



Report to: General Committee

Report Date: September 15, 2014

SUBJECT: City-wide Stream Erosion Master Study Update
Class Environmental Assessment

PREPARED BY: Robert Muir, Manager, Stormwater, ext. 2894
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RECOMMENDATION:

- 1) **THAT** the report entitled “City-wide Stream Erosion Master Study Update, Class Environmental Assessment,” dated September 8, 2014, be received;
- 2) **AND THAT** the recommendation to complete erosion restoration at priority erosion sites along Markham’s watercourses as detailed in the Environmental Study Report (ESR) be endorsed;
- 3) **AND THAT** staff be authorized to file the ESR for the mandatory 30 day public review;
- 4) **AND THAT** staff report back in 2015 with a 5-year implementation plan for restoration of priority sites including funding, easement, inspection and maintenance requirements for private property erosion restoration sites;
- 5) **AND THAT** staff be authorized and directed to do all things necessary to give effect to this resolution.

EXECUTIVE SUMMARY:

N/A

PURPOSE:

The purpose of this report is to seek Council’s endorsement of the recommended restoration implementation plan to address the erosion along Markham’s watercourses, and authorize staff to file the Environmental Study Report (ESR) for the mandatory 30 day public review.

BACKGROUND:

The City of Markham is drained by nineteen watercourses, including tributaries of the East Don River and the Rouge River; see Study Area Map – **Attachment A**. Both of these rivers are important natural resources within southern Ontario and the focus of specialized studies by regulatory agencies and municipalities through which they flow. The impacts of urbanization on natural watershed processes, if not carefully managed, can often result in alterations to receiving watercourses. Specific impacts may include changes in flow regime, erosion, sediment transport, and water quality. Each of these

impacts can create a risk to public health and safety, public infrastructure, and may affect the quality of terrestrial and aquatic habitat.

In 2007, the City completed its first Erosion Restoration Implementation Plan which identified 307 sites, in which a list of top 30 priority erosion restoration sites within the City was identified. These top 30 sites included those on public, City-owned land, as well as private land. The cause of erosion at these sites varied and could include increased runoff from upstream development, natural processes, watercourse alteration by the property owner, or a combination of these causes.

The City is responsible for the funding of erosion restoration on public lands and on some private lands depending on the cause or erosion. In order to assess responsibility for restoration works on private properties, council approved the following categorization for erosion sites on private properties on February 20, 2007:

- Category A:** Erosion problems within private property which are the results of altered flow regimes due to upstream development. Funding for addressing erosion exacerbated by development will be funded by City.
- Category B:** Erosion that is not related to urbanization but is a result of natural process of river behaviour. Costs for design, construction and maintenance of such erosion control works will be shared between the benefitting property owners and TRCA, as per TRCA's Private Landowner Contribution Policy, carried out on a priority basis and subject to all necessary approvals and available funding.
- Category C:** Erosion of private property due to the alteration to watercourse by property owner and upstream development. Cost sharing with property owners on a site by site basis should be negotiated.

Based on these guidelines, the City would focus on Category A and C sites where it is responsible for upstream development impacts to the watercourse. For Category C sites, work will not commence until cost sharing agreements with private property owners are established. Category B sites may be addressed by TRCA and the private owner. Where City infrastructure is at risk, restoration of sites will be completed with City funding, regardless of the cause of erosion.

The City to date has undertaken restoration work at fifteen (15) of the top 30 priority sites identified in 2007 and at three (3) additional sites which were amended to the priority list. Twelve (12) of the restored sites are in public property and the remaining six (6) of the sites are in private properties under Category A.

In 2013, the City initiated the City-Wide Stream Erosion Study Update to re-examine previously identified erosion concerns, and to document any new sites that may have developed since the initial field investigation was completed in 2005/2006. This study

has been carried out under the Municipal Class Environmental Assessment (Class EA) Planning and Design Process and is intended to develop a mitigation plan that will minimize risk to public safety and municipal infrastructure.

OPTIONS/ DISCUSSION:

Summary of the Class EA Findings

The ESR identifies 458 erosion sites which includes a new set of top thirty (30) prioritized erosion sites as shown in Attachment B, and 248 sites that exhibit only minor erosion that would not require restoration. The top thirty (30) sites include some but not all of the fifteen (15) 2007 priority sites that have not been restored, which reflects both changing watercourse conditions and an updated prioritization method. The majority of sites lie within the Rouge River watershed which reflects that fact that this is the largest City watershed and that it has experienced the greatest urbanization. It also reflects the fact that a significant number of sites have already been restored in the Don River watershed in recent years (e.g., East Don River and Pomona Mills Creek sites). Details of each priority site location including descriptions of erosion and proposed remediation, Class EA schedule, required approvals, and estimated remediation costs have been tabulated and are presented in Attachment C.

The Attachment C table also identifies the property ownership at each site. The top 30 priority sites include:

- 19 sites on private property
- 11 sites on public property

Based on the assessed cause of erosion, private property sites have been assigned to the private erosion site categories as listed in Attachment D. Six (6) of these private property sites fall within Category B which would not be eligible for City funding as the erosion is due to natural processes and no City infrastructure is at risk. Therefore twenty-four (24) sites are eligible for full or partial City funding.

