



SLOPE STABILITY POLICY

1. All Interfor Operations will have an annual "slope stability assessment" undertaken by the Area Engineer, consulting for areas one is unsure of with a qualified soil scientist or geotechnical engineer. This will be an overview to determine potential areas of instability during road construction and logging operations during the coming year, as well as potential instability associated with existing roads (i.e. lack of effective retirement, tension-cracked fill/sidecast slopes...). This review will be completed by the end of August. This will allow revisions to work scheduling, and any remedial measures to be undertaken and completed prior to the period of major rainstorms (usually, mid-October to mid-December). Areas previously assessed will be re-assessed if significant changes are planned in the type or scope of road construction or logging.

NOTE: Initially the engineers will have to cover areas already in Cutting Permit with varying degrees of development completed. But the classification requirements should become a part of their routine during road and logging layout giving ample time for making decisions and giving lead time for scheduling where and when road building and logging should take place.

2. Areas determined to be of questionable slope stability in the annual slope stability assessment will wherever possible be scheduled for road construction or logging during favourable weather conditions. For operations planned for the mid-October to mid-December period the slope stability assessment review as set above should determine the critical areas within which and below which operations should cease during major rainstorms (defined below). It should also include consideration of modifications to layout or methods (road construction and logging) that would reduce the risk of instability.
3. Camp manager for company camps and the contractor in contract camps will be responsible, upon receiving the information identifying areas of questionable stability from the area engineer, for the implementation of this policy including:
 - 1) setting up and maintaining a system for monitoring rainfall over the specified time period.
 - 2) making the decision to cease operations as set out in Tables 2 and 3 with respect to road building and yarding.
4. When the following rainfall limits are exceeded, all operations must cease within and downslope of areas that have been determined to be of questionable slope stability.

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TIME PERIOD	mm of RAIN
12 hours	75
24 hours	100
48 hours	150
72 hours	200

Operations can resume when 24 hour rainfall falls below 50 mm.

5. Before the commencement of any active operations in areas identified by the Area Engineer as having "questionable stability", Road and Logging Foremen must do their own on-site inspection of conditions in consultation with other persons with supervisory duties (ie. Falling Contractors, Hooktenders, etc.) Where these inspections are inconclusive, direction will be obtained from the Area Engineer, and where necessary, by the Area Engineer in consultation with a soil scientist or geotechnical engineer.
6. During active operations, reports by workers of exceptional rainfall, excessive ground water on sidehills, or minor slides will require immediate inspection by Camp Management, or cessation of activities until such inspection can be made. Where necessary, the Area Engineer will be called in for consultation.

This provision recognizes that conditions in a small portion of an operating area may be quite different from time to time from those anticipated, thereby making ongoing monitoring a necessity.

7. Deviations from this policy to reflect specific conditions in a given operation must be approved by the General Manager, Coast Forest Operations.

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TABLE 2													
TERRAIN CLASS	ROAD RELATED IMPLICATIONS												
I	No instability caused by road construction. Roads usually built by overlending (no cuts).												
II	Expect small cutslope failures immediately above roadcuts - ie. small sloughs or dry ravelling into the ditch. Promptly retire on completion of logging and cessation of regular road maintenance.												
III	Expect cutslope failures and a moderate risk of fill/sidecast failures, particularly if water control is inadequate or fails. Minimize roads through Class 3. Emphasize clean subgrade construction (ie. do not incorporate weathered soil, organics or debris into the subgrade - strip and dispose of these materials on the lower edge of the ROW); or partly end haul to reduce sidecast volume. Control blasting where heavy rockcuts are required. Consider pull-back of marginally stable fill/sidecast (eg. tension-cracked road edges). Pile the pull-back material along inside of road if loss of road access can be tolerated; otherwise, end haul to a safe disposal site. Promptly retire on completion of logging and cessation of regular road maintenance. Suspend operations during major rainstorms on slopes considered to be of "questionable stability".												
IV & V	High risk of both cutslope and fill/sidecast failures particularly if water control is inadequate or fails. Avoid roads through class IV and V wherever possible. Where unavoidable, full bench and end haul excavated material to a safe disposal site (unless material can be used to finish roads nearby). Consider sidecasting only if material is clean shotrock and some support occurs a short (50m) downslope (eg. bench, gully bottom..). Control blasting where heavy rockcuts are required. Promptly retire on completion of logging and cessation of regular road maintenance. Suspend operations during major rainstorms.												
<p>Major rainstorms are defined as follows:</p> <table style="margin-left: auto; margin-right: auto; border: none;"> <thead> <tr> <th colspan="2" style="text-align: center;">RAINFALL LIMITS</th> </tr> <tr> <th style="text-align: center;"><u>Time Period</u></th> <th style="text-align: center;"><u>mm of Rain</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">12 hours</td> <td style="text-align: center;">> 75mm</td> </tr> <tr> <td style="text-align: center;">24 hours</td> <td style="text-align: center;">> 100mm</td> </tr> <tr> <td style="text-align: center;">48 hours</td> <td style="text-align: center;">> 150mm</td> </tr> <tr> <td style="text-align: center;">72 hours</td> <td style="text-align: center;">> 200mm</td> </tr> </tbody> </table> <p>Major rainstorms are considered to have abated when 24-hour rainfall is <50mm</p>		RAINFALL LIMITS		<u>Time Period</u>	<u>mm of Rain</u>	12 hours	> 75mm	24 hours	> 100mm	48 hours	> 150mm	72 hours	> 200mm
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