



IMPORTANT:
This decision tool is intended as guidance for BCTS staff and consulting professionals. Users should apply judgement. Exceptions may exist and indicated actions may be over-ruled, based on professional judgement and with rationale. Consultation with a qualified registered Terrain Specialist is always an option.

- Instructions**
- Completion of this form is mandatory for all BCTS proposed forest development within the Skeena Business Area.
- 1) Determine Consequence Rating using criteria on the reverse (Page 2) of this form.
 - 2) Check-off all decision points on the above flow diagram (refer to notes on Page 2 for clarification).
 - 3) Attach additional relevant information or rationales.
 - 4) Identify other related assessments required (Page 2).
 - 4) Sign and date this form.
 - 5) If a Site Review or TSA is planned, provide a copy of this form to the Terrain Specialist.
 - 6) File on secure Block / Road file.

Location: _____
(Cutblock, Road Segment, etc.)

Evaluated by: _____

Signature: _____

Rationale(s) attached? YES NO

Approved by: _____
(If evaluation was completed by non-BCTS employee)

Signature: _____

Date: _____



BCTS

BC Timber Sales
Skeena
EMS ISO 14001 Registered

Terrain Stability Assessments Decision & Documentation Tool April 2014

Reference Notes

#1 Preliminary Consequence Rating

The Coordinating Professional determines a preliminary consequence rating for applicable elements which could potentially be at risk from proposed forest development. (See 2002 Forest Road Engineering Guidebook (Appendix 10) for additional information and factors to consider in rating consequence.)

Element is Present but Not at Risk.
Attach Rationale and Do Not Include
Element in Consequence Rating.

a) Human Life / Bodily Injury

- i) People living in the "Zone" (downslope or potentially affected) (Residence, Yard, Public or Commercial Buildings, etc) H
- ii) High-Use Transportation Corridor: _____ H
- iii) Other High Use Area: _____ H
- iv) N/A (none of the above) L

b) Private Property (not Human Life)

- i) Cultivated / Cleared Property (consider level of use) M to H
- ii) Outbuildings M to H
- iii) Vacant Private Land (also consider future development potential) L to M to H
- iv) N/A (none of the above) L

c) Utilities

- i) Gas Pipeline, High-Voltage Power Line, Other: _____ H
- ii) Low Voltage Power Line, Telephone Line, Other: _____ L to M
- iii) Other: _____ L to M to H
- iv) N/A (none of the above) L

d) Transportation Infrastructure (not Human Life)

- i) Highway, Railway, High-Use Road H
- ii) Secondary Public Road (consider level of use) L to M to H
- iii) Very Low-Use Road L
- iv) Other: _____ L to M to H
- v) N/A (none of the above) L

e) Water Supply

- i) Community Watershed H
- ii) Domestic Consumptive Water User(s) downslope/downstream M to H
- iii) Irrigation System(s) downslope/downstream (consider use & # of users) L to M to H
- iv) N/A (none of the above) L

f) Fish Habitat

- i) Fish habitat within development area or directly downslope H
- ii) Fish habitat downstream of development (consider distance, stream order) L to M to H
- iii) N/A (none of the above) L

g) Visuals (consider location, visual sensitivity, prominence of viewpoints)

L to M

h) Other Values / Elements at Risk (specify) _____

L to M to H

#2 Development with Moderate or High Consequence on Steep Terrain, Upslope of Steep Terrain, <200 Above Sea Level (glaciomarine hazard), or where Karst Terrain Potential is Present.

- a) On slopes $\geq 45\%$? Y N
- b) < 200 metres upslope from $\geq 45\%$ ground? Y N
- c) < 300 metres upslope from $\geq 60\%$ ground or streams, NCDs, or wet areas present? Y N
- d) Upslope of IV, V, P, or U hazard polygon? Y N
- e) Snow avalanche hazard? Y N
- f) Karst Terrain Potentially Present (see Karst Potential Mapping for BC: <http://www.for.gov.bc.ca/hfp/values/features/karst/index.htm>) Y N
- g) Y N
- h) < 200 m above sea level Y N

Professionals should use judgement in applying the above criteria (e.g., consider extent of slopes, if isolated occurrence, etc.)