Staff is to report back in 2015 with a 5-year implementation plan for restoration of eligible priority sites including funding, easement, inspection and maintenance requirements for private property erosion restoration sites;

Public Consultation

Consultation has been undertaken as an integral part of this City-Wide Stream Erosion Study Update. Meetings and written consultation were undertaken with regulatory agencies from the outset of the study. Public consultation later in the study included circulation and discussion of initial study findings.

One meeting was held with representatives from the Toronto and Region Conservation Authority (TRCA), the Ministry of Natural Resources (MNR), the City, and Study team. MNR and TRCA were consulted on the priority ranking criteria for erosion restoration sites, and TRCA was also circulated on the draft Public Information Centre (PIC)

materials which included draft restoration concept drawings. A copy of the draft ESR was also provided to TRCA for review.

One public meeting was held at the Civic Centre Great Hall on June 18, 2014 to inform residents of the study and to solicit input with respect to priority restoration sites and erosion restoration alternatives shown on Attachments B and C. To advise of this PIC, a newspaper advertisement was placed in both the Markham Economist & Sun and the Thornhill Liberal on the June 5th and June 12th issues. Notice of the meeting was also sent to numerous interest groups and residents who would be directly affected by restoration works at the priority erosion site locations. The public meeting was held in an open house format with display boards that included information of the Class EA process, an explanation of erosion concepts, a history of actions taken by the City with respect to identifying and remediating erosion sites, and an overview of the type of erosion sites found within Markham with associated potential risks to the public, infrastructure, and fisheries. Members of the study team from the City and its consultant AECOM were present to answer questions. Four residents attended the public meeting, and one attendee provided comments regarding the erosion history on their property.

Next Steps on EA Process

Pending Council's endorsement of the ESR for the Markham Erosion Restoration Implementation Plan, the ESR will be filed for the 30 day review period. Notices of the Study completion will be placed in the local newspaper and mailed to reviewing agencies and all landowners directly affected by restoration works at the priority erosion sites. During this review period, any person who objects to the proposed project may request the Ministry of the Environment to issue a "Part II Order" requiring the City to complete an individual Environmental Assessment for the project. The City would normally deal with any "Part II Order" request through negotiation with the person placing the request and/or applying to the Ministry to have the request denied.

If no "Part II Order" requests are received, the City-wide Stream Erosion Master Study Update Class EA is considered approved by the Ministry of the Environment, and staff will present a Council report with a 5-year implementation plan in Q1, 2015. This plan will include an assessment of the cause of erosion for each Category C private property site as input to cost-sharing negotiations. The plan will also recommend City easement, inspection and maintenance requirements for private property erosion restoration sites.

As part of any Class EA, the ESR should be reviewed on a 5 year basis to ensure consistency with new policies and to update priorities due to changes of erosion conditions over time. The field inventory shall be completed at least every 5 years to determine whether there are any new erosion sites that pose a risk to public health and safety or whether previously identified sites should receive greater priority for restoration. Accordingly, the next master study update would commence in 2018.

FINANCIAL CONSIDERATIONS AND TEMPLATE:

Each priority eligible site as outlined in the Environmental Study Report will be requested as part of the annual capital budget process. Cost per site is site specific and will be assessed prior to the budget process. A capital budget request will include, but not limited to design, construction, contract administration, internal project management, restoration work, contingency and/or Class EA study depending on the requirements of the specific site.

For 2015 and onward, each funding request will be funded 65% from Development Charges attributed to new development and 35% from the Lifecycle Replacement and Capital Reserve. The Life Cycle Reserve has already included \$13.9M of funding over a 25 year lifespan to address erosion restoration (75 sites). The 2013 Development Charges Background Study identified \$16.6M of funding for erosion restoration up to 2031.

Staff will report back to Council in 2015 on a cost-sharing policy as it relates to private owners. Work will not commence until cost agreement with private property owners are established, unless City infrastructure is at risk.

HUMAN RESOURCES CONSIDERATIONS:

Not Applicable

ALIGNMENT WITH STRATEGIC PRIORITIES:

The City-wide Stream Erosion Master Study Update provides an implementation plan of restoring erosion of watercourses within the City, which would enhance and protect the quality of the watercourse. As such, this study aligns with the City's strategic priorities.

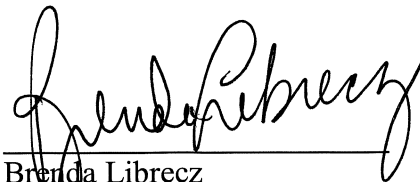
BUSINESS UNITS CONSULTED AND AFFECTED:

The Finance Department has reviewed this report and their comments have been incorporated.

RECOMMENDED BY:



Phoebe Fu, M.Eng., P.Eng., PMP
Director, Asset Management



Brenda Librecz
Commissioner, Community & Fire Services

ATTACHMENTS:

- Attachment A - Study Area
- Attachment B - Top Thirty Priority Erosion Sites
- Attachment C - Recommended Implementation Plan
- Attachment D - Categorization of Erosion Sites on Private Land