

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 7, 2016

Item 8, Report No. 7, of the Finance, Administration and Audit Committee, which was adopted without amendment by the Council of the City of Vaughan on June 7, 2016.

**8 EROSION AT WOODBRIDGE HIGHLANDS OPEN SPACE
PROJECT FUNDING REQUEST
WARD 2**

The Finance, Administration and Audit Committee recommends approval of the recommendation contained in the following report of the Deputy City Manager, Planning & Growth Management and the Director of Parks Development, dated May 30, 2016:

Recommendation

The Deputy City Manager, Planning & Growth Management and the Director of Parks Development, in consultation with the Director of Financial Planning and Development Finance & Deputy City Treasurer, recommend:

1. That staff be authorized to proceed with Phase 1 detailed engineering investigation at an estimated cost of \$50,040.00 including tax and contingency allowance;
2. That a new Capital Project for Phase 1 works be established with project costs funded from the Gas Tax Reserve;
3. That the appropriate resource requests for Phase 2 construction of erosion stabilization works at Woodbridge Highlands Open Space be included for consideration during the 2017 Budget process; and
4. That inclusion of this matter on a Public Committee or Council agenda with respect to amending the 2016 capital budget be endorsed as meeting the requirements for sufficient notice pursuant to Section 2(1) (c) of By-Law 394-2002 as amended.

Contribution to Sustainability

This report is consistent with the priorities previously set by Council in the Green Directions Vaughan, Community Sustainability Environmental Master Plan, specifically Goal 2 Objective 2.2:

- To develop Vaughan as a City with maximum green space and an urban form that supports our expected population growth.

Economic Impact

The Gas Tax Reserve has sufficient funds to accommodate Phase 1 project costs of \$50,040.00, including tax and contingency, for the hiring of an engineering consultant to complete Phase 1 works. Future works will also be eligible for Gas Tax funding and partnerships with the TRCA will also be explored.

Communications Plan

Not applicable.

Purpose

The purpose of this report is to provide Council with background information and to obtain approval for a new Capital Project to hire an engineering consultant to initiate erosion stabilization works required at the Woodbridge Highlands Open Space near Longview Crescent.

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Background - Analysis and Options

Concerns with slope stability and erosion within the Woodbridge Highlands Open Space were identified by a resident on Longview Crescent in 2013. A location map of the area is included as Attachment 1. The open space area behind this residential property is owned by the City with adjacent lands owned by the Toronto and Region Conservation Authority (TRCA). The TRCA was the initial contact point for the resident. The TRCA in conjunction with City staff reviewed the situation and have been monitoring erosion/settlement of the area over the last few years. The results of monitoring indicate continuing settlement of the area and risk of further erosion. An analysis from aerial photos of the open space also indicates evidence of erosion on the river bank area of the valley wall, located below the area in question also on City owned land and directly adjacent to TRCA owned land.

The resident is concerned as the erosion has resulted in a 1 to 2 meter drop in elevation along most of the rear fence line impacting their rear yard landscaping features.

Based on the analysis completed by the TRCA and staff, a preliminary engineering review was undertaken to provide recommendations on next steps required to mitigate the risk of significant erosion and instability in this area. The engineering recommendations for the scope of additional investigations are summarized as follows with details included in Attachment 2.

1. A report shall be prepared to determine the cause of the slope failure.
2. The report will determine whether the failure is part of the overall slope stability or it is only a localized slope failure.
3. The report will investigate possible alternatives for the remedial work and make a recommendation for the most appropriate alternative. Each alternative should include a conceptual sketch and evaluation of the practicality, cost and long term performance. The most appropriate alternative shall be selected.
4. The selected alternative will include preliminary drawings illustrating the proposed remedial work, the extent of the work, and the necessary details. This information must be sufficient enough for the City or City's agent to prepare detailed construction documentation.

Staff propose to undertake this project in multiple phases as follows:

Phase 1 - detailed engineering consulting works to complete borehole samples and undertake a site survey of the valley wall within Woodbridge Highlands Open Space adjacent to Longview Crescent. This Phase also includes development of alternatives, risk analysis and recommendations on a preferred solution.

Phase 2 - detailed design and construction of stabilization works required to mitigate further erosion and to restore grades at the property line.

Following completion of Phase 1 works, staff will review and provide appropriate recommendations for a Phase 2 project for consideration as part of the 2017 Budget process.

Relationship to Term of Council Service Excellence Strategy Map (2014-2018)

This report is consistent with the Term of Council Service Excellence Strategy objectives to:

- Continue to cultivate an environmentally sustainable City.
- Invest, review and manage infrastructure and assets.
- Continue to ensure the safety and well-being of citizens

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Regional Implications

There are no regional implications.

