



A GENERAL GUIDE TO

EROSION & SEDIMENT CONTROL (ESC) ON LARGE CONSTRUCTION SITES

By-law Overview

Soil erosion on construction sites can be a major source of water pollution in the City’s drainage system, having a considerable impact on the system’s capacity to function and a significant detrimental impact on creeks and streams.

The City’s Erosion and Sediment Control By-law requires all construction sites within Surrey to ensure that the construction site is managed to prevent soil becoming a stormwater pollutant. Under the by-law, the allowable pollutant level is 75 mg/litre Total Suspended Solids (TSS), which can be achieved through appropriate construction site management.

This guide provides general information pertaining to the ESC By-law’s requirements on large construction projects, which are defined by having a total disturbed construction area of equal to or greater than 2000 m².

While the by-law requires large construction projects to implement Best Management Practises (BMP’s) during construction as with smaller construction sites, larger projects are required to take out an ESC Permit prior to the commencement of construction.

The complexity of larger construction projects is considered to require professionally designed ESC plans and site management that correlates with the greater associated risk of stormwater pollution.

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Engineering Department
City of Surrey

This guide provides an overview of what is required under the ESC By-law on large construction projects.

Does this apply to your project?

If you are proposing to undertake construction that results in a disturbed area equal to or greater than 2000 m² then this guide applies to your project.

What’s Inside

- ESC Permit Applications
- Overview of the ESC permit
- Site Management during construction
- Site Investigation and By-law Enforcement





The City has published the above guides to assist people applying for ESC Permits.

Effective Erosion and Sediment Control

The ESC Permit process establishes a framework to ensure that mandatory standards are applied to construction site ESC planning and management, which is conducive to the proposed construction, scheduling and specific site conditions, such as site drainage, topography and soil characteristics.

The use of best management practices (BMP's) to control erosion and sediment on construction sites is intended to reduce and, if possible, eliminate the export of sediment-laden water into the City's stormwater system. In order for erosion and sediment controls to be effective they need to be appropriately designed, implemented, inspected and maintained. Poor BMP performance or failure not only stems from inadequate design considerations but is more frequently a result of poor installation, inspection, and maintenance practices. These issues are all addressed through the ESC permits conditions and requirements.

ESC Permit Applications

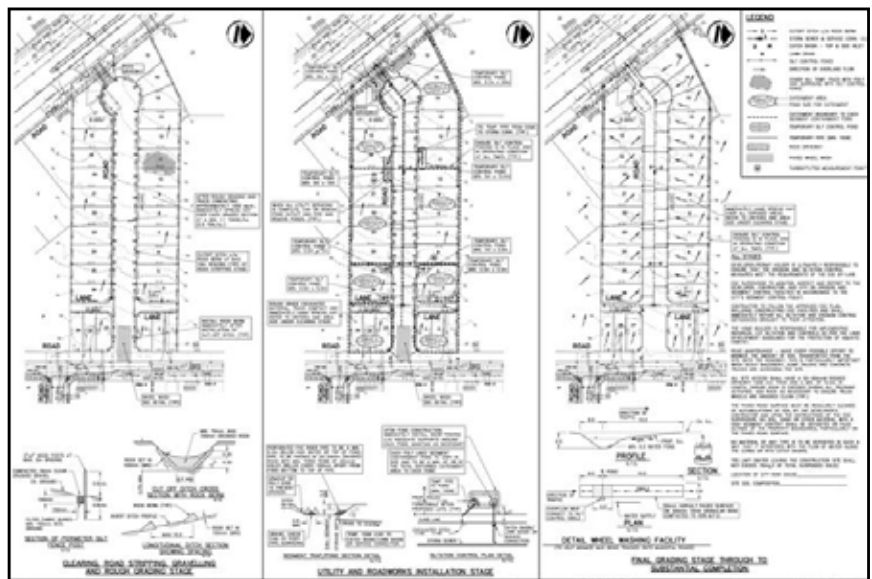
Erosion and Sediment Control Permit applications are made through the City's Engineering Department and are required to be issued prior to the release of associated construction permits. ESC Permits are commonly associated with but not limited to Land Development Servicing Agreements, Building Permits and Soil Deposition/Removal Permits.

The City has published a *General Guide to ESC Permit Applications* as part of this information series; please refer to this guide for further information regarding the application requirements process.

