rink once lost, requires additional snow cover and significant manpower to gain the base back for rink establishment.

On average, staff were able to have rinks open for the season in early January and ice was sustained for approximately eight (8) weeks per winter season over the last few years. The 2022-2023 winter season allowed for ice to the end of March; however, a couple rain events shut down the rinks between January to March for a few days. In comparison, in the five (5) years leading up to 2020, natural ice was active for only approximately six (6) weeks.

Maintaining service levels for new rinks is more challenging as this type of rink requires additional equipment and staff time.

Winter rink kits are a system of reinforced extruded plastic boards that interconnect to form the perimeter of the rink, this is then lined with a poly liner and anchored in place.

Construction of one (1) of these rinks is efficient, on average it takes four (4) staff, eight (8) to twelve (12) hours to construct and fill rink with water (up to one (1) week before frozen and ready for use) versus natural ice which can take six (6) to eight (8) days for

four (4) staff to construct before use. Maintenance, however, is greatly increased, and other factors require consideration for installation, compared to natural rinks. Table 1 details the requirements for the rink kits.

Table 1: Rink Kit

Rink Kits	Impacts/Cost Implications
Level surface with little to no cross slope	Grading has been necessary in some locations - $10,000
No snow base required – beneficial as snowpack not necessary to construct rink	N/A
Fencing required – depth of water a concern for safety when not frozen	No cost as fencing already in operations supply; however, if program expanded additional fencing may be required
Equipment – small snow blowers and power brooms required, traditional method of clearing natural ice rinks with a tractor/truck and blade does not work with rink kits due to size and construction method	Four (4) blowers, two (2) power brooms and one (1) tailgate lift were purchased to allow for maintenance – approximately *$35,000 spent since 2022 *covered by pandemic funding and operating budget
Replacement rink liners, board replacements (liners damage easily and require regular replacement)	$1,600/liner Approximately $7,000-10,000/year in operating costs included in operating budget
Staffing levels required to meet the *service standard has increased significantly as clearing rinks is more labour intensive *Rinks cleared and inspected six (6) hours after snowfall or following parking lots cleared	Requires four (4) staff, two (2) crews to clear and inspect the six (6) rinks – approximately six (6) hours total Natural ice required one (1) staff for approximately four (4) hours to clear the four (4) previous rinks

Larger scale rinks a consideration for the future expansion of outdoor rink opportunities.

Skating and playing hockey are a right of passage in Canada but with that comes potential conflict when the activities are confined to a shared space. Residents are quite passionate about both activities and as such, opportunities for both activities need to be provided.

The original four (4) natural ice surfaces were very large (average of 2500 m2) and offered both pleasure and hockey, delineated only by directional signage offering the opportunity for each activity on opposite ends of the ice pads. This worked for the most part with minimal issues over the years; however, when the Town switched over to the rink kits, the surface area of the ice pads decreased significantly (540 m2), giving rise to conflict and safety concerns. As a result, staff dedicated two (2) of the six (6) ice pads for hockey; however, there remains a desire for additional hockey opportunities and a larger pad that can facilitate a larger game with more players.

Potential options and costs for a full-size NHL rink (30x60 m or 1800 m2):

1. Rink kits are supplied by the same manufacturer as the kits we currently own. The cost for an NHL size rink would be approximately $42,000. It should be noted a rink this size would need a level surface for proper construction. It could be set up on an artificial turf, but this could create potential conflict with spring users for soccer etc., as the ice can take time to melt and there are no means to break it up within the rink, without potential significant damage to structure/turf. An alternative would be to grade an area for the rink specifically.

2. Gripblock (Attachment #1) is a block system that can be utilized to construct rinks. This technology can be stacked like Lego blocks and configured in many ways to suit the needs of a project. This system also has the added advantage of being useful for other purposes and could be an asset for Special Events staff and their initiatives. The cost for a rink this size would be approximately $52,000.

