

MEMORANDUM

TO: Sumedh Bahl, Community Services Area Administrator
Craig Hupy, Public Services Area Administrator

FROM: Colin Smith, Parks & Recreation Services Manager
Matt Warba, Field Operations Assistant Manager

DATE: April 20, 2015

SUBJECT: Cost estimate for the temporary re-establishment of three free outdoor natural ice rinks at Burns Park, Allmendinger Park, and Northside Park

Resolution R-15-081, passed on 3/16/2015 requested that the City prepare a cost estimate for outdoor ice rinks at Burns, Allmendinger, and Northside Parks.

The last two winters have had prolonged stretches of cold weather that could support outdoor natural ice rinks. In general the following weather conditions are desirable to establish and sustain a natural ice rink: an initial spell of cold weather that establishes a layer of frost in the ground, followed by weather where daytime high temperatures do not exceed 32 degrees Fahrenheit.

The following assumptions form the basis of the cost estimate:

- Rink size of 12,800 square feet (64' x 200)
- 4" ice depth established (less of a base puts the rink at greater risk of being totally lost during a warm stretch – Buhr, which has a cooled sub-floor establishes a 2" ice depth)
- 10 – 14 days to establish the rink (The process for establishing a rink is time consuming and is best done at night when the sun is down. This is the process followed at Buhr. Thin layers of water need to be applied over time or significant cracking will occur. The colder the night the quicker the process can go as the ice will set more rapidly)
- Daily maintenance once the rinks are established, including brooming/snow removal/adding water/repairing ice damage when possible, and cleaning/open/closing shelters
- Rinks maintained for 45 days after their establishment
- Warming shelters open at Burns and Allmendinger from midday to early evening (Northside shelter presently used by Community Action Network for social services)
- Utility costs for water to establish and maintain rinks and increased gas and electric at shelters factored in
- Two cost estimates are provided. One assumes the rink perimeter is made of snow, and the other assumes a fabricated ice rink border, similar to the type used in Saline and Dexter

- Both cost estimates assume that the rink is only established one time, and then maintained. A separate cost estimate for reestablishing the rink should a melt occur is also provided. The costs vary depending on the type of rink perimeter chosen

Understanding the above assumptions, the cost estimates are as follow:

Total cost for three outdoor rinks with snow perimeter, to establish and maintain for a 45 day season: \$53,973.00.

Total cost for three outdoor rinks with fabricated perimeter, to establish and maintain for a 45 day season: \$89,169.00 (includes a onetime purchase of rink perimeters, estimated at \$30,000.00. Future season establishment would be approximately \$59,169.00. Perimeters anticipated to last 3 – 5 seasons before replacement is needed).

Cost to reestablish the three outdoor rinks should a melt occur with a snow perimeter: \$25,482.00.

Cost to reestablish the three outdoor rinks should a melt occur with a fabricated perimeter: \$22,314.00.

Staff recommends a pre-fabricated perimeter over a snow perimeter because the cost and time to reestablish the rinks should a melt occur is less. Both Saline and Dexter use pre-fabricated perimeters.

A spreadsheet detailing the costs is attached.

Ice Rink Establishment/Maintenance Costs

12,800 sq.ft

	Unit price	Establishment 137 man hours per location	Daily Maint. 45 days 4 hours per location
Hourly OT rate	\$38	\$15,647	\$20,520
Misc. Truck,hoses	\$12	\$4,932	
Equipment Rate Polar Track	\$78		\$3,510
Equipment Rate Truck/Trailer	\$21		\$2,835
Water Usage to establish rink	\$578	\$1,735	
Shelter Utilities:			
Burns Shelter	\$225		\$338
Allmendinger Shelter	\$82		\$123
Water to maintain			\$536
Park signage	\$150	\$450	
Cost with Snow as perimeter:			
Loader to create perimeter if snow is available	\$56	\$1,344	
Labor Hours to create perimeter	\$38	\$1,824	
Rink package/Purchased	\$10,000	\$30,000	
Labor hours to install/remove	\$38	\$3,648	
Equipment cost per hour	\$32	\$3,072	
Total Cost to Establish W/Snow		\$25,932	
Total Cost to Re-Establish W/Snow		\$25,482	
Total Cost to Establish/Package		\$61,308	
Total Cost to Re-Establish/Package		\$22,314	
Recurring Maintenance costs			\$27,861
Total Cost of 3 outdoor rinks Snow Perimeter		\$53,793	
Total Cost of 3 rinks Package Perimeter		\$89,169	

Assumptions:

14 days to establish rink

Daily Brooming/snow removal/adding water 1 hour day shift, 3 hours night time per location

138 CCF of water per rink/per time established 4" depth. 50 CCF to maintain

Assumption that the rink would be maintained for 2 months daily

Utilities Assumption. Number shown is actual gas/electric for December. Assume a 100% increase due to heat loss with the doors opening and closing ?

Purchased materials would last 3-5 seasons approximately

The Warming shelter at Northside is now occupied by CAN so it would not be usable