

Erosion and sediment control plan preparation guideline

1 Introduction

An erosion and sediment control plan (E&SCP) identifies the measures that will be implemented to minimise erosion and subsequent sediment loss from a site as a result of soil disturbing activities. It has two parts, a written methodology and a site plan.

The written methodology contains information on various aspects of the project and proposed erosion and sediment controls (E&SC). The site plan provides a visual understanding of the layout of what the site looks like, and includes details such as the location of E&SC devices and other relevant features.

1.1 When is an erosion and sediment control plan required?

Waikato Regional Council is encouraging all earthworks sites to have an E&SCP as a matter of “best practice” irrespective of the scale of the works and whether or not a resource consent is required.

Draft E&SCPs are generally required by Waikato Regional Council to support all land use resource consent applications for earthworks. Once consents have been granted a revision of the draft E&SCP is normally required to take account of design changes or specific consent requirements, prior to formal approval of the E&SCP by Waikato Regional Council.

Soil disturbance activities that do not require resource consents (ie permitted activity earthworks) should also have an E&SCP, with the level of detail required appropriate to the nature of the site and the works proposed. An E&SCP may be sought by Waikato Regional Council in order to determine if permitted activity standards are likely to be complied with and as a means of assessing compliance against those standards. If permitted activity standards can not be complied with then a resource consent is required to be obtained.

1.2 What standards should be used?

Waikato Regional Council’s “Erosion and Sediment Control - Guidelines for Soil Disturbing Activities” (January 2009) should generally be used as a minimum standard to design E&SC. In some cases the standards set out in these guidelines will need to be exceeded. For example sites with sensitive watercourses, steep slopes and/or high clay contents may need to have sediment retention devices with increased treatment capacities beyond the minimum guideline standards and/or chemical treatment systems.

2 Site plan

The plan should provide a clear picture of the layout of the site, the E&SC and any other relevant features. It is also useful to provide a second site plan showing the site topography and water drainage flow paths after re-contouring.

The symbols for E&SC devices are found in appendix 1 of Waikato Regional Council's guideline document, and should be used for the site plan.

The site plan should contain the following information:

- A title, date and drawing reference number, a north arrow, scale.
- A unique identification number for each erosion and sediment control structure.
- The extent of soil disturbance (earthworks footprint).
- The location of E&SC devices.
- Topsoil stockpiles.
- Identification of contributing catchments for each E&SC device.
- Identification of any 'no go' or buffer areas to be maintained on the site.
- Clearly marked areas of cut and fill.
- Arrows depicting the general flow path/direction of water within each catchment.
- All watercourses and/or overland flow paths.
- Historical/cultural sites.
- Site entranceways.
- The site boundaries.
- Contour lines.
- Any other relevant site information

3 Written methodology

3.1 Project description

This section should contain a description of the project, which should include information such as disturbed soil volumes, area of disturbance, and purpose for the works. The various construction components should be identified along with the sequence of events that will occur to complete the project from start to finish. A description of the existing site, including vegetation, topography, watercourses and other relevant matters, should also be included.

3.2 Estimate of sediment loss

A Universal Soil Loss Equation (USLE) should be used to estimate sediment loss from the site, especially for steep sites or sites with sensitive receiving environments. A brief analysis of the results of the USLE should be provided. This should include comment on the expected level of soil loss and any 'hot spots' where higher volumes of soil loss have been identified on the site. The results of the USLE should be considered along with the sensitivity of the receiving watercourse/s to provide rationale for the proposed E&SC measures.

3.3 Principles to minimise sediment discharge from the site

Principles for E&SC that will be applied to the project should be identified. It is recommended that plan developers become familiar with the underlying principles of erosion and sediment control contained within section 1.3 of Waikato Regional Council's guideline document and incorporate these principles into their E&SCP.

3.4 Design of erosion and sediment control devices

Each catchment on the site should be separately listed and the E&SC devices within that catchment should be specified, and uniquely identified. Detailed design information for each E&SC device should be provided including the contributing catchment size for each device. Design information should include aspects such as holding capacity and dimensions of E&SC devices as well as details of associated parts of the devices such as decant outlets and emergency spillways. Annotated drawings of proposed E&SC devices should be provided. Supporting calculations for E&SC device design should also be included where relevant. "As built" may be required for key E&SC structures such as SRPs.

3.5 Timetable and nature of site stabilisation

This section should include timeframes and methods for achieving stabilisation of all disturbed areas. Proposed re-vegetation techniques should be identified as well as instances where instant stabilisation methods will be used.

Grass seed and fertiliser application details, including application rates should be specified.

When planning site stabilisation, particular attention should be given to achieving stabilisation of all or most of the site prior to the winter earthworks exclusion period (1 May to 30 September). This is particularly relevant to steeper areas of the site or other areas which have been identified as 'hot spots' in a USLE.

3.6 Maintenance, monitoring and reporting procedures

This section should set out the regime for routine monitoring of the E&SC. Details should include the frequency of inspections, procedures for recording and reporting monitoring results, and the role description and qualifications of the personnel undertaking the monitoring. Site rehabilitation works and trigger levels for removing sediment from E&SC should be provided.

3.7 Heavy rainfall response and contingency measures

Information for this section should include actions that will be taken in the event of heavy rainfall. This could include aspects such as monitoring weather forecasts and undertaking additional inspections in the event of heavy rain warnings. Any additional control measures proposed in the case of heavy rain warnings should be identified here. Consideration should be given to installing a rain gauge onsite and recording daily rainfalls to determine when any rainfall related trigger levels have been exceeded (eg discharge sampling requirements) and for assessing the effectiveness of the E&SC proposed.

Contingency measures in the event of failure of any E&SC device should be identified.

3.8 Procedures for review and/or amendment to the E&SCP

An E&SCP should be considered a "living document." It is expected that amendments to the plan will be required as site construction proceeds.

This section should set out procedures for reviewing and amending the E&SCP. Review procedures should include consultation with Waikato Regional Council as amendments to the plan will usually require Waikato Regional Council's written approval.

3.9 Identification of specific site responsibilities

This section should identify the relevant personnel and chain of command for ensuring that the various aspects of the E & SCP are implemented. This may include aspects such as routine monitoring and maintenance, provision of design details for E&SC devices, and ensuring that E&SC devices have been constructed correctly.

3.10 Construction timetable

This section should include the sequence and timing for construction of the E&SC and bulk earthworks. The length of time that the construction works will take should be specified.

4 Additional comments

- It is good practice to include detailed draft E&SCPs (or if available approved E&SCPs) with contract documents. This assists contractors in understanding Waikato Regional Council requirements and accurately pricing the works required to implement the proposed E&SC.
- E&SCPs are generally prepared by engineers/consultants and implemented by contractors under the supervision of the engineer/consultants. Good communication between all parties will often result in a much improved E&SCP and aid its subsequent implementation.
- Waikato Regional Council arranges training courses for consultants and contractors to assist with complying with E & S control requirements. Please contact Resource Use staff at Waikato Regional Council for further information regarding training.