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| <b>TO:</b>      | <b>CHAIR AND MEMBERS<br/>CIVIC WORKS COMMITTEE<br/>MEETING ON MARCH 8, 2016</b>                                    |
| <b>FROM:</b>    | <b>JOHN BRAAM, P. ENG.<br/>MANAGING DIRECTOR, ENVIRONMENTAL &amp; ENGINEERING<br/>SERVICES &amp; CITY ENGINEER</b> |
| <b>SUBJECT:</b> | <b>SUBSURFACE UTILITY ENGINEERING INVESTIGATION FOR THE<br/>DOWNTOWN YORK AND KING STREET CORRIDORS</b>            |

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| <b>RECOMMENDATION</b> |
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That, on the recommendation of the Managing Director, Environmental & Engineering Services & City Engineer, the following actions **BE TAKEN** with respect to the Subsurface Utility Engineering Investigation for the downtown York and King Street corridors:

- a) The proposal submitted by T2 Utility Engineers Inc. in the amount of \$171,718.00, including a 15% contingency and excluding HST **BE ACCEPTED** in accordance with Section 12 of the City of London's Procurement of Goods and Services Policy; it being noted that the proposal submitted by T2 Utility Engineers Inc. represents the best value out of six (6) proposals received and meets the City's specifications and requirements in all areas;
- b) the financing for this project **BE APPROVED** 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 purchasing order for the services to be supplied; and
- e) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

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| <b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b> |
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- February 2, 2016 "Initiation Report: Core Area Servicing Studies," Civics Works Committee
- January 28, 2016 "Downtown Infrastructure Planning and Coordination," Strategic Priorities and Policy Committee

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| <b>2015-19 STRATEGIC PLAN</b> |
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The 2015 – 2019 Strategic Plan identifies this objective under Building a Sustainable City: 1B – Manage and improve our water, wastewater and stormwater infrastructure and services; and, this objective under Growing Our Economy: Invest in London's downtown as the heart of the city.

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## BACKGROUND

### **Purpose:**

The purpose of this report is to recommend that T2 Utility Engineers Inc. undertake a Subsurface Utility Engineering (SUE) Investigation in the York and King corridors downtown to identify the exact horizontal and vertical positioning of all existing in-ground utilities.

### **Context:**

The underground infrastructure in the downtown core is congested with municipal infrastructure such as sanitary sewers, storm sewers, combined sewers, and water mains as well as private infrastructure owned by Bell, Rogers, London District Energy, and London Hydro. In order for municipal infrastructure projects to proceed in the York and King corridors downtown with confidence that utility conflicts will not occur during construction, all existing utilities have to be identified and located. Utilities also need to be both horizontally and vertically located with a high level of certainty prior to undertaking the detailed design portion of the project, long before any construction activities take place.

Undertaking a SUE investigation prior to detailed design and construction works reduces construction costs and schedules through the reduction of unforeseen utility conflicts and utility relocations that would otherwise be managed during construction.

## DISCUSSION

The Wastewater Capital Budget forecast identifies that the combined sewers on York Street from the Thames River to Colborne Street are a priority to be replaced with new storm and sanitary sewers. The combined sewers are at the end of their design life, with significant portions of the sewer systems dating back to the 1850's, 1890's and 1920's. The York Street subsurface corridor has many municipal and private utilities in place, the location of which can vary from existing records. York Street is anticipated to have a congested underground corridor. King Street also has combined sewer replacement needs within a utility congested underground corridor; a sizeable portion of the SUE investigation will take place on King Street as well. Please refer to Appendix B for the project location map. Locating these utilities, both horizontally and vertically, needs to be completed with a high level of confidence prior to any detailed design taking place. A SUE investigation in the downtown core will ensure that utilities are identified and located with a high level of confidence.

