
Memorandum

To: Budget Standing Committee

cc: D. Carnegie; B. Shynal; S. Chemnitz; K. Douglas; M. Kreuk

From: Dan Dillon, P.Eng. – Director-TES

Date: May 23, 2017

Subject: Ditch to Culvert Conversion

At its meeting of April 12, 2017, the Budget Standing Committee (BSC) asked “That staff report on feasibility if the culvert conversion budget line goes unused, that the remainder is used to proactively convert ditches to culverts”. This memo addresses that request.

Culvert Conversion Budget Line

There is no culvert conversion budget line in the Operating Budget. There is a Driveway and Culverts item in the TES Operating budget. This item includes the expenditures and revenues associated with property owners that wish to install a new driveway culvert (where none exists) or extend an existing driveway culvert. The Schedule of Rates and Fees for these works are established based on historical costs and as a result, the Net Budget Expenditure is \$0.00. Actual Net Expenditures may vary marginally. The maximum length of culvert installations is determined by the allowable driveway width, which is typically 7.5m (24.5') or 50% of the width of the lot, whichever is less.

The costs associated with correcting localized operational drainage issues (including the replacement of existing culverts and the re-grading of ditches) are charged to the Drainage-General item in the TES budget – the 2017 budget allocation for this item was \$164,130.

For larger street-wide drainage issues, the works would be budgeted for as part of the Road and Drainage Improvement Program, funded either from the Operating or Capital Budgets.

Conversion of Ditches to Storm Sewers

Although any road constructed as part of a newer subdivision has storm sewers and curbs, there are many older streets throughout the City that do not have either storm sewers or curbs. We refer to these types of streets as being “semi-urban”.

Many older streets were originally constructed with ditches. Ditches serve two purposes – one is to accommodate surface water flow from the road as well as the adjacent properties and the other is to provide an outlet for water that gets into the road's granular base. Although culverts are placed at driveways and road crossings, we refrain from simply placing culverts along the entire ditch and filling them in as this results in an undersized dual drainage system that also blocks the underdrainage from the road base.

In areas where we have properly eliminated ditches and created swales, we have installed an appropriately sized storm sewer with catchbasins to intercept the surface flow – where we have filled the ditches to create swales, we have also installed subdrains (to drain the road's granular base) that outlet into the catchbasins and ultimately the storm sewer.

The City's Storm Sewer Construction Program is typically concentrated in combined sewer areas, areas having experienced recent basement flooding or having a history of combined sewage overflow or surface flooding. The new storm sewers will reduce the amount of surface water entering the sanitary or combined sewer system thereby providing relief to the immediately adjacent areas as well as the properties upstream and downstream of the new sewers. We typically do not install storm sewers to simply eliminate ditches unless it also addresses basement or surface flooding issues.

Local Improvements

Should residents who live on a semi-urban street wish to accelerate the installation of storm sewers (and/or curbs), they may proceed through the Local Improvement Regulations under the Municipal Act. The Local Improvement process allows a municipality to undertake capital improvements and recover all or part of the costs associated with those improvements by imposing local improvement charges on the properties that benefit from the work.

Property owners can petition the municipality to undertake the work. A petition in favour of undertaking the works as a local improvement shall be signed by at least two-thirds of the owners representing at least one-half of the value of the lots liable to be specially charged for the work. The benefitting property owners would typically be charged based on the frontage of their properties. Based on the 2017 Local Improvement Rates, the costs to the property owners would be as follows:

2017 Local Improvement Costs		
Item	Cost - \$/m Frontage	Cost for Typical Lot -18m (60') Frontage
Storm Sewers Only	\$341.01/m	\$6,138.18
Curbs – Assuming Existing Storm Sewers	\$384.92/m	\$6,928.56
Curbs and Storm Sewers	\$689.18/m	\$12,405.24