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<b>TO:</b>	<b>CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON MAY 5, 2015</b>
	<b>JOHN BRAAM, P. ENG. MANAGING DIRECTOR, ENVIRONMENT AND ENGINEERING SERVICES &amp; CITY ENGINEER</b>
<b>SUBJECT</b>	<b>APPOINTMENT OF CONSULTING ENGINEER HORTON SANITARY SEWER UPGRADES</b>

<b>RECOMMENDATION</b>
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That, on the recommendation of the Managing Director, Environmental and Engineering Services & City Engineer, the following actions **BE TAKEN** with respect to the appointment of a consultant for the Horton Sanitary Sewer Upgrade project and a Sewer System Study:

- (a) R.V. Anderson Associates Ltd **BE APPOINTED** Consulting Engineers for the Horton Sanitary Sewer Upgrade Project in accordance with the estimate, on file, at an upset amount of \$111,680.00, excluding HST, based upon the Fee Guideline for Professional Engineering Services, recommended by the Ontario Society of Professional Engineers; and in accordance with Section 15.2 (g) of the City of London's Procurement of Goods and Services Policy;
- (b) R.V. Anderson Associates Ltd, **BE APPOINTED** Consulting Engineers to undertake a Sewer System Study at an upset limit of \$65,000, excluding HST, based upon the Fee Guideline for Professional Engineering Services, recommended by the Ontario Society of Professional Engineers; and in accordance with Section 15.2 (g) of the City of London's Procurement of Goods and Services Policy;
- (c) the financing for the project **BE APPROVED** in accordance with the "Sources of Financing Report" attached hereto as Appendix "A";
- (d) the approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract with the consultant for the work;
- (e) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with these projects, and,
- (f) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

<b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b>
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None.

<b>BACKGROUND</b>
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**Purpose:**

The purpose of this report is to recommend the appointment of R.V. Anderson Associates Ltd. for the detailed design and tender work required to restore the existing Horton sanitary trunk sewer to full capacity, as well as to undertake a study to evaluate the sewer alignment options. This report also seeks to set aside funds for the cleaning of the Horton sanitary trunk sewer.

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**Context:**

A significant City project is presently in the planning stage to upgrade the intersection of Wharncliffe Road and Horton Street, including the replacement of the existing rail bridge immediately north of the intersection. There are significant, critical pieces of wastewater infrastructure in the vicinity of this intersection. It is known that the sewer system in the area is in need of replacement including realignment. The project provides the City with the opportunity to make several improvements to this sewer system, including:

- Upgrading local servicing to modern standards;
- Separating and realigning an inefficient sewer infrastructure;
- Removing sewers from under the existing rail overpass; and,
- Removing an aging, nearby siphon river crossing, or scheduling the replacement of the siphon if it is deemed necessary.

This report provides recommendations on how to address sewer performance needs at and near the Wharncliffe Road / Horton Street intersection improvement project site through two different but related assignments.

**Discussion:**

Assignment 1 – Maintenance Access Holes

The existing Horton sanitary trunk sewer is a 1200mm diameter concrete pipe that serves as one of the main transmission lines into the Greenway Pollution Control Centre. The sewer currently has a length of 1.25km with no maintenance holes for access and thus cannot be effectively maintained or inspected. Previous sonar inspections of the sewer have revealed significant sediment deposits. These deposits have reduced capacity of the sewer and altered the function of the system. Additional maintenance holes are needed to clean the accumulating sediment from the sewer and restore it to full capacity; however, hydraulic conditions of the sewer complicate the installation of the additional access points. Maintenance holes must be extended above grade to ensure that all sewage is contained within the system when operated under surcharge in peak flow times. As a component of work being recommended in this report, system hydraulics will be confirmed and the maintenance holes designed to accommodate these anticipated peak flow times. It is anticipated that the maintenance holes will be installed by Sewer Operations staff with financing for this work being from the Council approved 2015 Sewer Operating budget.

R.V. Anderson has submitted a cost of \$111,680 (excl. HST) for the detailed design of the maintenance holes, as well as the preparation and administration of a tender for the specialized sewer cleaning and is recommended for this work. The revised work plan and associated fees have been reviewed by City staff and are deemed to be appropriate for the scope of work. It is in the best financial and technical interests of the City to use R.V. Anderson based on their past engineering work on this sewer system.