Conclusion

Staff is seeking Council approval to create a Capital Project for Phase 1 erosion stabilization at Woodridge Highlands Open Space with funding from the Gas Tax Reserve in the amount of \$50,040 including tax and contingency. This project will be advanced as quickly as possible in order to scope resource requirements to be considered during the 2017 Budget process.

Attachments

1. Location/Ownership Map
2. Engineering Report dated December 8, 2015
3. Site Photos
4. Capital Detail Sheet

Report prepared by:

Melanie Morris, Manager, Parks Development & Construction, Ext. 8058

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

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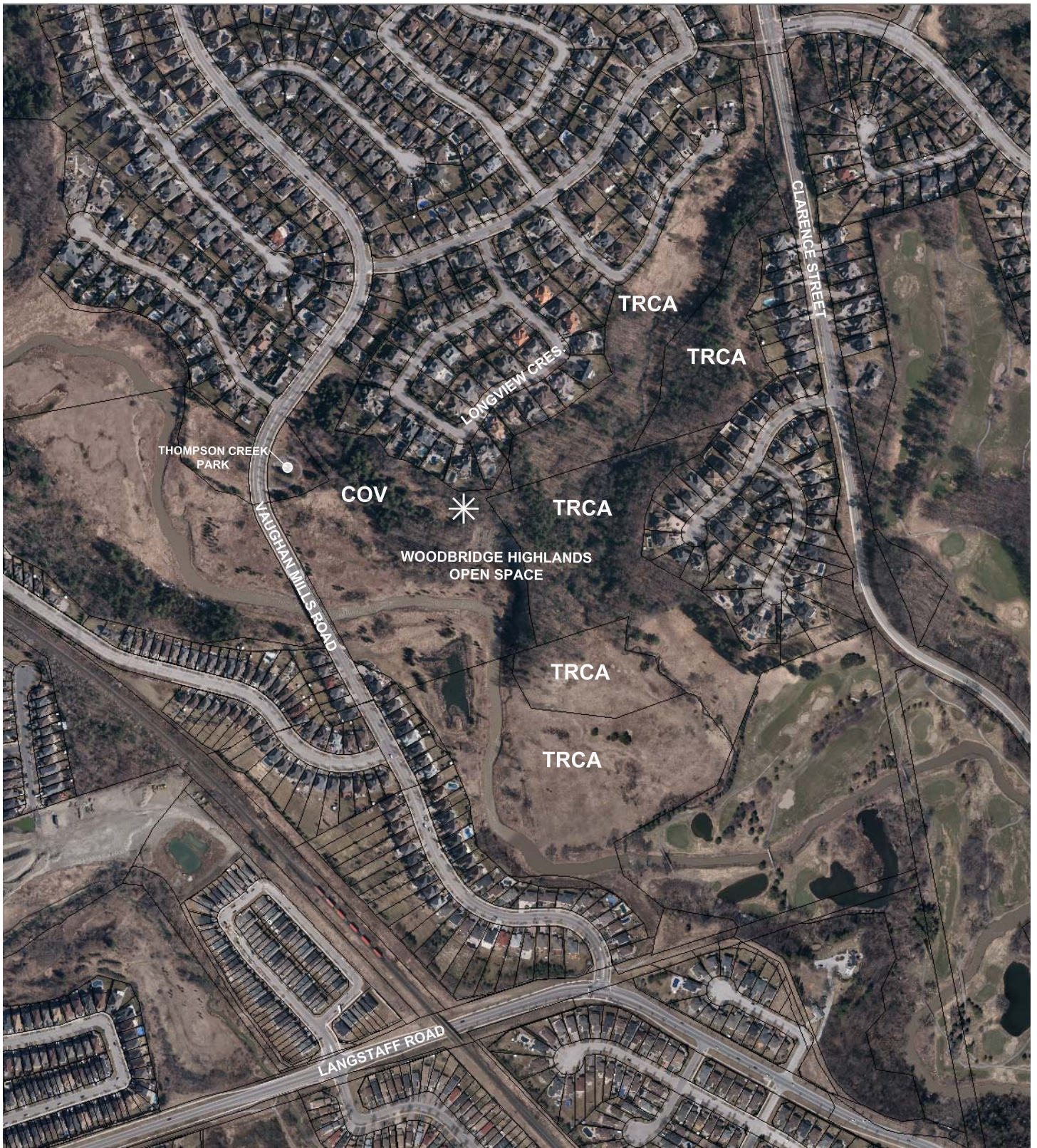
Report prepared by:

