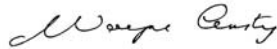


TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



Wayne Anstey, Acting Chief Administrative Officer

DATE: June 28, 2009

SUBJECT: Outdoor Refrigerated Ice Skating Rinks

ORIGIN

On December 12, 2006 Council approved the 2011 Canada Winter Games budget and authorized staff to submit the Games bid. At that time Council expressed interest in exploring the possibility of spending more money to purchase ice making equipment for the long track speed skating oval and redeploying it after the Games for an outdoor recreational skating venue.

RECOMMENDATION

It is recommended that Regional Council:

1. Approve the development of a refrigerated long track speed skating oval for the 2011 Canada Winter Games, funded through HRM's previously approved capital budget commitment to the Canada Games as per the Budget Implications section of this report, and subject to the participation of other funding partners in the purchase of three refrigerated ice plants;
2. Instruct staff to return to Council with options regarding the design and location of a regional outdoor refrigerated ice skating rink; and
3. Instruct staff to return to Council with options regarding potential locations for additional outdoor refrigerated ice skating rinks as part of the long term arena strategy.

EXECUTIVE SUMMARY

There has been long-standing public interest in constructing an outdoor ice skating rink in the urban core using refrigerated ice making equipment. When Council approved the 2011 Canada Winter Games bid, staff was asked to come back at a future date to discuss the possibility of purchasing equipment to make ice for the long track speed skating oval during the Games and redeploying this equipment after the Games for outdoor recreational skating.

Refrigerated ice making equipment can provide ice in temperatures up to approximately 10 degrees Celsius. Experience in climates similar to HRM's in southern Ontario and the north eastern United States demonstrates that it is possible to reliably provide ice for approximately 12-18 weeks annually from November to March.

The capital construction costs of outdoor refrigerated ice rinks is approximately \$1-2M depending upon whether the rink is designed to be a regional destination with dedicated amenities or a neighbourhood rink relying upon existing amenities at nearby recreation facilities. Annual gross operating costs are in the range of \$40-110,000 depending upon hours of operation, maintenance standards and staffing levels. Some revenue opportunities exist to offset the higher operating costs of a regional rink.

The 2011 Canada Games Host Society has budgeted \$700,000 to construct a temporary long track speed skating oval with natural ice on the Halifax Common. While this is an affordable solution within the Games budget, it is highly unreliable and does not leave any legacy. At recent Games in Bathurst and Corner Brook which used natural ice, the long track speed skating events were cancelled due to warm weather. A temporary long track speed skating oval using refrigerated ice making costs approximately \$2.4M, with a legacy of 4 refrigeration units worth approximately \$1.6M which can be redeployed at either indoor or outdoor rinks. While this improves the probability of running a long track speed skating event, it does not guarantee that the event will not be disrupted or cancelled by temperature, rain or snow.

It is difficult to make a business case for HRM redeploying all 4 ice making refrigeration units. A case can be made for purchasing one unit for an outdoor skating rink. The 2011 Canada Games Host Society however is working with the Province and the Recreation Facility Association of Nova Scotia to identify municipalities and community groups to purchase the remaining 3 plants. The Province would provide financial assistance through its recreation facility grant program, contingent upon the units being used initially for the Games and redeployed elsewhere in the Province in the spring of 2011. This makes the provision of a temporary refrigerated long track speed skating oval for the Games and the construction of a permanent outdoor refrigerated recreational rink in HRM feasible. Discussion are also taking place with other potential funding partners.

To date all of the essential upgrades to HRM facilities required to host the 2011 Canada Winter Games have been budgeted. Approximately \$2.2M of the Municipality's capital budget for facility upgrades to support the Games remains uncommitted. Depending upon Council's and the Canada Games Host Society's priorities, these funds can be used toward the construction of a permanent

outdoor refrigerated ice rink costing approximately \$1.75M, of which \$400,000 is the cost of one refrigerated ice making unit. Alternatively, the remaining budget can be invested in additional upgrades to HRM facilities which while desirable are not essential for hosting the Games or the budget can be held in reserve for any potential cost overruns on Games related projects in HRM's facilities. It should be noted that the funding partnerships between the Municipality, Province, Host Society and other municipalities/community groups is a unique opportunity to leverage funds and project synergies which is unlikely to occur again in the near future.

