



Report to: General Committee

Meeting Date: Feb 18, 2020

SUBJECT: Roadside Ditch Alteration Policy

PREPARED BY: Shahab Aryan, Technical Coordinator, ext. 2023;
Robert Marinzel, Supervisor, Survey, Utility & Right of Way, ext. 2842;
Alice Lam, Sr. Manager, Roads, Survey & Utility, ext. 2748

RECOMMENDATION:

- 1) That the report entitled “Roadside Ditch Alteration Policy”, dated February 18, 2020, be received; and,
- 2) That the presentation entitled “Roadside Ditch Alteration Policy”, dated February 18, 2020, be received; and,
- 3) That Council adopt the Roadside Ditch Alteration Policy, as presented in “Attachment “A””; and,
- 4) That Council approve amendment to the Road Occupancy By-law 2018-109 as deemed necessary by the City Solicitor and the Commissioner of Fire and Community Service to implement the Roadside Ditch Alteration Policy; and,
- 5) That the ditch restoration program be implemented starting in year 2021; and further,
- 6) That Staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

The purpose of this report is to obtain Council’s authorization for implementation of a Roadside Ditch Alteration Policy.

BACKGROUND:

The City of Markham has approximately 176 kilometers of roadside ditches which are a critical component of the broader storm drainage system. Roadside ditches prevent flooding by conveyance of stormwater from both public and private lands and include surface drainage, roadway sub-grade drainage and private property foundation drainage. Ditches also provide “Green” stormwater management functions such as sediment and pollutant removal, peak flow attenuation and ground water recharge, meeting Low Impact development (LID) infrastructure criteria as identified in the Storm Water Management Guidelines, published jointly by The Toronto Region and Credit Valley Conservation Authorities.

Current subdivision design standards utilize storm water management (SWM) ponds as the downstream component of the storm water management system, to improve water quality and control stormwater discharge during severe weather events, prior to the release of stormwater into local creeks, streams and rivers. In older developments, land was not allocated for SWM ponds. Streets were constructed without storm sewers with ditches performing a similar water quality, storage and control function as SWM ponds. The

majority of ditch modifications and infills have been undertaken by private land owners on City lands without City review or approval, resulting in a continuing degradation of the storm water management system in Markham's older neighbourhoods.

With potential adverse effects such as increased flooding, reduction of road service life and diminished water quality, a policy is required which clearly identifies procedures for evaluation of existing ditch modifications and for review and approval of proposed undertakings that may affect ditch functionality.

OPTIONS/ DISCUSSION:

Maintaining ditches has extensive and long-lasting economic and environmental benefits which include:

- Preserving the integrity of the overall storm drainage system,
- Reducing the potential for flooding,
- Reducing property damage due to flooding,
- Reducing downstream peak flow,
- Reducing of erosion at outlets,
- Improving water quality of receiving water bodies,
- Preventing surface runoff from pooling on the roadways and/or surrounding property,
- Increasing snow storage area below the elevation of the road surface
- Enhancing ground water recharge, and
- Reducing cost of road maintenance.

Ditch infill and modification issues are most prevalent where residential properties have been constructed on streets with rural road profiles. Ditch infill policies have been implemented in both Ottawa and Fort Erie where conditions similar to Markham exist.

This policy documents the circumstances and general proactive process requirements for the City to manage ditch infilling and alterations to drainage ditches within municipal road allowances. This policy, once adopted, will provide a clear and consistent direction for City staff and residents to follow.

The provisions of this policy shall apply to all road allowances under the jurisdiction of the Corporation of the City of Markham.

Following implementation of this policy, any unauthorized ditch modifications done by current owners of adjacent properties that are deemed to have an immediate negative impact to public safety or City assets, will be repaired at the expense of the resident, with no cost to the City.

With the exception of the above condition, ditch restoration work will be undertaken as part of the annual capital road improvements program and conducted prior to undertaking road rehabilitation work on roads with rural profiles. It is anticipated that regrading of

ditches will add \$20 to \$22 per linear meter of road work. Ditch regrading has not been undertaken in many of these communities and would be required regardless of enactment of this policy.

Staff recommend establishing an annual ditch restoration program undertaking 4km per year commencing in 2021.

Staff will work with the Environmental Services Department to establish communications and education campaigns with residents in these neighbourhoods through mail drops prior to an implementation of ditch improvement activities.

FINANCIAL CONSIDERATIONS

Based on a maximum cost of \$22 per linear meter, undertaking 4 km of ditch restoration work annually will cost an incremental \$88,000 per year in capital cost starting 2021 (\$22 x 4,000 lm). This will cover part-time staffing, material disposal, granular material and equipment rental expenses. The program will protect the City's investments in road maintenance and avoid early erosion of Markham's infrastructure. Residents will benefit from avoiding or limiting flooding impacts on their property and in public spaces.

The additional funding requirement will be requested through the 2021 capital budget approval process as part of the pavement preservation program.

Operating Budget and Life Cycle Impact

The inclusion of this program will add an incremental uninflated impact of \$2,200,000 to the Life Cycle Reserve Study over a 25 year period (\$88,000 x 25 years). There is no incremental operating budget impact.

HUMAN RESOURCES CONSIDERATIONS

Not Applicable

ALIGNMENT WITH STRATEGIC PRIORITIES:

Aligns with the City's Stormwater Management Strategy, Building Markham's Future Together Strategic Plan, improving the areas of Managing our Growth, Protecting our Environment and Excellence in Municipal Services.

BUSINESS UNITS CONSULTED AND AFFECTED:

The Environmental Services and Finance Departments were consulted and their comments incorporated in this report.

RECOMMENDED BY:

Morgan Jones
Director, Operations

Brenda Librecz
Commissioner, Community & Fire Services

ATTACHMENTS:

Attachment “A” – Roadside Ditch Alteration Policy