

Self-Screening Registration Criteria

P13: Terrain Mapping and Terrain Stability Mapping

Mandatory Knowledge Requirements

The Ministry of Forests and Range will only contract with qualified registered professionals to provide professional services for terrain mapping and terrain stability mapping assignments. Professionals providing this service must:

1. be members in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC), or another professional association in BC with a right to practice in this area of work;
2. have appropriate education, training and experience within the discipline of engineering, geological sciences, or earth sciences that are congruent with the terrain mapping and terrain stability mapping services required by the ministry;
3. have thorough knowledge about: geomorphology, surficial/Quaternary geology, airphoto interpretation, terrain mapping, and terrain stability mapping; forest road route planning, and forest road construction, maintenance, and deactivation techniques; geologic hazard and risk identification and analysis; landslide processes, gully processes, and fan destabilization processes; slope stability assessments; and harvesting and silviculture methods;
4. have considerable recognized specialization in terrain mapping, and terrain stability mapping, including reconnaissance terrain stability mapping (RTSM) and detailed terrain and terrain stability mapping (DTSM);
5. be thoroughly familiar with Provincial legislation such as the *Forest Practices Code of British Columbia Act* and *Forest and Range Practices Act*, and associated regulations under those acts including the Forest Road Regulation and the Forest Planning and Practices Regulation, among other legislation specific to the project;
6. have a comprehensive working knowledge and understanding of the principles and best management practices provided in the following government publications, among others as required:
 - Forest Practices Code of BC Mapping and Assessing Terrain Stability Guidebook (August 1999)
 - Forest Practices Code of BC Gully Assessment Procedure (February 2001)
 - Forest Practices Code of BC Riparian Management Area Guidebook
 - Forest Practices Code of BC Watershed Assessment Procedure Guidebook
7. have a comprehensive working knowledge and understanding of the principles, best management practices, and standards (as applicable) provided in the following publications:
 - “Terrain Mapping and Interpretations, Skill Sets for QRPs”
<http://www.degifs.com/pdf/Terrain%20Mapping%20and%20Interpretations%20JPB.pdf>

- Karst Inventory Standards and Vulnerability Assessment Procedures for British Columbia Version 2.0 <http://srmwww.gov.bc.ca/risc/pubs/earthsci/index.htm>
 - Guidelines and Standards to Terrain Mapping in British Columbia <http://srmwww.gov.bc.ca/risc/pubs/earthsci/012/index.htm>
 - Terrain Stability Mapping in British Columbia <http://srmwww.gov.bc.ca/risc/pubs/earthsci/terrain2/index.htm>
 - Terrain Classification System for British Columbia <http://srmwww.gov.bc.ca/risc/pubs/teecolo/terclass/index.html>
 - Standard for Digital Terrain Data Capture in British Columbia <http://srmwww.gov.bc.ca/risc/pubs/earthsci/terrain/index.htm>
 - Jacob, M. and O. Hungr (eds). 2005. Debris-flow Hazards and Related Phenomena. Springer, Chichester, UK: In association with Praxis Pub.
 - Fell, R., K.K.S. Ho, S. Lacasse, and E. Leroi. 2005. A framework of landslide risk assessment and management – State of the Art Paper. In *Landslide Risk Management: Proceedings of the International Conference on Landslide Risk Management*, Vancouver, Canada, 31 May – 3 June, 2005. Hungr, O., R. Fell, R. Couture, and E. Eberhardt (eds). A.A. Balkema Publishers, Great Britain.
 - IUGS Working Group on Landslides, Committee on Risk Assessment. 1997. Quantitative risk assessment for slopes and landslides – the state of the art. In *Landslide Risk Assessment: Proceedings of the International Workshop on Landslide Risk Assessment*, Honolulu, Hawaii, February 19-21, 1997. Edited by Cruden, D.M. and Fell, R. A.A. Balkema Publishers. Netherlands.
 - Australian Geomatics Society Sub-committee on Landslide Risk Management. Landslide Risk Management Concepts and Guidelines.
 - Wise, M.P., G.D. Moore and D.F. VanDine (eds). 2004. Landslide risk case studies in forest development planning and operations. B.C. Min. For., Res. Br., Victoria, B.C. Land Manage. Handb. No. 56. Web site: <http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh56.htm>
8. in the case of projects that come under the control and administration of BC Timber Sales (BCTS), obtain BCTS Environmental Management System (EMS) Level 3 training prior to commencing work on any BCTS Worksite.

Mandatory Experience Requirements

All registered professionals providing terrain mapping and terrain stability mapping services require a minimum of 5 years of demonstrated relevant professional experience in forestry or related resource industries in British Columbia. Registered professionals must have specific work experience in the following activities:

1. Detailed terrain mapping and classification of surficial materials, landforms, and geomorphic processes, using the B.C. Terrain Classification System.
2. Preparation of derivative maps of terrain stability based on air photo interpretation with field checking to appropriate levels, such as:
 - reconnaissance terrain stability mapping, including identification of “potentially unstable” and “unstable” terrain, or

- detailed terrain stability mapping, including identification of terrain stability classes I to V.
3. Presentation of data and interpretations in maps and reports, including: descriptions of surficial geology and materials, bedrock geology, and soils; slope processes and hazards; interpretations and recommendations for forest harvesting and road location.