



## Subdivision Preliminary Layout Review Requirements for Natural Hazard Assessments

### ***For Lands Subject to Natural Hazards Excluding Coastal Flooding or Tsunami***

The Approving Officer considers that the land (proposed lots and/or remainder) within your proposal may be subject to natural hazard(s) such as, but not limited to, flooding, erosion, land slip or avalanche. If the risk to persons and/or property is too great your proposal could be refused. If you wish to explore this aspect further, you should engage a Qualified Professional (QP), registered with Engineers and Geoscientists British Columbia (EGBC), to advise you. All proposed lots and any remainders must be assessed.

For assessing landslide hazards the QP shall provide a report that follows the most recent version of the EGBC Guidelines for Landslide Assessments in British Columbia and include the Appendix D: Landslide Assessment Assurance Statement, duly executed, with any report. Please note that for the purposes of that Appendix D statement, the Province of British Columbia does not have an adopted level of landslide safety. Also, the report must be provided for use by the Approving Officer and retention in the record of the approval decision.

For assessing flood hazards the QP shall provide a report that follows the most recent version of the EGBC Guidelines for Legislated Flood Assessments in a Changing Climate in BC and include the Appendix I: Flood Assurance Statement, duly executed, with any report. Please note that for the purposes of that Appendix I statement, the province of British Columbia does not have an adopted level of flood hazard or flood risk tolerance. Also, the report must be provided for use by the Approving Officer and retention in the record of the approval decision. Please note, additional requirements apply where the lands are subject to coastal flooding and/or tsunamis.

The Approving Officer could consider a subdivision plan at risk from an event, based upon a specific probability of occurrence of that event. When quantifying the frequency of occurrence of natural hazards, the QP must distinguish between two different types of events: damaging events and life-threatening events.

When considering damaging events only, unless otherwise specified, a probability of occurrence of 1 in 475 years (10% probability in 50 years) for individual landslide hazards should be used as a minimum standard. This value is the probability of the damaging event occurring. The QP is to identify the run-out extent, or area of influence, of the event.

Where the damaging event is a flooding hazard, a probability of occurrence of 1 in 200 years should be used as a minimum standard.

Where the damaging event is a snow avalanche hazard, a probability of occurrence of 1 in 300 years should be used as a minimum standard.

Where life-threatening catastrophic events are known as a potential natural hazard to a building lot the QP is to consider events having a probability of occurrence of 1 in 10,000 years and is to identify areas beyond the influence of these extreme events.

Large scale development must consider the same 1 in 10,000-year events and must also consider the total risk to the new development. When the total risk approach is used, international standards must be identified. The QP should clearly identify the calculation procedures used.



The requirements noted above vary from the information found in Appendix B of the EGBC Guidelines for Landslide Assessments in British Columbia and the QP must ensure that MOTI requirements are addressed in the report.

In Appendix B of the EGBC Guidelines, for any landslide assessments not considered Class 0, Independent Review of High-Risk Professional Activities is required, and applicable documentation must be submitted. The Review shall follow the EGBC Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work, Version 1.0, April 27, 2021.

If there are any questions regarding terms of reference, please ask your QP to contact us. Original reports are to be provided and are to be submitted in electronic form.

### ***For Lands Subject to Coastal Flooding or Tsunami***

The land within your proposal is subject to coastal flooding and/or tsunamis. The applicant shall engage a hydrotechnical engineer familiar with coastal flooding to assess the lands and provide recommendations for a setback from the sea and a flood construction level for any new habitable structures. The engineer shall follow the requirements in Section 3.5 of the Flood Hazard Area Land Use Management Guidelines dated January 1, 2018, as amended by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development. The engineer's report shall be submitted for review and acceptance prior to the submission of the final plan.

### ***Finding a Qualified Professional***

Assessment of natural hazards requires the expertise of Qualified Professionals (QPs), typically a Professional Geoscientist or a Professional Engineer.

You may need both to address your subdivision requirements. Engineers or Geoscientists are responsible to determine whether they are qualified to accept responsibility for natural hazard assessments. Engineers and Geoscientists of BC (EGBC) provides information on registered professionals, and related guidance (see [www.EGBC.ca](http://www.EGBC.ca)) on retaining the appropriate professional expertise.

In seeking a QP to do an assessment, you are advised to look at professional designation in the appropriate field of practice (directly and/or through EGBC), the extent of professional experience (number of years and similar assessments), the professional liability insurance and past work references.

Further information can be found in the EGBC Guidelines for Landslide Assessments in British Columbia, in particular, Section 5.0 Professional Registration & Education, Training, and Experience and Section 2.2 for guidance on the responsibilities of the professional, the client, and the approver. Investigation or interpretation of complex geological conditions in support of landslide assessments is typically done by a Professional Geoscientist in the discipline of geology, or a Professional Engineer in the discipline of geological engineering.

Designs for reinforced or mechanically stabilized slopes, retaining walls and other geotechnical structures to reduce landslide hazards need to be done by a Professional Engineer.