Staff will continue to investigate these options, potential alternative uses, appropriate location, and partnership/sponsorship opportunities in consultation with Community Services, including a project as part of the 2025 Capital Budget.

Parks and Recreation Master Plan (PRMP) recommends preparing a business plan in consideration of a refrigerated outdoor rink.

The recently updated PRMP sets a high priority on preparing a business plan as outlined in Recommendation #27:

> "Continue to maintain up to four (4) municipally operated outdoor ice-skating rinks in Town parks (plus the skating loop for Aurora Town Square) and support volunteer led rinks. Prepare a business plan to consider the costs and benefits of establishing refrigerated boarded ice rink to replace one or more natural rinks (consider locations, capital costs, operating requirements, community partnerships and more)."

In considering a refrigerated outdoor ice rink, site selection will be a critical factor as it needs to support amenities and infrastructure, typical of outdoor ice rinks, such as, washrooms/changerooms, lighting, refrigeration equipment storage, parking etc. This will require a large footprint, ideally operational efficiencies and cost savings could be achieved if a refrigerated outdoor ice rink was built in proximity to a recreation centre that currently has an existing ice surface, ice resurfacer and refrigeration plant. As part, of the Sports Field Development Strategy Update, staff are factoring in this potential future amenity into the assessment.

It is intended that staff present a comprehensive Business Plan to Council on a refrigerated ice rink in 2024.

Advisory Committee Review

Rink design and locations will be presented to the Parks and Recreation Advisory Committee and the Accessibility Advisory Committee when more detailed plans have been developed and budgets approved in the future.

Legal Considerations

The Town will be responsible for and have a duty to maintain any ice rinks that are opened by the Town and the Town could become liable for claims and injuries that result from the use of such ice rinks. Ice rinks provided by the Town need be properly maintained and monitored in accordance with the weather conditions and use patterns to mitigate the risk of injury and liability. Injuries and claim incidents resulting from use of Town ice rinks could affect the Town's insurance premium costs.

Financial Implications

The historical average operating cost per ice rink kit has been approximately $10,000 for the operation of all four (4) rink kits. These associated funds are already included in the Town's existing approved operating budget.

If endorsed by Council, staff will include a placeholder in the Town's upcoming ten (10)-year capital plan for a full size (NHL) rink kit system. If the new kit system is approved by Council, future proposed operating and capital budgets will be updated accordingly for Council's review and approval at that time.

At present, all associated capital and operating requirements relating to the construction of a Refrigerated Boarded Outdoor Rink have not been included in the proposed budget; however, upon Council endorsement of the associated business case, the Town's proposed budget will be updated accordingly.

Communications Considerations

Communications will continue to inform residents of rink availability and use via all channels including online social media and newsletters.

Climate Change Considerations

The recommendations from have a minor impact on greenhouse gas emissions as the equipment used to transport and clear off the rinks emit emissions; however, when staff review the option for a refrigerated rink for the future, green infrastructure, soft landscape, building design and green procurement will be considered as they all play an important roll mitigating the impacts of a changing climate, from air quality, stormwater management to counteracting the effects of the heat island.

Link to Strategic Plan

Outdoor ice rink facilities support the Strategic Plan Goal of Supporting an Exceptional Quality of Life for All, by encouraging an active and healthy lifestyle.

Develop a long-term needs assessment for recreation programs, services, and operations to match the evolving needs of the growing and changing population.

Alternative(s) to the Recommendation

1. Council to provided direction.

Conclusions

It is recommended that the Town continue to provide winter recreational opportunities to engage residents actively within the Town parks. Continuing to enhance and provide additional outdoor rink opportunities for pleasure skating and hockey is important as the community continues to grow and expand in future years.

Attachments

Attachment #1 – Gripblock Information

Previous Reports

None

Pre-submission Review

Agenda Management Team review on September 14, 2023.

Approvals

Approved by Sara Tienkamp, Director, Operational Services

Approved by Doug Nadorozny, Chief Administrative Officer