BACKGROUND

Winter Games Bid/Budget

The Canada Winter Games will take place for two weeks in February 2011. Due to the size of the oval (400m), there is no mobile refrigerated ice making systems available to rent. The Games budget therefore includes \$700,000 to create a temporary long track speed skating oval using "natural" ice. This solution has been used at past Canada Winter Games in various parts of the country. It is affordable, albeit potentially unreliable. At recent Games in Bathurst New Brunswick and Corner Brook Newfoundland, warm weather forced the cancellation of long track speed skating events on natural ice ovals.

The idea of creating at least one permanent venue using refrigerated ice making equipment for outdoor recreational ice skating has been suggested informally by the public and politicians for many years. When Council approved the Games bid and budgets, the possibility of spending additional money to purchase ice making equipment was discussed. Since the bid schedule was very tight, it was agreed that this option would be explored after the bid process. Staff committed to do further research on the possibility of purchasing refrigerated ice making equipment which could be permanently installed in one or more outdoor locations. This research includes:

- technology options;
- viability in a maritime climate;
- capital costs of the equipment;
- capital costs of site preparation;
- annual operating costs to prepare, maintain and supervise refrigerated outdoor ice skating rinks.

2011 Canada Games Host Society Role

As per the requirements of the Canada Games Council and Sport Canada, the Municipality established an arms length Host Society to plan and deliver the Games with funding from the Municipal, Provincial and Federal governments as well as the private sector. The Halifax 2011 Host Society is moving forward on implementing the Municipality's approved Canada Games bid. The Host Society is planning to construct a temporary long track speed skating oval using "natural" ice. However, if the Municipality wishes to assist in purchasing ice making equipment, the Host Society is agreeable to reallocating some of the Canada Games capital budget toward the purchase of refrigerated ice making equipment. This equipment would be used for the Games and subsequently be used for recreational ice purposes.

Municipal Role

The Municipality must determine whether the purchase of refrigerated ice making equipment is desirable, feasible, affordable and a priority. The Canada Games Host Society is not requesting additional funds for the purpose of delivering the 2011 Canada Winter Games. The option of relying upon “natural” outdoor ice for the long track speed skating oval has been incorporated into the Canada Games budget.

HRM has committed to contributing \$6.85 M toward capital costs for the Games. \$2.0 M in the form of cash and \$4.85 M in capital upgrades to existing HRM facilities to make them Games ready. \$2,234,350 of the Municipality’s \$6.85 M commitment has not been allocated to date. This is a possible source of funding which can be put toward purchasing refrigerated ice making equipment for the Games and constructing a permanent outdoor recreational ice skating venue.

DISCUSSION

Outdoor Ice Season

Toronto has the largest inventory of outdoor refrigerated ice skating rinks in the world. Toronto provides 63 refrigerated outdoor ice skating rinks in 49 locations. There are several other southern Ontario communities with between one and four outdoor refrigerated ice skating rinks (e.g., Brampton, Oakville, Mississauga, London, Kitchener-Waterloo, Burlington and Hamilton). Boston, which has a similar climate to Halifax and southern Ontario has a popular outdoor refrigerated ice skating rink located at the Frog Pond on the Boston Common. New York City’s Rockefeller Centre rink is probably the most well known refrigerated ice skating rink in New York, but there are others in Central Park and along the Hudson River (see attachments).

- Current ice making equipment permits useable recreational ice to be maintained up to approximately 10 degrees Celsius.
- Good quality ice required for high performance competitions such as the Canada Winter Games can be maintained up to approximately 4 degrees Celsius.
- The average daily winter temperature as well as average highs and lows in Toronto and southern Ontario are similar to Halifax. Halifax’s winter temperatures are in fact slightly lower on average.
- Halifax receives more winter precipitation than Toronto and southern Ontario, particularly rainfall, which negatively impacts ice maintenance.

In Toronto, the length of a season for outdoor rinks depends primarily upon two factors. The first factor, annual variability in weather is beyond the Municipality’s control. The second factor is the priority which the Municipality places upon maintenance of each rink. This is a service level decision based upon the rink’s location, prominence and usage. In general, outdoor refrigerated ice skating rinks operate:

- For between 12 and 14 weeks from late November/early December to the beginning or middle of March,
- In a high profile regional destinations (e.g., Nathan Phillip Square, the Boston Common) for up to 18 weeks; and
- Seven days a week, with daily opening times ranging from 7:00 a.m. to noon and closing between 9:00 p.m. and midnight.