It is estimated that cleaning of the trunk sewer could cost up to \$300,000. This is based on the large volume of sediment that has accumulated and hardened over many years in the sewer. Based on City experience, it will take significant time and effort by a specialized contractor to remove and dispose of the sediment.

Assignment 2 -- Sewer Evaluation and Alternative Sewer Alignment Analysis

R.V. Anderson has completed a first phase of study on the Horton trunk sewer. The study included a general understanding of the hydraulics of this sewer, a subsurface utility engineering (SUE) investigation to properly locate the sewer and determine its horizontal and vertical alignment, and an assessment of upgrade options, including the possibility of twinning the trunk sewer. Staff have determined that at a minimum, the sewer must have additional maintenance holes to provide sufficient access for cleaning. These access points are also required to facilitate a modelling study that will lead to design recommendations and proposed construction works in advance of the Wharncliffe Road / Horton Street Intersection project.

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To accurately measure system flows, the Horton trunk sewer must be restored to a proper operating condition. The cleaning of the Horton trunk sewer must be completed by a specialized contractor in advance of flow monitoring, a critical first step in the sewer analysis program. It is important that this monitoring begin in the fall of 2015, in order to complete the required studies, design and construction of proposed sewer works in advance of the City Wharnccliffe Road / Horton Street intersection improvement project in 2018.

R.V. Anderson has submitted a proposal to evaluate the sanitary sewers in the vicinity of Wharnccliffe Road and Horton Street intersection and to provide a recommendation on alternative sewer alignments to eliminate sanitary sewer crossings under the existing rail bridge on Wharnccliffe Road north of Horton Street. R.V. Anderson will also investigate the opportunity to eliminate an aging sewer river crossing near Riverview Avenue within the same sanitary sewershed. An upset limit of \$65,000 has been set for this work. It is in the best financial and technical interests of the City to use R.V. Anderson based on their past engineering work on this sewer system.

**Financial Implications:**

As this project was not originally contemplated in the approved 2015 Wastewater & Treatment Budget submission, a new capital project must be established. Surplus funding to support this new project has been identified in another Wastewater project (ES2689 – Storm Outlets Remediation Work) that will be recommended to be closed in 2015. Financing in the amount of \$480,000 will be transferred from ES2689 to establish funding for this new project.

\$179,789 is required at this time to fund the two consulting appointments currently recommended (\$113,645 for Assignment 1 and \$66,144 for Assignment 2). It is estimated that Assignment 1 will require additional funding of \$300,000 for construction (cleaning the trunk sewer). With the approval of the attached Source of Financing, this contract will be awarded administratively in the late summer.

**Summary:**

The City initiative to improve the intersection of Wharnccliffe Road and Horton Street, including replacement of the existing rail bridge has driven the need to plan for the upgrade and realignment of sewers in the area in a timely fashion.

In order to accurately model the existing system, the Horton sanitary trunk sewer must be cleaned and this can only take place by providing sufficient access through the addition of newly constructed maintenance holes.

The construction of the maintenance holes, cleaning and modelling must occur in 2015, in order to carry out new sewer construction replacement and realignment in 2016/2017, in advance of the City Wharnccliffe/Horton project, which is tentatively scheduled to take place in 2018/2019.

The creation of a new project supported by surplus capital funds will allow this important work to be undertaken.

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**Acknowledgements:**

This report was prepared within the Sewer Operations Division by Ashley Rammeloo, P.Eng. with assistance from Kyle Chambers, P.Eng.

<b>SUBMITTED BY:</b>	<b>REVIEWED BY:</b>
<b>RICK PEDLOW, C.E.T. DIVISION MANAGER SEWER OPERATIONS</b>	<b>JOHN LUCAS, P.Eng. DIRECTOR, WATER &amp; WASTEWATER</b>
<b>RECOMMENDED BY:</b>	
<b>JOHN BRAAM, P.Eng. MANAGING DIRECTOR - ENVIRONMENTAL AND ENGINEERING SERVICES &amp; CITY ENGINEER</b>	

April 28, 2015

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Attach.: Appendix "A" – Sources of Financing

c.c. John Braam, Managing Director and City Engineer, Environmental & Engineering Services  
R.V. Anderson Associates Ltd.