



To: Public Works and Transportation Committee

Date: January 5, 2012

From: Tom Stewart, AScT.  
Director, Public Works Operations

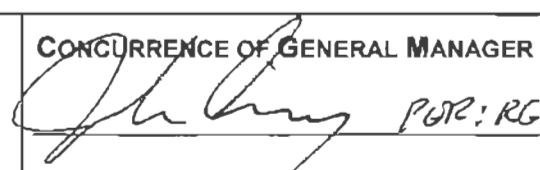

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Re: **4252Q - Award of Contract for Battery-Powered Ice Resurfacers**

**Staff Recommendation**

1. That Contract 4252Q, for the Supply and Delivery of Five Battery-Powered Ice Resurfacers, be awarded to Vimar Equipment Ltd. at a total cost of \$453,430.00, plus applicable taxes and levies;
2. That the additional required funding of \$288,738.50 be approved with funding from the Public Works Equipment Reserve and that the 2012 Capital Budget and the 5-Year Financial Plan (2012-2016) be adjusted accordingly.

Tom Stewart, AScT.  
Director, Public Works Operations  
(604-233-3301)

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<b>ROUTED TO:</b>		<b>CONCURRENCE</b>		<b>CONCURRENCE OF GENERAL MANAGER</b>	
Budgets		Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	 POR: RG	
Purchasing		Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>		
Parks and Recreation		Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>		
<b>REVIEWED BY TAG</b>		YES	NO	<b>REVIEWED BY CAO</b>	
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## Staff Report

### Origin

This report seeks Council approval to award Contract 4252Q, and expand the scope of the award to include a total of five units. As additional funding from the Public Works Equipment Reserve is required to award the Contract in light of the recommended expanded scope, Council approval is required.

### Analysis

#### *Background*

The City currently has five ice resurfacers. Four of these machines are in-service units used to clean the eight different ice sheets at the Minoru (one unit) and Richmond Ice Centre arenas (three units). The fifth unit is a back-up and is intended to be used to ensure arena services can continue to be offered to the public during regularly-scheduled or demand maintenance of any of the four in-service units.

Four ice resurfacers were replaced in 2006 and are battery-powered Olympia Ice Bears. This electric technology is particularly well suited to the indoor arena environment due to the fact there are no fossil fuel emissions. The fifth is a 1996 Zamboni propane-powered unit (919) and was approved for replacement as part of its regular life-cycle under project 40530 with funding from the Public Works Equipment Reserve. Unit 919 is being replaced with an electric unit.

To facilitate the replacement of unit 919, Contract 4252Q was issued to the marketplace on July 28, 2011. This request for quotations included an option for bidders to also quote on replacement of the four existing ice resurfacers, with a trade-in provision for each. This option was included to: a) allow consideration for consistency in the style and type of units for ease of operation and maintenance; and b) shop the marketplace since the four units purchased in 2006 were first vintage or prototype units and require extra diligence for Fleet Operations and the vendor to maintain a sufficient inventory of the older-style parts needed for ongoing repairs, etc. In addition, these units will each require battery replacements (at a cost of approximately \$16,500/each) prior to their normal scheduled replacement cycle in 2017. Staff considered it a prudent, but not mandatory, step to see what the market would bear for the early replacement of the existing four ice resurfacer units in conjunction with the acquisition of the replacement for unit 919.

#### *Public Tendering*

The request for quotations closed on August 3, 2011 and resulted in the following responses<sup>1</sup>.

Bidder	Product Type	Purchase Cost for One Unit (with trade-in of 919)	Total Purchase Cost for Four Additional Units (after trade-in of four existing units)	Total Cost for Five Units
1. Crocker Equipment	Zamboni 552	\$143,700	\$594,800	\$738,500
2. Vimar Equipment Ltd.	Olympia Ice Bear	\$169,918	\$283,512	\$453,430
3. Vimar Equipment Ltd.	Olympia Millennium E	\$157,928	\$451,712	\$609,640
4. Westrac Industrial Ltd.	Ice Cat B220	\$112,500	No Bid	No Bid
5. Joe Johnsen	Engo 200SX	\$161,257	No Bid	No Bid

<sup>1</sup>Note that the costs noted in this table are exclusive of taxes and applicable levies.

