

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING OF NOVEMBER 21, 2017
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	LEAK LOGGER NETWORK FOR THE WATER DISTRIBUTION SYSTEM

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 award of a contract for the leak logger network for the water distribution system project:

- (a) The proposal submitted by Gutermann Leak Detection, in the amount of \$330,440.00 (excluding H.S.T.) to supply, install, and commission a leak logger fixed network system in the downtown core **BE ACCEPTED**, in accordance with section 12.2(b) of the Corporation of the City of London's Procurement of Goods and Services Policy;
- (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 approval given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract or issuing a purchase order for the work to be done relating to this project; and
- (e) 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

None

2015 – 2019 STRATEGIC PLAN

The following report supports the 2015 – 2019 Strategic Plan through the strategic focus area of *Building a Sustainable City*, by managing and monitoring our Water infrastructure and services, and *Leading in Public Service* by implementing new technology to assist in the best management of the water distribution system assets.

BACKGROUND

Purpose

The purpose of this report is to award a contract for the purchase of leak detection technologies. It includes the installation of a permanent watermain leak detection system in the downtown and the purchase of portable leak detection equipment.

Context

The City consists of over 1,565 km of watermain, associated hydrants, water service connections, and other appurtenances. London experiences approximately 120

watermain breaks a year, a low number for the size and age of our system. London's water loss level is very low (less than 10%), placing us among the best municipalities in North America. However, the buried infrastructure in the downtown core continues to age within complex and highly congested corridors. Watermain breaks in this area can distress critical infrastructure, cause catastrophic damage, and create significant disruption to businesses, residents, and the public. Early detection of water leaks is an ideal method to minimize customer impacts, interruptions, and financial risk.

DISCUSSION

The City issued a competitive Request for Proposal in June 2017 (RFP 17-19: Leak Logger Network for Water Distribution System) to supply, install, and commission a permanently deployed fixed network system of leak loggers within the downtown core. As a result, five proponents submitted proposals. The proposal submitted by Gutermann Leak Detection (Gutermann) obtained the highest overall score and performed the best in a mandatory month long small-scale field trial. The Gutermann system was the only vendor able to find and correlate all simulated leaks on metallic watermain which is the most common watermain material in the downtown core.

Installing permanent leakage monitoring has been gaining popularity by water authorities over the last five years. Acoustic loggers are magnetically connected onto valves and hydrants and programmed to log noise levels in the early hours of the morning when system pressure is highest and background noise is lowest. With careful analysis of the data the probability of leakage can be calculated based on the level and consistency of the background noise. This data is sent daily to a host server where it can be used to create colour coded maps that depict the probability of a leak. The most advanced systems are capable of automatically correlating the location of the leak and notifying the user. The Gutermann system has these capabilities.

A watermain leak in the downtown could cause a major sinkhole resulting in significant economic, social, and transportation impacts. Currently, leaks are detected when they break the surface through observation of a staff member or a resident. At the point when the water reaches the surface significant damage to the road subsurface or private property may have already occurred. A permanent leak monitoring program provides practically real-time data on the presence of leaks in the downtown. The provided data alerts operations staff of an issue allowing them to follow-up using portable equipment to determine the exact location of the leak. It is anticipated that these leaks could be detected early before significant damage occurs reducing the risk of catastrophic failures. The relatively minor cost of a permanent leak detection system reduces the probability of high cost emergency work.

Funding

Funding for this expenditure is provided for in the annual water capital budget item EW1630. A source of financing is attached as Appendix 'A'. All operational costs are included for the first 5 years.

CONCLUSIONS

The permanent watermain leak detection system recommended in this report provides operations staff with an early detection tool with the potential to avoid catastrophic sinkholes. Prompt response to detected leaks prevents damage to infrastructure while minimizing social impacts. It is recommended that this project be awarded to Gutermann Leak Detection. They bring significant technological knowledge, and supply equipment that is a field proven solution that will address the City's needs and objectives.

Acknowledgements

This report has been prepared with input from Scott Koshowski, P. Eng. - Environmental Services Engineer.

PREPARED BY:	REVIEWED & CONCURRED BY:
JOHN SIMON, P. ENG. DIVISION MANAGER WATER OPERATIONS	SCOTT MATHERS, P. ENG. MPA DIRECTOR, WATER AND WASTEWATER
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER	

Attachment: Appendix 'A' – Sources of Financing

CC: Chris Ginty, CPPB, Procurement Officer, Purchasing and Supply
Gutermann Leak Detection, c/o David Gough
Aaron Rozentals, Division Manager – Water Engineering