



Staff Report

Report Title: Lucknow Infiltration

Prepared By: John Yungblut

Department: Public Works

Date: Sep. 21, 2020

Report Number: PW-2020-09-62

File Number: P750 Reports

Attachments: I&I Diagram

Recommendation:

That the Township of Huron-Kinloss Council hereby approves Report Number PW2020-09-62 prepared by John Yungblut, Director of Public Works, AND approves the quotation from Flometrix Technical Services in the amount of \$27,780.00 plus HST for the monitoring of sanitary sewer flow in 2020 and 2021 AND FURTHER authorizes the appropriate by-law come forward on tonight's agenda.

Background:

For several years, the Ministry of Environment, Conservation and Parks (MECP) have been in regular contact with the Township regarding the lack of remaining sanitary sewage capacity in the community of Lucknow. In the past, Township staff have informed the MECP that the sanitary sewage flows peak considerably during storm events which indicates a cross connections issue within this system. This is referred to as infiltration and inflow. The intent was to create a plan to reduce infiltration and inflow in Lucknow at a later date.

In November 2019, the MECP requested a long-term plan that will allow for future growth in Lucknow without an expansion to the Lucknow Wastewater Treatment Plant (WWTP). The Township worked with our consulting engineers, B.M. Ross and Associates, to create a plan that can be summarized as follows:

1. Investigate sources of storm water infiltration within the Lucknow sanitary system and make all necessary repairs.
2. Continue to replace the original shallow watermains from the 1930's that will no longer require Lucknow residents to keep their taps running throughout the winter in order to prevent water service freezing.

3. Continue to upgrade road drainage in Lucknow and work with property owners to disconnect sources of inflow such as sump pumps and downspouts from the sanitary sewer system.
4. Initiate a community education and outreach campaign regarding the issue and the potential ramifications if the situation does not improve.

Discussion:

As a first step in the plan, the Township is working with B.M. Ross and Associates to investigate sources of infiltration and determine which areas of Lucknow experience the greatest increase in sewage flow during storm events. Township staff received two quotations for sewage flow monitoring in the fall of 2020 and the spring of 2021:

Contractor	2020 Monitoring	2021 Monitoring	Total (not. Incl. HST)
Flometrix	\$13,890	\$13,890	\$27,780
AMG	\$14,200	\$14,200	\$28,400

B.M Ross has experience working with both contractors and the services offered in both proposals were very similar. Flow monitoring equipment will be installed at six (6) locations in 2020 and at another six (6) locations in 2021. A rain gauge will also be installed in Lucknow to determine the magnitude of storm events when they occur. Township staff recommend awarding this project to the low bidder in this case.

The next steps in the infiltration investigation is the inspection of all sanitary maintenance holes in Lucknow and Closed Circuit Television Video (CCTV) inspections of the sanitary sewers in areas with the highest peak sewage flows during storm events. A staff report will be brought forward once proposals for this work have been received.

There are several potential sources of infiltration and inflow in a sanitary system. Cracks in maintenance holes and sanitary sewer pipes are relatively simple to repair, however there are likely sources of inflow from private properties which are usually much more difficult to diagnose and correct. Investigations inside buildings will likely be required in the future. Education and outreach will also be critical because voluntary disconnection by property owners is by far the most efficient method of correcting this problem. The attached diagram from King County, Washington is a good illustration of what infiltration and inflow is and it can be an effective tool in explaining the issue to ratepayers.

In order to further assist property owners with disconnecting sources of inflow from the sanitary sewer system, Township staff will also be reviewing the possibility of

providing some properties in Lucknow with a storm service connection during road reconstruction projects where surface drainage is not practical and storm sewer capacity can accommodate the additional volume of stormwater.

Financial Impacts:

The estimated cost for B.M. Ross to review the data and provide a recommendation in 2020 is \$8,000-\$10,000 and \$5,00-\$7,000 in 2021. The 2020 Capital Budget allocated \$50,000 for this project and the Ten Year Capital Plan has allocated \$60,000 in 2021.

Strategic Alignment / Link:

We are a prosperous community that continues to grow in a sustainable manner by investing in infrastructure.

Respectfully Submitted By:

John Yungblut, Director of Public Works

Approved By:

Mary Rose Walden, Chief Administrative Officer