



**STAFF REPORT  
ACTION REQUIRED**

**Agreement between City of Toronto and Toronto Hydro-Electric System Limited for the Use and Maintenance of the 900 MHz P25 Technology Trunked Radio Communications System**

<b>Date:</b>	October 23, 2015
<b>To:</b>	Government Management Committee
<b>From:</b>	General Manager, Transportation Services General Manager, Solid Waste Management Services General Manager, Toronto Water Director, Purchasing & Materials Management Division
<b>Wards:</b>	All
<b>Reference Number:</b>	P:\2015\Cluster B\TRA\ TMC \GM15007tmc.docx

**SUMMARY**

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The purpose of this report is to request authority to negotiate and execute a non-competitive 10 year agreement with Toronto Hydro-Electric System Limited for the use and maintenance of a 900 MHz eighteen channel P25 technology trunked radio communication system. The City currently has a 12 year agreement with Toronto Hydro-Electric System Limited for the provision of a 900 MHz system and services which expires on December 31, 2015.

City Council approval is required in accordance with City of Toronto Municipal Code Chapter 195, Purchasing, where the current request has exceeded the Chief Purchasing Official's authority of the cumulative five (5) year commitment limit under Section 1 of the Purchasing By-Law and, in accordance with City of Toronto Municipal Code Chapter 71, Financial Control, Section 71-11(A), where the total amount of the commitment exceeds staff's commitment authority.

## **RECOMMENDATIONS**

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**The General Managers of Transportation Services, Solid Waste Management Services, and Toronto Water, and the Director, Purchasing & Materials Management Division, recommend that:**

1. City Council grant authority to the General Managers of Transportation Services, Solid Waste Management Services and Toronto Water to collectively negotiate, enter into and execute an agreement for the use and maintenance of a 900 MHz eighteen channel P25 technology trunked radio communications system with Toronto Hydro-Electric System Limited on the following basis:
  - (a) The agreement be for a 10 year term starting on January 1, 2016 and terminating on December 31, 2025;
  - (b) The agreement provide that the system be operated and maintained by Toronto Hydro-Electric System Limited and jointly utilized by Toronto Hydro-Electric System Limited, Transportation Services, Toronto Water and Solid Waste Management Services;
  - (c) The costs shall be determined and calculated as set out in this report, estimated to be approximately \$348,094 plus applicable taxes in 2016; and
  - (d) Upon terms and conditions, as generally set out in this report, and on such other terms and conditions acceptable to the General Managers of Transportation Services, Solid Waste Management Services and Toronto Water and in a form satisfactory to the City Solicitor.

### **Financial Impact**

The fee for the system usage and maintenance cost is \$13.59 per month or \$163.08 per year per radio, an annual fee of \$53,076 for Industry Canada assigned radio frequencies currently in use, and an annual fee of \$1,800 for Industry Canada 900MHz frequencies held in reserve for growth in the future. The total cost for the ten (10) year usage and maintenance agreement is estimated to be \$3,480,940, net of HST, \$3,542,205, net of HST recoveries.

**Table 1: 2016 to 2025 City Program - Cost Sharing Formula**

City Program	# Radios	Toronto Hydro (THESL)			Industry Canada			Total Cost	
		Annual Maintenance Fee/ Radio	Total Annual Maintenance Cost	Total 10 Year Maintenance Cost	Flat Fee/ Year	Annual Licence Fee	Total 10 Year Cost	Annual	Total 10 Year Cost
Solid Waste Management Services	603	\$163.08	\$98,337	\$983,370	\$600	\$17,800	\$184,000	\$116,737	\$1,167,370
Transportation Services	672	\$163.08	\$109,590	\$1,095,90	\$600	\$19,837	\$204,370	\$130,027	\$1,300,270
Toronto Water	523	\$163.08	\$85,291	\$852,910	\$600	\$15,439	\$160,390	\$101,330	\$1,013,300
<b>Total</b>	<b>1,798</b>		<b>\$293,218</b>	<b>\$2,932,180</b>	<b>\$1,800</b>	<b>\$53,076</b>	<b>\$548,760</b>	<b>\$348,094</b>	<b>\$3,480,940</b>

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact statement.