SUE is an engineering discipline which encompasses the identification and mapping of subsurface utilities at varying levels of confidence. A SUE investigation can be to four levels of quality, being either of 'Quality A', 'Quality B', 'Quality C' or 'Quality D'. A 'Quality A' level investigation will provide mapping and identification at the highest confidence level while a 'Quality D' level investigation provides for the lowest level of confidence. The following is a brief description of each quality level:

- A 'Quality D' investigation encompasses researching records and engineering drawings;

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- A 'Quality C' investigation encompasses the requirements of a 'Quality D' investigation as well as a topographic field survey to confirm above ground points of subsurface utilities (e.g. the location and elevations of fire hydrants and manhole covers);
- A 'Quality B' investigation includes all 'Quality D' and 'Quality C' activities as well as using nondestructive instruments (e.g. ground penetrating radar and electromagnetic cable locators) to identify and locate horizontal positions of subsurface utilities;
- A 'Quality A' level investigation includes all lower level quality investigations as well as visual location of subsurface utilities. This investigation is completed if conflicts exist between what was observed in the field investigations and what was recorded in engineering drawings. Conflicts are visually inspected and sorted out by making a small test hole with a hydro-excavator which is backfilled to the original undisturbed condition afterwards.

This SUE investigation will be of a 'Quality B' level nature which includes records research, topographic survey, and utilization of nondestructive subsurface utility locating instruments. This 'Quality B' level SUE investigation is the first phase of a two phase SUE investigation approach. A 'Quality A' level SUE investigation, which will be limited to exposing subsurface utilities to determine vertical position and resolving conflicts between as-built records and field observations, will be carried out as a separate contract in the next phase of this SUE investigation. This approach has been taken because pricing the 'Quality A' level investigation without knowing the number of conflicts would be a difficult task resulting in uncertainty in bidders' pricing. Depending on the 'Quality B' SUE investigation, the 'Quality A' SUE investigation could take place in August of this year.

In accordance Section 12 of the City of London's Procurement of Goods and Services Policy, a Request for Proposal for Subsurface Utility Engineering Investigation for the Downtown Core (RFP 15-26) was issued on December 4th, 2015 and closed December 18th, 2015. Staff received six (6) proposals. The review team included staff from WADE under the direction of the Purchasing and Supply Division. The proposals were evaluated based on qualifications of staff assigned to the project, experience on similar projects, a project management plan, understanding of project success factors and price. Following evaluation of all proposals, staff deemed that the proposal submitted by T2 Utility Engineers Inc., with a proposed price of \$149,320.10, excluding contingency and HST, represented the best financial and technical value to the City. A 15% contingency is added to this proposed price due to uncertainties associated with locating and identifying subsurface utilities. It is recommended that the City proceed with awarding T2 Utility Engineers Inc. with the contract to carry out the SUE Investigation for the Downtown Core.

#### **Next Steps:**

As identified in the "Downtown Infrastructure Planning and Coordination" report to Strategic Planning Policy Committee on January 28<sup>th</sup>, 2016, staff will be sending out an Engineering Request for Proposal (RFP) for the detailed design of the first phase of the York Street combined sewer replacement from the Thames River to Talbot Street. The RFP will also include the preliminary design, planning, costing and phasing for the other downtown blocks that still have combined sewers. This project design will rely on the outcome of both phases of the SUE investigation described above.

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| <b>CONCLUSION</b> |
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Staff is recommending a SUE investigation initially of a 'Quality B' level to take place downtown in the York and King corridors, to locate utilities with a high degree of confidence to allow for the detailed design of projects to take place with full knowledge of utility locations. Six proposals were received following the posting of a Request for Proposal in December 2015. Staff are recommending the SUE investigation assignment be awarded to T2 Utility Engineers Inc. as their proposal represents the best financial and technical value to the City. A subsequent SUE 'Quality A' investigation is scheduled for this summer.

**Acknowledgements:**

This report was prepared within the Wastewater and Drainage Engineering Division by Mitchell Heighway, EIT.

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| <b>PREPARED BY:</b>   | <b>SUBMITTED BY:</b>  |
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| <b>TOM COPELAND, P. ENG.<br/>DIVISION MANAGER, WASTEWATER &amp;<br/>DRAINAGE ENGINEERING</b>                          | <b>JOHN LUCAS, P. ENG.<br/>DIRECTOR, WATER AND<br/>WASTEWATER</b> |
| <b>RECOMMENDED BY:</b>  |   |
|   |   |
| <b>JOHN BRAAM, P.ENG.<br/>MANAGING DIRECTOR,<br/>ENVIRONMENTAL &amp; ENGINEERING<br/>SERVICES &amp; CITY ENGINEER</b> |   |

February 29, 2016

Attach: Appendix "A" – Sources of Financing  
Appendix "B" – Project Location Map

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Appendix A: Sources of Financing

**Appendix B: Project Location Map**

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