Discussions with City of Toronto staff and a manufacturer of refrigerated ice making systems indicate that sun angle and brightness have more impact upon the ability to maintain quality ice than air temperature. The lower sun angle in November, close to the winter solstice (December 21), makes the creation and maintenance of outdoor ice easier than similar air temperatures in March when the sun is higher in the sky. The higher sun angles and/or clear skies cause the ice surface to absorb more heat. Wind is another variable which is more significant than air temperature. High wind speeds when the air temperature is above freezing results in greater heat transfer from the air to the ice.

It should be noted that while there is an outdoor rink at Harbourfront in Toronto, the Halifax Harbour does not provide a viable climate for making and maintaining outdoor refrigerated ice. Salt spray from the harbour effectively lowers the melting/freezing point of water and therefore makes it even more difficult to maintain useable ice. A salt water waterfront location will significantly reduce the number of useable days as well as increasing maintenance costs due to shortening the life of maintenance equipment such as zambonies.

Ice Making Equipment

The refrigerated ice making equipment which would be used for the long track speed skating oval and then redeployed elsewhere consists of four refrigeration units installed in a semi trailer. This mobile refrigeration system is similar to the system used for the recent "NHL Classic" in Chicago, except larger since a long track speed skating oval has an area equivalent to 4 NHL ice surfaces. Once the Games are over, the four units can be removed from the semi trailer and permanently installed elsewhere at either outdoor or indoor locations. While this report focuses on the option of outdoor installation, redeploying some of the equipment to existing indoor arenas which require upgraded equipment is also an option which staff have been examining. Each of the four refrigeration systems is capable of making and maintaining ice for the equivalent of an NHL size rink (85ft X 200ft, i.e. 17,000 sq. ft) in any configuration desired. As with a regular rink, pipes are used to distribute the coolant under the ice surface of the long track speed skating oval. It is not possible to reuse the pipes after the oval has been removed since they have been designed for an oval configuration and they will be inevitably damaged during tear down of the oval.

Service Standards

The majority of municipalities in southern Ontario, with one to four refrigerated outdoor ice skating rinks, use their rinks solely for recreational skating. Pick up hockey or shinny games are not

permitted. These ice surfaces are intended to provide a unique recreational opportunity for physical and social activity as well as providing a winter tourism experience for regional visitors. In addition, they address the lack of recreational skating time available at indoor arenas which are inevitably highly scheduled and structured with hockey/ringette practices, league play/tournaments and figure skating practices/competitions.

In the case of Toronto, since they have so many outdoor rinks, shinny is permitted at many of their community/neighbourhood rinks and scheduled hours are specified for recreational skates and age group shinny (e.g., atom, tweens, teens or adult). At some locations where there is greater demand for ice, recreational ice skating rinks and shinny rinks are constructed adjacent to each other to satisfy both user groups. One ice making plant is used for both rinks and the rinks are sized according to the total ice making capacity of the plant. Ice time is generally not booked or rented so that all users have access to the rinks. No organized league play is permitted.

Depending upon weather, size of ice surface and dedicated support facilities the annual operating costs for these ice surfaces range between \$40,000 - \$110,000 per year. These costs include both physical maintenance costs by Public Works staff as well as Recreation staff providing site supervision. Food services and skate rentals are usually provided by the private sector through a competitive tender process. This revenue offsets some of the operating costs. Staff does not yet know how much this revenue can be expected to be. Consistent with HRM's approach to new services and programs this additional operating cost would be added to the general tax rate when the service is introduced.

In Toronto, since there are so many rinks, the City has three service classifications for their rinks. These correspond to regional destination versus community/neighbourhood roles, length of season, maintenance standards and whether or not they have dedicated staff etc. Two specific examples of variable maintenance standards are how quickly snow is removed after a snowfall and the frequency of ice cleaning.

