TO: CHAIR AND MEMBERS PLANNING COMMITTEE MEETING ON JUNE 20, 2005

FROM: PETER W. STEBLIN, P.Eng. GENERAL MANAGER OF ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER

SUBJECT EROSION AND SEDIMENT CONTROL REQUIREMENTS AND PRACTICES FOR CONSTRUCTION SITES TO ENSURE WATER QUALITY PROTECTION FOR OPEN WATERCOURSES

RECOMMENDATION

That, on the recommendation of the General Manager of Environmental and Engineering Services and City Engineer, this information report on Erosion/Sediment Control Requirements and Practices for Construction Sites to Provide Water Quality Protection for Open Watercourses BE RECEIVED and reported to Municipal Council for their information.

BACKGROUND

Purpose:

The purpose of this report is to provide Council with the requested comprehensive update on Erosion & Sediment Control (ESC) Requirements and Practices that the City endorses for land development and construction sites in order to ensure adequate protection of water quality in open watercourses within the City's boundaries.

Context:

The land and water in Ontario Watersheds are part of our natural resources. In order to protect these valuable resources from land erosion or from water pollution caused by construction activities, it is essential to implement and monitor all required erosion/sediment control measures and methods.

A rapid increase in erosion and sedimentation can be caused by uncontrolled construction activities which can result in serious damage to the environment. High erosion rates may also result in the loss of valuable topsoil, and subsequent changes in the sedimentation of rivers and lakes that may affect water supplies, flood control, fishing and recreational activities.

In 1987, the "Ontario Guidelines on Erosion Sediment Control for Urban Construction Sites" were developed by the Ministries of Natural Resources, Environment, Municipal Affairs and Transportation & Communications, as well as by the Association of Conservation Authorities of Ontario, the Municipal Engineers Association and the Urban Development Institute of Ontario.

The major objectives of these guidelines were to identify the methods and practices that should be used to manage erosion and sediment control storm flow discharges on land development construction sites, and to provide adequate protection of open watercourses in Ontario.

The City of London adopted these Guidelines in the late 1980's and all site grading and servicing drawings accepted by the municipality for construction identifies erosion/sediment control provisions for proposed development and construction activities on sites.

Based on further legislative requirements introduced in Ontario from 1991 to 2003 regarding the protection of water quality within open watercourses and stormwater management (SWM) water quality control mitigation measures to address land use changes, the Environmental and Engineering Services Department (EESD) has updated and developed new provisions, standards and practices that endorse the required ESC measures and practices.
Discussion:

The issue of ESC and stormwater runoff from construction sites has been identified as one of the major sources of water pollution in Ontario. Since the early 1990's, the City of London, as we stated previously, has updated and developed a number of new provisions, standards, procedures and practices to ensure compliance with the Ontario legislative requirements related to the Ontario Water Resources Act (OWRA), the Environmental Protection Act (EPA), Conservation Act, the Federal Fisheries Act, and various others.

Based on the City's existing planning and engineering review of procedures for development applications, and specifically subdivision applications, there are four following stages whereby the Developer's Consulting Engineer is required to identify the proposed ESC measures and practices, as well as to ensure the required compliance:

- The subdivision/servicing agreements;
- The site alteration agreements;
- The final servicing drawings acceptance; and
- The Maintenance and Monitoring Procedures and Reporting review and acceptance.

At the subdivision/servicing agreement stage, a Functional Storm/Drainage and SWM Servicing Works Design Report is required and is reviewed and accepted by EESD, prior to the agreement being finalized. The provisions related to site specific ESC measures and procedures are identified in functional reports and typically include, but are not limited to, the following:

- What type of "erosion/sediment control devices" are selected;
- When and where these devices are to be installed;
- The land slopes and proposed land alterations;
- The need for enhanced erosion and sediment control measures;
- Downstream sensitivity of water resources;
- Proximity to Environmental Significant/Sensitive Areas;
- Infiltration measures and the existing groundwater levels (compliance with the Hydrogeotechnical report recommendations for the subject lands);
- What type of reporting system is proposed;
- The Developer's Engineer inspection requirements; and
- A cost estimation of security allocations for potential restoration works.

EESD has required these ESC provisions in functional reports since October 2003.

At the site alteration agreement stage, a temporary site grading and drainage design that identifies site alteration parameters and impacts on the adjacent lands must submitted for review and acceptance by EESD, prior to the agreement being finalized. The site alteration agreement also requires that:

- The site grading and drainage design incorporate the hydrogeotechnical study recommendations;
- Site alteration activities be in compliance with hydrogeotechnical study recommendations; and
- The Consulting Engineer provides formal certification that ESC measures were properly installed and were regularly maintained.

EESD has required these ESC provisions since 2003.

At the final servicing drawings review stage for various land development applications, all required ESC measures and procedures are identified on these drawings, and are to be in compliance with applicable standards, as well as to all the specifications and satisfaction of the City Engineer (implemented late 1980's).
The **maintenance and monitoring procedures and reporting stage** regarding construction activities on sites and in accordance with the subdivision/servicing agreement provisions, was approved by Council in February of 2004. The Developer and their Consulting Engineer are required to comply with the following requirements:

- Certify that all ESC measures were installed prior to construction;
- Certify that all ESC measures are being maintained and operating as intended;
- Developer's consulting engineer must *submit ESC monitoring reports...Monitoring reports are to be submitted by April 1, July 1, and November 1 of each year until all works and services of the plan are assumed*; and
- Developer's consulting engineer must submit the semiannual SWM monitoring reports for a minimum period of two years (implemented in 1996 and updated in February of 2002).

**Conclusions**

In the past EESD has experienced numerous difficulties to secure the required ESC implementation works. Presently at some previously approved subdivision construction sites, we are still occasionally experiencing difficulties due to the specific site conditions and/or lack of upgraded ESC measures that were not implemented from the beginning of construction. However, we made a substantial progress to apply ESC measures at new subdivision sites, in particular, two construction sites immediately adjacent to the Sifton Bog Conservation Area.

The ESC measures plan was developed for Sifton Bog construction sites that included:

- The detailed specific ESC measures and procedures;
- The required construction supervision;
- The reporting system; and
- The adequate security fund allocations.

This plan was identified in the special provisions of the Sifton Bog subdivision agreement and was successfully implemented.

In addition, as a result of the SWM facility functions, all SWM facilities located within the construction sites provide ESC for storm run-off discharges from these lands into open water courses. For the last 5-7 years approximately twenty two SWM facilities were constructed in the City of London. The SWM facilities:

- Represent the end of storm/drainage systems that service new developments;
- Discharge urbanized storm runoff to open watercourses;
- Provide water quality mitigation measures to address land use changes; and
- Provide a temporary sediment control during construction activities, as long as they have been operating properly.

The City of London continues to aim to improve ESC practices, update our SWM water quality criteria, standards and requirements as well as to improve the reporting system in order to ensure that the City of London's open watercourses are adequately protected.
Acknowledgements:

This report has been prepared by Berta Krichker, M.Eng, P.Eng, Stormwater and Sewer Engineer, Wastewater and Drainage Engineering.

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June 6, 2005

C.c. David Ailles—Director of Administration and Development Services
Lois Burgess—Divisional Manager of Development Services

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