### *Proposal Evaluation*

An interdepartmental staff team consisting of arena and Fleet Operations staff reviewed the proposal submissions in accordance with the requirements outlined in the quotation. A summary of each submission is outlined below.

#### 1. Crocker Equipment

The Zamboni 552 ice resurfacers technology is based on a combustible platform-style unit which has been converted to an electric motor to drive the power train. This unit operates based on an opportunity charging system, i.e. charging after use. Alterations/adapters would have to be put in place to conform with the existing charging infrastructure at an estimated cost of \$12,000 per charging location because the required charging infrastructure is not compatible with that currently in place. The opportunity charging system does not meet the specification requirement of 25 sheets per single charge. The opportunity charge technology, while providing for continuous charge, is somewhat more vulnerable to oversight in maintaining regular charge status. For example, if the operator was remiss in plugging the unit in for charging after use, the battery charge could be depleted and there would be a negative impact to service levels and potentially, arena revenues, since the unit would require time to be charged sufficiently before the ice can be cleaned. By contrast, the existing in-service units are charged once per day only (over-night) and can conduct 25 ice cleans per charge as a minimum, which meets the arenas daily operational requirements.

Other considerations include operator familiarity and training/orientation requirements on a different make/model of unit, which could also negatively impact service intervals. Having one unit of a different style and make would also necessitate support for parts and materials for maintenance, with no ability to inter-change parts between units in situations where a quick-fix is needed to maintain service. To achieve consistency in all units, costing was sought to purchase four additional units, using the existing units as trade-ins. The costing provided by the vendor for this potential approach did not represent an attractive offer, i.e. \$594,800 for four additional units. Overall, the Zamboni unit is not desired by the user group.

#### 2. Vimar Equipment Ltd.: Olympia Ice Bear

The Olympia Ice Bear is an upgraded, newer vintage of the existing four in-service units. The Ice Bear technology was designed, engineered and constructed as an electric machine (i.e. not converted from a combustible style) and has four individual wheel motors to propel the unit. This allows for wheel speeds to be set and hence draws less amperage from the battery, providing for the efficiency in battery power to achieve the minimum 25 ice cleans per charge. This provides for one unit to sufficiently support two sheets of ice for an entire day on one charge. This unit is charged once daily (over-night) so is less susceptible operator oversight in potentially forgetting to charge the unit between ice cleans. Overall, the Olympia Ice Bear is a more efficient design. The battery charging infrastructure is also compatible with the existing charging infrastructure at both Minoru and Richmond Ice Centre arenas. Operator familiarity with this style of unit is also a consideration since this unit is similar to the existing four units. Vendor support for the existing units (also Vimar Equipment Ltd.) has been excellent. As such, the Olympia Ice Bear is the unit desired by the user group.

To obtain consistency with all units and upgrade to a newer model in order to address the challenges with maintaining a sufficient parts inventory for these first vintage units, costing was sought to purchase four additional units, using the existing units as trade-ins. The costing provided by the vendor for replacement of the existing four units to the newer vintage design is very attractive at \$70,878/unit for a total of \$283,512 (plus levies and taxes) for four additional units, or \$453,430 to replace all five units. It is important to note that this is a one time opportunity and that Vimar has made it clear that the City will not be able to take advantage of this exceptional offer in the future. In addition, this results in a favourable cost-benefit overall to the Public Works Equipment Reserve through savings in anticipated replacement costs.

Therefore, there are two options available under this proposal:

- i) Purchase one Olympia Ice Bear and award this contract to Vimar Equipment Ltd. at a total cost of \$169,918, plus levies and taxes, or
- ii) Expand the purchase to include five Olympia Ice Bear units and award this contract to Vimar Equipment Ltd. at a total cost of \$453,430, plus levies and taxes.

In addition to the financial savings replacement of the existing ice resurfacers will enable the City to provide a reliable level of service given the down-time of the existing machines when repairs are required.

Staff recommend Option ii). The cost benefit to support this recommendation is provided in the Financial Impact section of this report.

