The Corporation of the City of Kawartha Lakes

Council Report

Report Number WWW2020-005

Meeting Date: July 28, 2020

Title: Flood Prevention Subsidy Report

Description: Feasibility of implementing a flood prevention subsidy program within the City of Kawartha Lakes

Ward Number: All

Author and Title: Robert MacPherson, Water and Wastewater Technician

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Recommendation(s):

That Report WWW2020-005, **Flood Prevention Subsidy Report**, be received;

That Council does not establish and implement a Flood Prevention Subsidy Program at this time.

Department Head: _____

Financial/Legal/HR/Other: _____

Chief Administrative Officer: _____

Background:

At the Council Meeting of January 28, 2020 Council adopted the following resolution:

10.2.4 CC2020-01.10.2.4

> **Memo Regarding a Flood Prevention Subsidy**
> Councillor Dunn
>
> **CR2020-025**
> **Moved By** Councillor Dunn
> **Seconded By** Councillor Elmslie
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> **That** the Memorandum from Councillor Dunn, regarding **the implementation of a Flood Prevention Subsidy,** be received; and
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> **That** staff report on the feasibility of implementing such a program in the City of Kawartha Lakes and report back to Council by the end of Q2, 2020.

On January 11th, 2020 an extreme weather event occurred throughout the City of Kawartha Lakes (CKL). Rainfall in the area was recorded at approximately 60 mm, which fell in a relatively short period of time. In addition to significant amounts of rainfall, warmer than seasonal temperatures also caused significant snow melt to occur. There were reports of flooding in many areas throughout the City due to the excessive rain and snow melt. Due to this event, Council requested a review of the feasibility of implementing a back water valve subsidy program such as the ones in the City of Peterborough and the City of Toronto. This report addresses that request.

Rationale:

As identified in the sanitary sewer presentation and Report WWW2020-004 Sanitary Back Up Report, that was also presented to Council on July 28, 2020, there are a number of potential causes for sewer backups that can cause the flooding of basements. The vast majority of causes are due to unmaintained foundations cracking and leaking, failures in the properties weeping system, and issues in the private sanitary lines such as blockages caused by roots, grease, non-flushable items, age of infrastructure and buildup of calcite around cracks and leaks in a pipe. Seldom in CKL are the sewage back-ups caused by high flow events caused by extraneous flows (I&I) due to extreme weather events.

Currently, there are backflow prevention subsidies in areas of Ontario where flooding events occur more frequently such as Toronto and Peterborough. While these programs do offer subsidies for back water valve installations, they include more than just valve installations, and instead focus on flood prevention in general. Toronto offers 80% of the cost up to $3400 per property for

modifications to prevent flooding (maximum $1250 for back water valve installations, $1750 for sump pump installations and $400 for severing and capping illegal connections). Peterborough offers a very similar program but at 100% of the cost to a max allowance of $3000 per property (maximum $1000 for back water valve installations, $1500 for sump pump installations and $500 for severing and capping illegal connections). Neither program offers these subsidies to commercial properties, apartment buildings, and new builds and must also not have any outstanding taxes or debts owed to the municipality to be eligible for the program. Peterborough's program, however, has more specific criteria that must be met in order to be eligible to receive the subsidy. The property must either have a history of flooding or the municipality has contacted the owner about a non-conforming sanitary sewer connection identified on their property. Peterborough implemented their program as a reactive measure following a number of significant flooding events that occurred.

Over a 3-year period (2016-2019) there were 53 sewer back-up occurrences in CKL (47 in Lindsay, 4 in Fenelon Falls, 2 in Bobcaygeon, and none in the smaller systems); 52 were caused by reasons other than weather causing excessive flooding. The vast majority were caused by blockages and tree root growth on the private side of the sanitary line. The remaining 1 event was suspected as high flows as it was raining at the time but was never verified as the inspection did not find any cause for the back-up. Before the event in January 2020, the last confirmed case of sanitary sewage back-up caused by high flows was in Fenelon Falls in 2015, which was later determined to be an equipment malfunction at a pumping station causing capacity issues. The issue was rectified following the incident and measures were put in place to prevent reoccurrence. A retention tank was also installed to help manage extraneous flows during high flow events.

In 2014, Mandatory Connection and Disconnect Programs were brought forward to Council as part of a Black Belt Initiative. The Mandatory Connection Program was designed in response to this initiative but no further action was taken regarding the disconnection of illegal sanitary connections. In 2016, By-law 2016-006 "A By-law to Establish Management and Use of Sewer Works" was passed to increase the City's ability to protect the wastewater system infrastructure and the environment, by restricting the use of sewer works and setting discharge limits. Although the by-law prohibits the discharge of storm water into the sanitary sewer system through illegal connections such as sump pumps, foundation drains and roof drains, there is no formal program in place to enforce and assist property owners with the disconnection of illegal connections. The largest portion of excess flows into the sanitary sewer system comes from these types of illegal connections from private homes/businesses.

Since 2016, back water valves have been mandatory for all new buildings in CKL as per section 6.10 of By-law 2016-006 "A By-law to Establish Management and use of Sewer Works". The by-law also requires that back water valves are installed and maintained by the Owner at their expense. The installation and

inspection is administered by the Building Division as part of the building permit process during a new build. Currently, there is no program in place to follow up with property owners for the proper maintenance of each device. A 2019 report from the Intact Centre on Climate Adaptation at Waterloo University (Evans, C., Feltmate B. 2019) identified that 53% of homes in Ontario with back water valves do not perform annual maintenance, meaning there is no guarantee they would perform as intended.