## **DECISION HISTORY**

On February 4, 5 and 6, 2003, City Council, by adoption of Works Committee Report 2, Clause 5, Item (i), approved the following recommendation:

1. Solid Waste Management Services, Transportation Services and Technical Services of Works and Emergency Services Department integrate with Toronto Hydro-Electric System Limited 900 MHz trunk two-way radio system for the provision of their non-emergency radio communication needs; and
2. The Commissioner of Works and Emergency Services be authorized to negotiate and enter into an agreement between the City of Toronto and Toronto Hydro-Electric System Limited to provide for implementation of a radio communication.

On September 28, 29 and 30, 2005, by adoption of Works Committee Report 8, Clause 13, City Council:

1. Granted authority to the Executive Director of Technical Services to execute an agreement with Toronto Hydro-Electric System Limited ("Toronto Hydro") for a 12-year term for the maintenance of the infrastructure of the 900 MHz radio communications system operated by Toronto Hydro and jointly utilized by Toronto Hydro, Transportation Services and Solid Waste Management Services on the terms and conditions set out in the report and such other terms and

- conditions acceptable to the Executive Director of Technical Services and in a form satisfactory to the City Solicitor; and
2. Authorized staff to pay Toronto Hydro the maintenance fee as set out in the report and to pay an adjusted fee in accordance with the terms of the agreement with respect to increased use of the system by the City, or decreased use of the system by Toronto Hydro, and to make other adjustments to the fee as more particularly set out in the report.

## **ISSUE BACKGROUND**

After amalgamation, the radio communications needs of the former Works and Emergency Services Department (now referred to as Cluster B) were provided by several different radio systems operating in three (3) bandwidths. These systems were not consistent with the operating requirements of the amalgamated Departments. At that time, the City evaluated alternatives and recommended integration with Toronto Hydro.

As a result, the Toronto Hydro 900MHz radio communications system was expanded in 2003 to accommodate the City of Toronto. Installation of the equipment for City Services was completed in 2004. The original term of the agreement was for a 12 year period commencing January 1, 2004 terminating on December 31, 2015.

## **COMMENTS**

### **Agreement Analysis**

This report seeks approval for the General Managers of Transportation Services, Solid Waste Management Services, and Toronto Water to negotiate and execute a non-competitive 10 year agreement with Toronto Hydro-Electric System Limited for the usage and maintenance of a 900 MHz eighteen channel P25 technology trunked radio communications system. The non-competitive agreement would allow the use of a 900 MHz frequency proprietary to Industry Canada.

Alternative cellular based communication systems would not provide the same level of operational service as the current 900 MHz radio system, and would result in higher lifecycle costs to the City of Toronto.

Operationally, the current 900 MHz radio system allows all City of Toronto and Toronto Hydro staff to operate on a shared system. Moving away from the shared system would reintroduce operating and communication challenges, and would not be consistent with the requirements of the amalgamated Departments.

Additionally, the shared 900 MHz system provides for better vertical coverage than could be expected from the adoption of cellular communication systems. Many tasks carried out by staff require work below grade in chambers, confined spaces and embankments

where cellular services is often not available. Recently Toronto Hydro has invested, at their own expense, in \$6.1 million of added infrastructure to improve coverage areas, including improved below ground coverage. Providing adequate coverage under a stand-alone system operated by the City of Toronto would require a similar infrastructure investment.

10-year comparative lifecycle costs also support the continued usage and maintenance of the shared 900 MHz system. Comparable costs for City of Toronto corporate cellular phones that would meet operational needs are \$55.00 per month, or \$660.00 per year. Over a ten-year lifecycle, this would result in total costs of approximately \$8.99 million. By comparison, the estimated annual costs for the 900 MHz radios are \$163.08 per unit. This results in an estimated 10-year lifecycle savings of approximately \$3.7 million.