### 3. Vimar Equipment Ltd.: Olympia Millennium E

While the Olympia Millennium E is manufactured by the same manufacture of the Ice Bear and shares the same electrical motor design, the design of the snow dump box, wash and flood water arc different. The Millenium E has a longer wheel base than the Ice Bear and as a result has a turning radius of 180 inches compared to the Ice Bear's preferred 154 inches. The Millenium E is designed with a 2.91 cubic meter snow dump box compared to the Ice Bear's 3.37 cubic meter capacity. The Millenium carries a total of 1,164 litres of flood and wash water compared to the Ice Bear's 1,232 litres of water. The Millenium E's operator line of sight is not as good as the line of sight on the Ice Bear which could affect safety related to the operation of the machine. For these reasons, the Millenium E is not desired by the user group. In addition, the costing provided to purchase four additional units is not as attractive as that provided for the Ice Bear unit.

### 4. Westvac Industrial Ltd.

The Ice Cat B220 unit proposed by Westvac Industrial Ltd. is a 2009 demonstration unit. The bid submission was incomplete and therefore did not comply with minimum specification requirements. This bid, therefore, was not considered.

5. Joe Johnsen

The Engo 200SX unit proposed by Joe Johnsen did not meet specification requirements for the minimum required number of ice cleans per charge and lacks an hour meter (which is required for maintenance purposes). In addition, the warranty offer was minimal and there is no local service available to support servicing and parts. The machine is currently not in use anywhere in Canada, and therefore, the company’s experience and the track record for this unit could not be verified as outlined in the request for quotations. For these reasons, the Engo 200SX was not considered.

*Summary/Recommendation*

After reviewing the bid submissions, the proposal by Vimar Equipment Ltd. to expand the scope of Contract 4252Q to replace five units, per Item 2 ii), above, represents best value to the City, and is therefore recommended. As noted previously, the offer to buy back the existing ice resurfacers is a one time offer by Vimar that presents best value to the City.

**Financial Impact**

The recommendation to expand the scope of Contract 4252Q to replace all five ice resurfacer units results in the requirement for additional funding from the Public Works Equipment Reserve of \$288,738.50 (\$283,512 plus levies and net taxes) at this time. While additional expenditure is required, this approach represents an overall savings in replacement costs of approximately \$450,000 due to the incentive pricing obtained via the contract as follows:

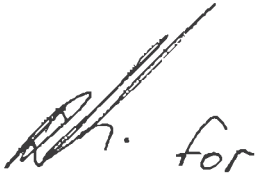
<i>Summary of Costs and Anticipated Savings per Recommended Option (to Purchase Five Ice Resurfacer Units)</i>							
<i>Vimar Equipment Ltd. Proposal</i>			<i>Funding/Anticipated Savings</i>				
<i>Ice Resurfacer Unit/s</i>	<i>Purchase Price/ Unit with Trade-In</i>	<i>Total Cost (not incl. taxes/ levies)</i>	<i>Project Year</i>	<i>Project Approval Status</i>	<i>Project Number</i>	<i>Funding Allocation in PW Equipment Reserve</i>	<i>Variance/ Savings</i>
Unit 919	\$169,918	\$169,918	2011	Approved	40530	\$175,000	\$5,082
Units 1303, 1304, 1305, 1330	\$70,878	\$283,512	2017	Pending	TBD	\$720,000 (\$180,000/unit)	\$450,004
<b>Total Cost for 5 Units</b>		<b>\$453,430</b>					

As noted in the above table, the long-term Public Works and Corporate vehicle replacement plan allocates the 2017 anticipated replacement costs for the four existing in-service units at \$180,000 each, or a total of \$720,000. The proposal by Vimar Equipment Ltd. offers significant trade-in incentive to encourage the acquisition/upgrade to purchase these four additional units at this time at a considerable price reduction, i.e. \$283,512. Although this proposal requires that additional dollars be expended in 2012 vs. 2017, it represents an approximate savings of \$450,000 over anticipated replacement costs. In addition, this represents an overall positive financial benefit to the Public Works Equipment Reserve in alignment with the proposed Sustainable Green Fleet Policy 2020.

The proposed option is recommended based on the analysis of the information received through the bid process and does not consider factors such as overall life-cycle maintenance costs, etc.

## Conclusion

The proposal by Vimar Equipment Ltd. to expand the scope of Contract 4252Q to include replacement for all five City ice resurfacers represents best value and overall cost savings. In addition, the Olympic Ice Bear unit proposed best suits the operational needs of the arenas to support the services provided to the public. The additional funding required to accommodate this expanded purchase at this time can be accommodated from the Public Works Equipment Reserve with Council's authorization. An adjustment to the 2012 capital budget and 5-year financial plan (2012-2016) will also be required.



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