- Regional destination rinks have dedicated maintenance and public safety/supervision staff along with specialized and dedicated equipment (bobcats with snow blowers and/or plows and zambonies). At these facilities snow is removed immediately after a storm and the rinks generally reopen later that day or the next day. Ice clearing occurs every two hours, 5-7 times per day. Regional destination rinks are located in the urban core and are used quite a bit during the week, especially at lunch. Operating costs for such a rink are at the high end of the range provided above.
- Neighbourhood rinks rely upon a mobile crew of maintenance staff and part time site safety/supervision staff. The maintenance staff is responsible for 4-5 rinks. Clearing snow after a storm may take 1-2 days and ice cleaning occurs twice a day. These rinks are used mostly in the late afternoon after school and in the evening. Since staff and equipment service multiple locations and at a lower service level, the operating cost per rink is at the low end of the range provided above.

Community/Neighbourhood Rinks

Community/neighbourhood rinks are generally designed in a traditional hockey rink configuration with hockey boards and line markings, but not necessarily to full NHL dimensions. These are used for both recreational skating and shinny. An additional rectangular rink without boards is sometimes located next to it and is used exclusively for recreational skating. Accessory features such as benches, buildings and lighting etc. are functional and rudimentary. No programs or services are provided. These rinks tend to be located adjacent to indoor recreation facilities which provide the accessory features required by users and staff such as washrooms, lockers and equipment storage etc.

From April to November, these sites are used for a variety of purposes such as tennis and basketball courts. The distribution pipes for the coolant are installed permanently under the courts. In some locations the hockey boards are retained during the “off season” and the rinks are used for in-line skating, ball hockey and lacrosse.

Regional Destination Rinks

Regional destination rinks are found in the urban core, seldom have hockey boards and are more organic in shape rather than being the proportions of a hockey rink. More significantly however, care and attention is given to the design of all aspects of the space for daytime, night time and four-season use. This includes configuration of the rink, quality of seating, walkway materials, layout, vegetation, lighting fixtures, lighting character, sound system and design of all accessory buildings (see attachments). Enhancing the “experience of place” is emphasized. As with any significant public space it is implicit in the design of these spaces that their enhanced character as well as their prominent locations constitute a public amenity even for those people who are not actively using them. For example, a person walking past the Public Gardens or Grand Parade experiences an enhanced urban environment even if they do not enter the space.

In addition to enhanced built character, enhanced services such as skate rentals, skate sharpening, lessons and special events such as “DJ Nights” and winter festival events are often provided. Licensed mobile canteen services are often permitted nearby. The centre piece of these parks during the remaining three seasons is usually a flat bottomed reflecting pool or pond. The pool is constructed with the coolant pipes permanently installed underneath the bottom of the pool. The water level is lowered for the skating season.

Capital Costs for Rinks

The basic capital cost of refrigerated ice making equipment and a concrete pad are consistent regardless of which type of rink is constructed or where a rink is constructed, with one exception which will be discussed below.

- Cost variables are related to site preparation (e.g., bedrock, slopes and access to surrounding infrastructure). The second largest cost variable is the extent of landscaping and building construction required in conjunction with a rink.
- Community/neighbourhood rinks constructed adjacent to an existing facility can rely upon existing washrooms, equipment storage and parking etc. as well as a minimum of landscaping.

- An urban destination rink will require an accessory building on site for washrooms, attendants, and equipment. Landscaping standards will also be higher.

On the following page are some order of magnitude costs for several scenarios. Each scenario assumes an ice surface of 20,000 sq. ft (NHL size), but not necessarily in that configuration. (See columns 1 and 2 in the table below). For comparison purposes, the total cost of one new indoor rink is approximately \$12M.

In the case of a community/neighbourhood rink, there is one option in which the cost of refrigeration equipment can be reduced. This reduced cost arises if an outdoor rink is constructed adjacent to an existing indoor arena which has been designed to provide ice during the summer. (See column 3 in the table below). In this case, the peak demand upon the refrigeration equipment occurs during the summer. During the winter, the existing refrigeration equipment has excess capacity. In this case, expansion of the existing refrigeration equipment, at approximately half the cost to purchase a full system, adds sufficient capacity to add an outdoor rink.

