Geotechnical Reports

A geotechnical report may be required as part of a subdivision application to ensure development does not adversely affect slope stability in the area. A complete report should contain sufficient data and analysis to demonstrate that the integrity of the slope stability will be maintained. The scope of the report should be sufficient to predict the effect of the proposal on the potential for slumping or likelihood of land sliding, including the expected impacts on any adjacent land. Remedial measures should be technically detailed. The consequences of not following such recommendations should be explained in layperson's terminology to assist future landowners.

The report must include a statement confirming the study is intended for the subdivision approving authority to determine the suitability of land for subdivision. The report may be registered as an interest on the title at Information Services Corporation of Saskatchewan.

The report should include, but may not be limited to the identification of the following:

Project details

- scale and scope of the proposal (e.g. residential, industrial, phasing required);
- design of developments (e.g. houses with walk-out basements, buildings on slab foundation, roads);
- are the roads located in the best places to minimize slope instability;

Slope stability design analysis

- Cross-section showing the profile of the existing slope including soil stratigraphy and groundwater conditions (depth to water table) comprising the slope
- the name of the slope program and analysis method used (i.e. Limit Equilibrium, Bishop's Simplified, etc.) to conduct the stability analysis;
- soil's assumed shear strength properties (cohesion and coefficient of friction values) used to conduct the stability analysis;
- slope's minimum Factor of Safety against sliding before development (existing slope as is) and after development (anticipated slope conditions following development);
- cross-section drawing showing shape and location of the most critical slip surface (minimum Factor of Safety);
- depending on the scale of the development, cross-section details regarding critical slip surfaces may be required in more than one area.;

Feasibility

- amount of earthwork (depth of cuts and fills) that will have to be conducted for all developments;
- locate where earthworks will be moved and how equipment will work around the escarpment;
- should development be set back from the valley ridge, if so, how far;
- is the earthwork expected to change the factor of safety;
- with consideration to the scope of work involved, to what degree will the proposed subdivision area and/or surrounding land uses be affected by slope instability;
- alternatively, how may adjacent development affect this proposal;

Recommendations

- does each site have a safe building area sufficient for the proposed use;
- will each site require specific building construction evaluation and standards, if so, please identify and detail;
- are specific building types or developments not recommended and why;
- what landscaping and maintenance is or is not recommended and why;
- should development be monitored and/or assessed post-construction.