#3 Development with Low Consequence on Steep Terrain, Upslope of Steep Terrain, <200 Above Sea Level (glaciomarine hazard), or where Karst Terrain Potential is Present.

- a) On slopes $\geq 60\%$? Y N
- b) < 100 metres upslope from $\geq 60\%$ ground or IV, V, P or U polygon? Y N
- c) < 200 metres upslope from $\geq 60\%$ ground or IV, V, P or U polygons and streams, NCDs, or wet areas present? Y N
- d) Snow avalanche hazard? Y N
- e) Karst Terrain Potentially Present (see Karst Potential Mapping for BC: <http://www.for.gov.bc.ca/hfp/values/features/karst/index.htm>) Y N
- f) < 200 m above sea level Y N

Professionals should use judgement in applying the above criteria (e.g., consider extent of slopes, if isolated occurrence, etc.)

#4 Signs of Instability in the Field

Field indicators of potential slope instability (e.g., recent or revegetated landslide scars, curved or sweeping trees, tension fractures, mixed or buried soil profiles, poorly drained slopes, springs/wet areas, gully headwall areas, exposed soil on gully sides, displaced stream channels, step-like benches or small scarps, etc.). (Refer to references in Practices Document for more information on field indicators.)

#5 Upslope Development Concerns

Evidence or concern that existing upslope development may be affecting the subject area (e.g., drainage diversion / concentration).

#6 Type & Extent of Instability or Upslope Concerns

The person making this determination must have an understanding of the issues and must provide a rationale for not completing an assessment, based on technical and/or risk management factors (e.g., The potential instability is located well below the planned development & there is no drainage being directed onto the area / there is a bench downslope / consequence is low / etc.).

#7 Site Review

A preliminary (office and/or field) review by a Terrain Specialist to determine if, and where (locations), further investigation or assessment (e.g., TSA) is required and the nature of the assessment including the need for specialty services. See *Quick Guide Table* for full description of a Site Review and other types of assessment.

#8 Overriding an Indicated Assessment

Similar to Note #6 above, overriding an assessment that the Tool indicates is 'required' must include a written rationale and be based on specific technical and/or risk management factors. This rationale is to be signed and recorded in the Block/Road file.

#9 Complete TSA

Through a Work Assignment, the Terrain Specialist is provided with critical information (e.g., scope of assessment required, specific area(s) of concern, known elements at risk, copy of this form, any other supporting documents or information). See *Quick Guide Table* for full description of this level of assessment.

#10 Coordinating Professional Evaluates Report Findings (See Practices Document (Risk Criteria & Decision Making section) for more detail)

For a Site Review, results are reviewed and recommendations implemented as appropriate. For a TSA, the Residual Partial Risk analysis is also considered in relation to the value of the element at risk. Where the value of an element and estimated potential consequences are high, a decision to proceed to a Specific Risk Analysis is usually warranted. Specific Risk Analysis will consider consequences, including the vulnerability of the element at risk. This may require the involvement of other specialists with expertise related to the element (e.g., a biologist for fish habitat or a utility engineer for a transmission line, etc.).

#11 Management Review (See Practices Document (Risk Criteria & Decision Making section) for more detail)

The decision to undertake a Management Review should be based on the value of the element at risk and the results of the Residual Partial Risk or Specific Risk analysis. Each situation must be considered on its own merits. For example, where a residence is the element, a management review should occur wherever risk is greater than very low, while for a single water user POD a management review is probably not warranted unless risk is moderate or higher.

OTHER RELATED ASSESSMENTS / REPORTS REQUIRED:			
i) Risk Analysis	<input type="checkbox"/> Y	<input type="checkbox"/> N	
ii) Drainage Plan / Review	<input type="checkbox"/> Y	<input type="checkbox"/> N	
iii) Soil Erosion Assessment (SEA)	<input type="checkbox"/> Y	<input type="checkbox"/> N	
iv) Snow Avalanche Assessment	<input type="checkbox"/> Y	<input type="checkbox"/> N	
v) Road Upgrade Prescription	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/>
vi) Road Reconstruction Prescription	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/>
vii) Deactivation Prescription (roads and/or trails)	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/>
viii) Landslide Investigation	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/>