Cost Comparison of Refrigerated Ice Rinks

	Regional Destination	Community/ Neighborhood	Community/ Neighborhood <i>Next to indoor arena</i>	Long Track (400m Oval)
Refrigeration	\$400,000	\$400,000	\$200,000	\$1,600,000
Concrete Slab & Pipes	\$600,000	\$600,000	\$600,000	
Sand & Pipes				\$600,000
Accessory Building	\$600,000			
Site Preparation & Infrastructure	\$100,000	\$175,000	\$175,000	\$200,000
Landscaping	\$50,000			
Total	\$1,750,000	\$1,175,000	\$975,000	\$2,400,000

Partnership Opportunities and Disposition of Refrigeration Equipment

As indicated above, 4 refrigerated ice making units are required for the Canada Games long track speed skating oval at an approximate total cost of \$1.6M. If Council approves moving ahead with a permanent outdoor ice surface, the Municipality can redeploy one of the refrigeration units for this project. The cost of this unit would be a \$400,000 investment toward the total project cost of approximately \$1.75M.

The 2011 Canada Games Host Society is working with the Province and the Recreation Facility Association of Nova Scotia to identify municipalities and community groups to purchase the remaining 3 refrigeration units. The Province would provide financial assistance through its recreation facility grant program, contingent upon the refrigeration units being available for the

Games. The units would then be redeployed elsewhere in the Province in the spring of 2011. This makes the provision of a temporary long track speed skating oval for the Games and the construction of a permanent outdoor refrigerated recreational rink after the Games feasible. Discussions are also taking place with other potential funding partners.

BUDGET IMPLICATIONS

There are no budget implications in 2009/10. The implications in future years are noted below:

Capital

HRM has committed to contributing \$6.85 M toward capital costs for the games. This is broken down as follows:

Strategic Growth Reserve - \$2.0 M cash (already disbursed)
Major Facilities Upgrades 2009/10 capital budget - \$3.69 M
2009/10 and 2010/11 capital budget - \$1.16 M (\$1 M Capital Value in Kind)

\$2,234,350 of the Municipality's \$6.85 M commitment has not been allocated to date. This is a possible source of funding which can be put toward purchasing refrigerated ice making equipment for the Games and constructing a permanent outdoor recreational ice skating venue at a cost of approximately \$1.75M.

Council should be aware that the cost capital budget projects, particularly those involving steel and various trades are being pressured by market conditions.

	08/09	09/10
Cash	\$1,000,000	\$1,000,000
Capital upgrades to HRM facilities	\$4,850,000 (approved through capital budget process)	
HRM's total capital contribution	\$6,850,000	

Operating

The annual operating costs to provide full time seasonal maintenance and supervision of a regional outdoor refrigerated rink are approximately \$110,000. These costs include both physical maintenance costs by Transportation and Public Works staff as well as Recreation staff providing site supervision. Food services and skate rentals are usually provided through a competitive tender process. This revenue offsets some of the operating costs. Staff does not yet know how much this revenue is expected to be. Additional research will be done on revenues. Consistent with HRM's approach to new services and programs this additional operating cost will be added to the general tax rate when the service is introduced.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

1. Council can choose to participate with other funding partners in the construction of a temporary the long track speed skating oval for the 2011 Canada Winter Games and the subsequent construction of a permanent outdoor refrigerated recreational rink. It is premature to decide upon a specific location for the rink and staff will return with alternatives for Council's consideration. Options for additional refrigerated outdoor rinks will be considered during the preparation of the long term arena strategy. Construction of additional rinks should in part be dependent upon the experience operating the first rink. This is the recommended course of action.
2. Council could choose not to fund the purchase of one refrigerated ice making unit for a temporary long track speed skating oval or a permanent outdoor recreational rink. The remaining \$2,234,350 of unallocated capital funds for HRM facility upgrades could be used for additional upgrades to these facilities (Halifax Forum, Cole Harbour Place, Dartmouth Sportsplex and St Margarets Centre) upon approval of the Canada Games Host Society Board. This is not the recommended course of action because the remaining potential upgrades, while desirable, are not required to host the Games. In addition, the funding partnerships between the Municipality, Province, Host Society and other municipalities/community groups is a unique opportunity to leverage funds and project synergies which is unlikely to occur again in the foreseeable future.
3. Council, in conjunction with the Canada Games Host Society Board of Directors, could choose to hold the remaining \$2,234,350 of unallocated capital budget in reserve for any potential cost overruns on Games related projects in HRM's existing facilities. This is a reasonable course of action but is also not recommended because the funding partnerships between the Municipality, Province, Host Society and other municipalities/community groups is a unique opportunity to leverage funds and project synergies which is unlikely to occur again in the foreseeable future.