Melanie Morris, Manager, Parks Development & Construction, Ext. 8058

Respectfully submitted,

John MacKenzie,
Deputy City Manager,
Planning & Growth Management

Jamie Bronsema,
Director of Parks Development



 - Area of Erosion

Longview / Woodbridge Highlands Open Space (OWNERSHIP)



DRAWN: M.K. APPROVED: MM
SCALE: N.A. DATE: MAR.21.2016

Location Map

PARKS
DEVELOPMENT
DEPARTMENT



File:15726\Vaughan\Longview SS
Date: December 8, 2015

City of Vaughan
2141 Major MacKenzie Drive
Vaughan, Ontario
L8A 1T1

Attention: Ms. Melanie Morris, **OALA, CSLA**
Manager of Parks Development and Construction

Re: 111 Longview Crescent Slope Erosion

This is to summarize our discussions regarding the above site. I had the opportunity to review all documentation provided by the City and by TRCA and I attended a site meeting. My review was focused on the technical aspects of the available data in order to understand the possible causes of the recent ground movement.

The major sources for the technical information were documents that were prepared by Soil-Eng Ltd. in 1988 and a more recent (2014) review by LVM.

The LVM review of the site in 2014 included a shallow (approximately 2m deep) Dynamic Cone Penetration (DCP) test. The problem was identified as a "shallow seeded failure" of the crest of the slope caused by surface erosion and no evidence of deep failure was noted.

The Soil-Eng report (1988) was prepared for the subdivision that was proposed at the time. It includes a number of borehole records and discussion regarding the slope stability aspects in relation to the proposed development. The report states that "a general bank inspection showed that it is geotechnically stable and free of scars that indicate deep-seated slope failure." Borehole SS3 in the vicinity of the property (111 Longview), indicates that an approximately 4m thick layer of relatively permeable silty fine sand is overlaying silty clay till of very low permeability. The upper silty fine sand is highly frost susceptible and water erodible and will lose shear strength with an increase of water content. Thus it is possible that water accumulated in the permeable layer that seeped at the slope face and caused the erosion and loss of stability.

Although this could explain the failure of the slope along the property line, a more thorough investigation should be conducted in order to eliminate other possible causes.

A qualified geotechnical firm should be retained to prepare a report that addresses the cause of the slope failure and makes recommendations for the remedial work required to restore grades at the property line to the original elevations. The report should identify possible alternatives and include all of the technical information required for the detailed design and construction.

The terms of reference for this project should include the following:

Definition of the Objective of the report:

The objective of this report is to determine the causes of the slope failure at 111 Longview Crescent and to make detailed recommendations for the remedial work required to restore the property grades to a safe and sustainable condition. It is the consultant's responsibility to determine the extent of the field investigation required to achieve this objective.

Information to be provided to consultants:

This should include field measurements and reports available in the City files. We are also recommending that the survey prepared by Ivan B. Wallace OLS, dated August 2014, should be updated prior to proceeding with this project.

Field work to be performed by consultant:

The consultant should decide on the need and extent of any field work required in order to achieve the objective of the report. The consultant will make its own arrangement with the property owners, City and TRCA to enter and to conduct their investigation.

Deliverables:

1. The report shall determine the cause of the slope failure.
2. The report will determine whether the failure is part of the overall slope stability or it is only a localized slope failure.
3. The report will investigate possible alternatives for the remedial work and make a recommendation for the most appropriate alternative. Each alternative should include a conceptual sketch and evaluation of the practicality, cost and long term performance. The most appropriate alternative shall be selected.
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Trusting this is in accordance with our discussions. Please contact me if you would like to discuss the next step in this process.

Yours truly,

KEEWATIN GROUP LTD.



Jan Svihra, P.Eng.

Erosion at rear –yard impacting landscaping features



Cracking in concrete pad



Woodbridge Highlands Open Space view towards rear yards on Longview Crescent



Woodbridge Highlands Open Space view of significant erosion scars





Project Summary

Project Number: Project Title: Woodbridge Highlands Open Space Erosion Remediation Asset Type: PKS004 Parks Facilities Department: Parks Development Budget Year: 2016 Scenario Name: Main Approval Year: 2016 Scenario Active: Yes Project Stage: Current Year Approved/ Future Years Recognized Regions: Ward 2 TCA: No Project Type: Health and Safety																																																											
Project Description Project includes hiring of surveyor, geotechnical and engineering consultants to initiate investigation and preliminary design of erosion stabilization work at Woodbridge Highland Open Space. This will be a multi phase project.																																																											
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