ESC Permit applications can also be submitted to the City of Surrey using an on-line system that allows applicants to quickly and easily:

- apply for and update their ESC Permit application
- pay their Permit Application Fee
- track the status of their ESC Permit application

The on-line ESC permit system is available on the City's website (www.surrey.ca); please refer to the *General Guide to On-line ESC Permit Applications*, which is also part of this information series.



An example of a staged ESC plan required as part of the permit application

ESC planning on large construction projects starts with the proposed ESC Plan. The primary component of the permit is that the applicant retains a professional engineer and ESC supervisor to design and sign off on a detailed three-stage erosion and sediment control plan. The plan will outline and detail the most appropriate cost effective BMP measures for your site and ensure that control measures adapt to reflect changing site conditions as work progresses.

Site Management during Construction

As part of the ESC By-law, sites that require an ESC permit are obligated to implement an inspection and maintenance program to ensure that planned ESC facilities meet the by-law's water quality limit. In addition, ESC monitoring and reporting on all sites will ensure equal standards are applied and that problems can be identified and addressed within appropriate time frames. These effects will limit damage to the City's drainage network.

Site Inspection Requirements

ESC permitted projects are required to have the ESC Supervisor conduct regular inspections and reports as per the City's ESC policy. Further information is available in the document Monitoring and Reporting Requirements for ESC Permitted Sites available on the City's webpage. Active sites during winter must be inspected at least once every 7 days and within 24 hrs following significant rainfall events. Inspection frequency can be modified upon agreement in writing between the ESC supervisor and the City dependant on prevailing weather conditions, the level of activity/staging on site, and site performance.

ESC Problem Resolution

Any damage or deficiencies identified through site inspections and monitoring are to be mitigated as soon as practical after the inspection but no later than 7 days after the inspection. Should the identified deficiency result in significant risk or damage to the receiving drainage system then immediate action should be taken to rectify the deficiency to an acceptable level.



The sediment control facility pictured above is an example of one of the many BMP's that may be specified by the Engineer to manage the stormwater pollution by sediment, from the construction area.



Many deficiencies become obvious during rainfall, regular site inspections ensure that such issues are identified and that action is taken to manage similar occurrences in the future.



Site Investigation and By-law Enforcement

Please be aware that no construction is allowed to occur until an ESC Permit has been issued against the site.

Designated staff from the City of Surrey's Engineering and By-laws Departments may enter a site in order to carry out random site inspections and collect field samples to validate permit condition and compliance with the By-law.

Any course of action pertaining to the enforcement of violations committed under the ESC By-law will take into consideration the responsible parties that contributed to the breach and will result in stop work notices or ticketing.

As the holder of an ESC permit, you are not to cause or permit any person acting under the permit to commit an offence under the By-law. It is the permit holder's responsibility to ensure that due diligence is employed and demonstrated by all parties involved with the construction activity under the ESC Permit.

Frequently Asked Questions

What is considered disturbed area?

The disturbed area referred to within the by-law relates to any area that has the potential to cause the release of sediment or sediment-laden water from the construction project and includes all areas that are impacted by the associated works. This means that when applying this By-law, the City will calculate the total disturbed area including but not limited to, access roads, areas impacted by site traffic, staging areas, stockpiles, work areas around buildings, and cleared/proposed and landscape areas.

What is considered a Significant Rainfall Event?

A significant rainfall event is defined as being equal to or greater than 25mm of rainfall within any given 24 hr period.

Who is responsible under the Permit?

The Permit holder being the Developer and/or Property Owner is ultimately held accountable for ensuring that the site is appropriately managed under the ESC Permit. The City also deems the Professional Engineer responsible for poor performance that stems from the design of the ESC controls on the site and the ESC Supervisor accountable to ensure that the site is managed in accordance with the ESC Permit.

Why is erosion and sediment control on construction sites important to the City?

Sediment-laden stormwater that drains from construction sites into the City's drainage system has a considerable impact on storm drains, creeks and streams. An estimated four truckloads of sediment resulting from erosion is discharged off a residential construction site during a single rainfall event.

Each year the City has to remove the build-up of the sediment that settles in the drainage network at a considerable cost to residents. This material reduces the capacity of the system to function during storms, potentially causing flooding.

Sediment-laden stormwater also has a detrimental impact on the condition of the creeks and streams that support aquatic life, such as salmon eggs and fry. All these impacts occur at a cost to the greater community. The City is ensuring that proactive measures are taken to manage the problem at its source.

For more information

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