**Table 2: Comparable Cost Analysis (10-Year Lifecycle)**

Comparable Usage Costs	Number of Units	Annual Usage Costs/Unit	Industry Canada Flat Fee/Year	Industry Canada Annual Licence Fee	10 Year Operating Cost Total	10 Year Hardware Costs	Total 10 Year Cost
<b>Cellular</b>	1,798	\$660.00	NA	NA	\$8,990,000	\$1000/unit \$1,798,000	\$10,788,000
<b>900 MHz – 2way radio</b>	1,798	\$163.08	\$1,800	\$53,076	\$3,480,940	\$2000/unit \$3,596,000	\$7,076,940
<b>Savings</b>							<b>\$3,711,060</b>

Given the above analysis, it is recommended that the City of Toronto continue with the ongoing cost sharing partnership with Toronto Hydro.

### **Proposed Agreement Amendments**

The purpose of this agreement is to ensure that the City maintains communication with its field staff and utilize a radio system as a tool to deliver service. The radio system currently used is delivered through a 900 MHz frequency transmitted through Toronto Hydro Infrastructure. The system supports 1,798 City of Toronto Radios utilized by Transportation Services, Solid Waste Management Services and Toronto Water as well as approximately 1,165 Toronto Hydro users and is operating as a shared service model by Toronto Hydro- Electric System Limited.

The terms of this new agreement are generally the same as those contained in the current agreement with Toronto Hydro, with the following exceptions:

- The City's share of the cost for the system maintenance is equal to the proportion of the City radios to the total number of radios using the Toronto Hydro system. For 2016, the City will pay to Toronto Hydro an estimated annual fee of

approximately \$348,094, plus applicable taxes. Starting in April 2017 and in April of each billing year thereafter, Toronto Hydro will provide the City with an invoice for the estimated annual fee for that billing year and the True-Up amount for the immediately preceding billing year.

- Any amount payable by the City to Toronto Hydro under the agreement that is unpaid or outstanding after the applicable due date will bear interest. Interest will be payable to Toronto Hydro at a rate of prime +1 percent.
- The City agrees that the City's use of the system is at the City's own risk and agrees that Toronto Hydro will not be liable for any damages or losses of any kind, including third party claims, related to the City's use of the Toronto Hydro system and services provided under the agreement, including interruptions, delays, errors, defects, or misrouting of communications; or any failures arising from the Toronto Hydro system or equipment, and that Toronto Hydro will not be responsible for any indirect, special, incidental or consequential losses or damages, including economic losses, suffered by the City as a result of the failure of the system or any interruption in service.
- The City will indemnify and hold harmless Toronto Hydro and its affiliates and their respective representatives from any claims arising out of or resulting from any negligent act or omission or wilful misconduct by the City or any of its representatives; any breach of the agreement by the City of any of its representatives; any breach by the City or any of its representatives of any applicable laws, including the use by the City of City radios connected to the system for any unlawful purposes, including communicating defamatory comments or illegal threats; or any claims related to infringement of patents, copyrights and other intellectual property rights arising from the City combining or using equipment or facilities owned or provided by the City to the system.
- Starting in January 2017 and thereafter, in each January through the term, Toronto Hydro will provide the City in writing with the total number of City radios connected to the system as of December 31 of the calendar year immediately before each billing year, including a breakdown of the number of City radios by division of the City, and by types. The City shall have the right at any time to audit, verify and correct the information provided in these reports. The fees payable by the City for the services shall be calculated based on these reports.
- The City may connect up to 2,500 Radios to be used by the City's Transportation Services and Solid Waste Management Services divisions or other non-public safety divisions of the City approved by Toronto Hydro solely for the operation of those divisions.
- Toronto Hydro will be responsible for the administration of the System, including network access security, addressing schemes, user equipment access protocols, and all other functions required to administer the System network, including

creation and development of subscriber Templates. Programming (software configuration) of any radios of the City shall only be performed by a designated Motorola certified service provider, using specific configurations (Templates) that have been pre-approved for use on the System by both Toronto Hydro and the City. Prior to activation of any radios of the City on the System, radio personality data of the radio shall be provided to the Toronto Hydro System Administrator identified in the form of a radio Code plug file.

- The System coverage availability has been expanded to cover a geographical area of ninety-five (95%) percent of the City of Toronto.

## CONTACTS

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## SIGNATURES

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