ATTACHMENTS

- Photographs of outdoor refrigerated ice rinks in Toronto, Boston and New York.

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/agenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

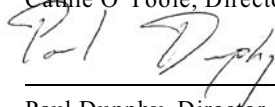
Report Prepared by : Rosalyn Smith, Project Manager 2011 Canada Winter Games, 490-4422

Financial Approval by:



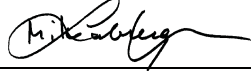
Cathie O'Toole, Director of Finance, 490-6308

Report Approved by:



Paul Dunphy, Director, Community Development

Report Approved by:



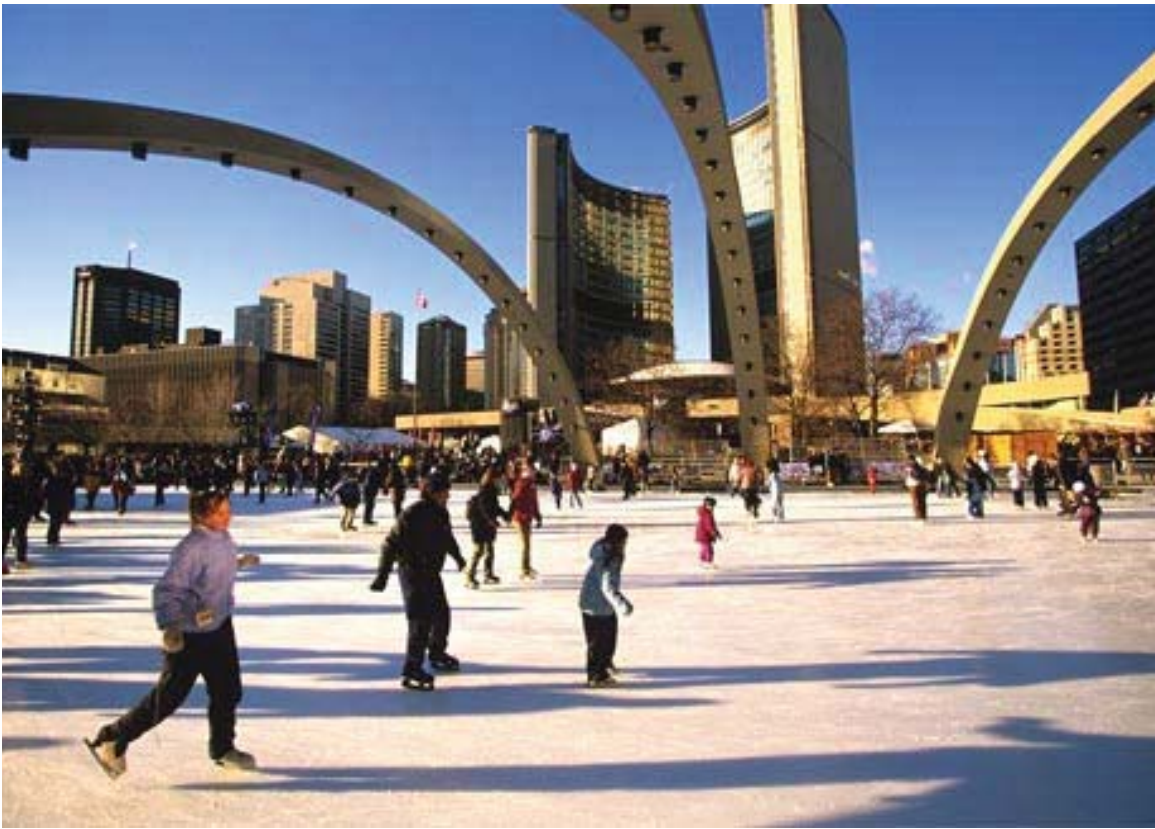
Mike Labrecque, Director, Transportation & Public Works

Report Approved by:



Phil Townsend, A/Director, Infrastructure & Asset Management

Nathan Phillips Square, Toronto



Boston Common Frog Pond



Lasker Rink, Central Park, NY



Barbara Ann Scott, Toronto



Harbourfront Centre, Toronto



Wollman Rink, New York



Rockefeller Centre, New York

