

<b>TO:</b>	<b>CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON FEBRUARY 6, 2018</b>
<b>FROM:</b>	<b>KELLY SCHERR, P. ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER</b>
<b>SUBJECT:</b>	<b>SOLE SOURCE AWARD ACOUSTIC FIBER OPTIC MONITORING CONTRACT PROJECT No. EW3538</b>

**RECOMMENDATION**

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the Acoustic Fiber Monitoring (AFO) Monitoring Contract:

- (a) The contract value for Pure Technologies Ltd., 3rd Floor, 705-11 Avenue SW, Calgary, Alberta, T2R 0E3, **BE APPROVED**, in accordance with section 14.3(c) of the Corporation of the City of London's Procurement of Goods and Services Policy, in the amount of \$150,922.00 (excluding HST) for 2018 to continuously monitor 15.86 km of the City's most critical watermains;
- (b) The financing for this project **BE APPROVED** from current available budget as set out in the Sources of Financing Report attached hereto as Appendix 'A';
- (c) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project;
- (d) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

**PREVIOUS REPORTS PERTINENT TO THIS MATTER**

- Sole Source: Concrete Pressure Pipe Inspection – Fiber Optic Installation, April 14, 2010, Board of Control
- Sole Source Award: Acoustic Fiber Optic Monitoring Contract, February 21, 2017, Civic Works Committee

**2015-2019 STRATEGIC PLAN**

This report supports the Strategic Plan in the following areas:

- Building a Sustainable City: robust infrastructure; strong and healthy environment; responsible growth.
- Leading in Public Service: innovative and supportive organizational practices.

## BACKGROUND

### Purpose

This report recommends the approval of a one-year acoustic fiber optic (AFO) monitoring contract required to continuously monitor the condition of the City's most critical watermains from the Arva Pumping Station to the Springbank Reservoirs.

### Context

In 2010, the City began installing acoustic fiber optic cable, developed by Pure Technologies, inside its most critical large-diameter watermain which links the Arva Pumping Station to the Springbank Reservoirs. To date, 16 km of acoustic fibre optic cable has been installed at an approximate capital cost of \$3M. This proprietary technology allows the City to monitor the condition of this watermain in order to defer capital costs related to replacement and to reduce the social and economic risks of a watermain break.

Pure Technologies provides real-time monitoring of the City's critical water infrastructure. When a problem is detected, Pure Technologies emails City staff with the relevant information on the location and severity of the issue. Should the detected problem constitute an emergency, Pure Technologies will directly call the city's water emergency number. This Pure Technologies monitoring data has allowed the City to proactively replace compromised water pipeline well before a catastrophic failure occurs, reducing both costs and impacts to the public.

## DISCUSSION

### 2017 Monitoring Results

Recently, this monitoring system identified a number of wire breaks in the Arva-Huron pipeline which links the Arva Pumping Station to the Springbank Reservoirs. This information prompted a more invasive inspection of the critical section. The inspection confirmed the pipe was distressed and at risk of failure. Staff used this information to plan and schedule the pipe's replacement. This proactive planning also allowed staff to operationally plan for the pipe to be out of service during replacement. A sudden break in this large main would have cost significantly more to repair and would have caused more disruption compared to the preventative replacement that was completed. The preventative replacement was a proactive step made possible by the AFO monitoring system.

### 2018 Monitoring Program Extension

Pure Technologies has proposed a contract to continue to provide monitoring services in accordance with the following fee schedule:

Period	Length (m)	Base (\$)	Unit Rate (\$/m/year)	Warranty (\$)	Total Fee (\$)
2018	15,858	10,000	7.31	25,000	150,922

The warranty component of the contract covers all materials associated with the AFO monitoring system. In 2015, a component of the system was replaced under the warranty. Had the warranty not been in place, the cost to replace this component alone would have been \$75,000. Further, should the City decide to install more AFO in the water distribution system before the proposed contract expires, the same unit rate for the additional AFO would apply and the contract would be amended.

## Contract Procurement

Section 14.3(c) of the Procurement of Goods and Services Policy allows a procurement to be conducted using a sole source if the service is unique to one supplier with no alternative or substitution. As the AFO monitoring system owned by the City is proprietary in nature, Pure Technologies is the only firm that is able to provide the required monitoring services.

<b>CONCLUSIONS</b>
--------------------

It is proposed that Pure Technologies be retained, in accordance with Section 14.3 (c) (Sole Source) of the Procurement of Goods and Services Policy, to continue to provide AFO monitoring services of the City's most critical watermain. The proprietary equipment required to undertake this task is already in place in the water distribution system, and it is Pure Technologies' unique proprietary system that is needed to provide the City with this monitoring service.

### Acknowledgements

This report was prepared by Michelle Morris, E.I.T., of the Water Engineering Division.

<b>PREPARED BY:</b>	<b>REVIEWED &amp; CONCURRED BY:</b>
<b>AARON ROZENTALS, P. ENG. DIVISION MANAGER, WATER ENGINEERING</b>	<b>SCOTT MATHERS, P. ENG. MPA DIRECTOR, WATER AND WASTEWATER</b>
<b>RECOMMENDED BY:</b>	
<b>KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER</b>	

January 25, 2018

Attach: Appendix 'A' – Sources of Financing

CC. John Freeman – City of London  
Gary McDonald – City of London  
Michelle Morris, E.I.T. – City of London  
Michael Wrigglesworth – Pure Technologies Ltd.