



**City of Richmond**

**Report to Committee**

**To:** General Purposes Committee  
**From:** Dave Semple  
Director of Parks and Public Works  
Operations

*To General Purposes - Feb 20, 2006*  
**Date:** February 10, 2006

**File:** 03-1000-20-2736Q

**Re: Supply and Delivery of Three (3) Ice Resurfacers – Contract 2736Q**

**Staff Recommendation**

That the City of Richmond award Contract 2736Q for the purchase of three electric-powered ice resurfacers to Vimar Equipment Ltd. for a price of \$149,792.86 per unit for a total purchase cost of \$449,378.60.

Dave Semple  
Director of Parks and Public Works Operations  
(3350)

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ROUTED TO:		CONCURRENCE		CONCURRENCE OF GENERAL MANAGER	
Budgets .....	Y	<input checked="" type="checkbox"/>	N		
Recreation & Cultural Services .....	Y	<input checked="" type="checkbox"/>	N		
Engineering & Public Works .....	Y	<input checked="" type="checkbox"/>	N		
Purchasing .....	Y	<input checked="" type="checkbox"/>	N		
<b>REVIEWED BY TAG</b>		YES	NO	<b>REVIEWED BY CAO</b>	
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		
		<i>DW</i>			
				YES	
				<input checked="" type="checkbox"/>	
				<i>JE</i>	
				NO	
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## Staff Report

### Origin

Staff are seeking to replace three ice resurfacers that have exceeded their operational life cycles. This replacement is based on Council's prior approval of the acquisition to be funded by the vehicle replacement reserve funds for 2003 and 2004.

### Background

The City has five propane-powered ice resurfacers. Four are used to service ice sheets at the Minoru Arena and at Richmond Ice Centre and one machine is retained at the Worksyard as a back-up unit. These machines were purchased before 1995 and each have accumulated an average of 500,000 KM. With the exception of the back-up unit, these machines have three-way catalytic converters which minimize gas emissions in the Arena's ice rinks. Despite these converters, the residual emissions still have the potential to threaten the health and safety of Arena staff and participants, while adding to the costs related to the operation of the Arena facilities and Fleet Operations.

#### *The Decision to Purchase Electric-Powered Ice Resurfacers*

Part of the Richmond Ice Centre was closed for three days in January 2004, following the hospitalization of an Ice Centre visitor who was exposed to high levels of Nitrogen Dioxide emissions from one of the City's propane-powered ice resurfacers. Following this incident, maintenance and testing procedures at the Arena facilities were upgraded to include twice-daily air testing using hand-held gas analyzers and monthly monitoring and maintenance of the ice resurfacers.

In 2005, approximately 3,000 tanks of propane were used in the course of daily ice cleans which released closely-monitored emissions, including Carbon Dioxide (CO<sub>2</sub>), Carbon Monoxide (CO) and Nitrogen Dioxide (NO<sub>2</sub>) into the Arena environments. To maintain the safe emissions levels for these environments as mandated by the Worker's Compensation Board (WCB), significant maintenance tasks are completed on a regular basis. These include air-quality testing, and monitoring and maintenance of air-handling units and the ice resurfacer machines.

In search of a safer and more cost-effective solution, staff began investigating an alternative to propane-powered machines. A modern option presented itself in the possibility of electric ice resurfacers. These battery-powered machines are known to emit no emissions while in use and can eliminate potential concerns about emissions levels, saving building costs. They also have fewer moving mechanical parts that will result in fewer maintenance requirements. As such, this option was explored by staff as a suitable replacement for three of the current machines.

The price difference of \$149,378.60 for all three units is outweighed by the health and safety benefits described above.

#### *The Bid Process*

In conjunction with the Purchasing department, Staff issued Request for Quotation (RFQ) 2736Q which was released and advertised to the public on September 15, 2005. Two bids were received:

- Crocker Equipment Company Ltd. – total quoted amount \$457,704.27 (complete with optional accessories.)

- Vimar Equipment Ltd. – total quoted amount \$449,378.60 (complete with optional accessories.)

Fleet Operations and Arena Services staff evaluated the 2006 *Zamboni Model 552*, proposed by Crocker Equipment Ltd. and the 2005 *Olympia Ice Bear*, proposed by Vimar Equipment Ltd. This review included a machine inspection and specification comparison performed by the Fleet department and operator test cleans performed by staff at the Ice Centre.

Both machines met the specifications outlined in the City's RFQ document with some exceptions, however, the Olympia Ice Bear had fewer exceptions. As well, the Olympia Ice Bear completed 21 ice cleans, with enough battery power left to complete five more cleans before a recharge, while the Zamboni was able to complete only 17 ice cleans with enough battery power left to do two more cleans before a recharge. The present number of ice cleans performed by each ice resurfacer is 21 cleans per day.

In addition, the Olympia Ice Bear's cutting blade measured 84 inches compared to the Zamboni's 77-inch blade. The wider blade allowed staff to complete a regular ice clean using one less pass of the ice surface. This saved time, allowing staff to exit the ice surface earlier, giving the ice more time to set in preparation for the pending user group.

### **Financial Impact**

Funding for this purchase is available through the 2002 and 2003 Public Works Vehicle Equipment Replacement Fund. As the purchase cost is higher than anticipated, the surplus funding from the 2002 Vehicle Equipment Replacement Fund of \$338,195.00 plus the allocated funding from 2003 will cover all anticipated costs.

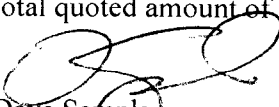
Additionally, staff anticipate that monthly vehicle charges will be adjusted in 2007 for all ice resurfacers. The current monthly rate is \$1,570.00 and the staff recommendation would be to use the 12 year life cycle rate with a monthly rate of \$1,443.00. This is based on the manufacturers information on the technology, fuel saving, operational repair, maintenance and servicing reductions.

The new monthly charges will be offset by:

- The yearly saving on propane will offset increased electricity costs to recharge the machines. In addition
- Vehicle maintenance costs will be lower for the electric ice resurfacers as they have fewer moving parts than propane-powered units.

### **Conclusion**

Notwithstanding it's superior performance, the Olympia Ice Bear has the potential to present cost savings and operational efficiencies to the Arena Services Section. Therefore, it is recommended that the contract for the purchase of three ice resurfacers be awarded to Vimar Equipment Ltd. for the total quoted amount of \$449,378.60 (complete with optional accessories).

  
Dave Semple  
Director of Parks and Public Works Operations  
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DCS/sj