Although there are currently some pieces of flood prevention in place through City by-laws and preliminary research into a program through the black belt initiative, there is no overall flood prevention program in place for the City. Should Council consider implementing a flood prevention subsidy program, components of the Disconnect Program presented to Council in 2014, would need to be implemented, in addition to criteria set for back water valve installations on properties that currently don't have one. In order to determine where illegal connections exist CCTV investigations would need to occur to identify the sources of inflow. CCTV investigations are costly as they require not only the sewer mains to be flushed in advance but require specialized camera equipment. The City currently does not have a CCTV program in place and only performs CCTV investigations on an as needed basis, primarily due to cost.

If a program is developed it would be best to implement and enforce in stages based on area. The program could focus primarily in Lindsay, Fenelon Falls, and Bobcaygeon, where most backups have occurred. The number of backups however over the last three years has been very minimal.

Given past history with implementation of the Mandatory Connection Program, it is felt that there may be very little interest in uptake by residents for a flood prevention program. Although the City may offer a subsidy, there would still be some costs to be borne by the property owner. Implementing and enforcing a back water valve subsidy program would require resources from a number of Departments, including Public Works, Engineering & Corporate Assets, Building Division and Finance. Resources would include, staff, equipment and budget to offer potential subsidies. Staffing resources would be required by the Building Division for permit issuance and inspection. Engineering staff would be responsible for implementing a disconnect program and Public Works and Finance would require staff to administer a subsidy program by determining eligibility, tracking of property installations and issuing payment.

Given the estimated costs of implementing a flood prevention subsidy program and the low frequency of backups that occur staff are not recommending the implementation of a flood prevention subsidy program at this time.

Other Alternatives Considered:

Similar to Durham Region an alternative to offering a subsidy could be to provide interest free loans. Durham's program allows for up to $3000 to be paid back over a 3-year term and added onto properties utility bills. This option would allow property owners to make the necessary modifications to their sanitary sewer service without adding a strain to the City's user rate budget. A further review of this option would be required by Corporate Services.

There is also the option of keeping the status quo with the responsibility for installation, maintenance and costs that of the property owner, given these events seldom occur due to extreme weather. There are currently no subsidies offered for new properties that are required to install these devices at time of construction and it would be unfair to have all ratepayers pay for the sole benefit of individual property owners.

Another alternative to consider would be to only provide subsidies for properties in areas such as portions of Fenelon Falls and Lindsay where there has been a history of sewage backups due to high flows. Given that the number of occurrences has been low, this creates an unfair advantage to certain communities over others within the overall user ratepayers of Kawartha Lakes.

Financial/Operation Impacts:

While Peterborough does not list their averages, the City of Toronto's program provides subsidies for approximately 2200 properties a year at a cost of an estimated $3,700,000, with an average subsidy of $1700 per property (actual cost is $2040 but they only pay for 80% of costs). If a subsidy program similar to Toronto's offering to pay 80% of the cost is implemented using their average of $1700 per property, the overall potential cost for approximately 11,300 users in Kawartha Lakes connected to the sanitary systems would be $19,210,000. If 100% was offered similar to Peterborough (based on $2040/property), it would represent an approximate cost of $23,052,000. This is a significant cost, and would not be affordable for the water and wastewater budget. Even phased in over 10 years, would still represent a cost of approximately $230,520 per year which is 1.2% of the overall user rate budget.

In addition to funds required to offer property owners a subsidy to disconnect or install a back water valve on private property, budget would be required to perform necessary CCTV investigations to determine locations of illegal connections. CCTV on average costs $5.00/m of sanitary sewer investigated. With approximately 55,000 m overall of sanitary sewers in CKL, this would be an approximate cost of $275,000. Disconnection is always site specific and may also require necessary storm infrastructure to be available in order to ensure

overland flooding does not occur. There would be additional costs if infrastructure is also required.

If the program was made voluntary it is unknown how many property owners would take advantage of a subsidy program, and therefore is hard to determine the level of staffing required to implement a program, and whether additional staff would be required by any departments. Some property owners have already taken the initiative as a preventative measure to install their own device. Installing a device at the homeowner's cost is an added insurance measure, to avoid costly insurance claims due to property damage in the event of a sewage back up.

Relationship of Recommendation(s) To The 2020-2023 Strategic Plan:

The recommendation to Council is consistent with the Council Adopted Strategic Plan in the following ways:

"Vibrant and Growing Economy" – will be met through the proper servicing and collection of appropriate user fees to fund the maintenance, capacity and growth of the municipal water and wastewater systems.

"Healthy Environment" - will be met by through community preparedness by ensuring that the necessary funds are secured in order to sustain water and wastewater infrastructure necessary to protect the health of the environment.

"Good Government" – will be met through increasing the efficiency and effectiveness of service delivery by streamlining rate adjustments within the by-law and ensuring that the municipal assets are well maintained and managed.

References:

Evans, C., Feltmate B. 2019. Water on the Rise: Protecting Canadian Homes from the Growing Threat of Flooding, Executive Summary. Intact Centre on Climate Adaptation, University of Waterloo

Consultations:

Supervisor, Water and Wastewater Operations
Director, Public Works
Chief Building Official
Director, Corporate Services

Attachments:

N/A

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Department Head: Bryan Robinson