

**Landslide Report Form****General Information**

Landslide Report#: _____ Date of Occurrence: 2017
 (Number according to: operation-year- investigation # e.g., HBO-06-01) FVO-18-02
 Operation: Fraser Valley Tenure: F.L. A19201
 General Location: East Anderson F.S.R. 22.5 km.
 Latitude: 49° 44' 40" Longitude: 121° 19' 53"
 Road: East Anderson F.S.R. Cutblock: -

Weather Conditions

Temperature (OC): _____ Precipitation (mm): _____ Wind Direction & Speed (km/hr): _____
 (e.g., 24 hr)
 Weather Description: Unknown, as slide occurred sometime in 2017

Site Description

Terrain Stability Class: _____ Average Slope (%): 70-75°
 Other landslides in the area: ☐ Yes ☒ No Slope Position: ☐ Top ☐ Mid ☒ Toe ☐ Flat
 Drainage: ☐ Well ☒ Moderate ☐ Imperfect ☐ Poor Gully Associated: ☐ Yes ☐ No
 Age/ Status of Road: > 30 years
 General Description: Reverse slips in rock face caused rock slide/failure onto road
 (e.g., Timber Type, Bedrock, soil type, etc.)

Landslide Description

Length (m): 30 m. Width (m): 7 m. Depth (m): 2-5 m.
 Area (ha): Productive 0 Non-productive 0.02 Total 0.02
 Impact to a waterbody? ☐ Yes ☒ No ☐ Unknown Fish Present? ☐ Yes ☐ No ☒ Unknown
 If Yes, describe waterbody: _____
 (e.g., stream class, name, etc.)
 Damage: Rock was deposited on road
 (e.g., roads, structures, resource features)
 Depth of soil on site: _____ Erosion Potential¹: Low
 % Exposed Bedrock 100 % Re-vegetation Potential¹: Low

Reporting

Forest Service Contact: M. Peters Date: June 19, 2018
 Other: _____ Date: _____
 (e.g., DFO)
 Attachments: (e.g., maps, assessments, notes, photos, file # references, etc.) Geotech Assessment completed by Madrone Environmental Services Ltd. ☐ Map ☐ Photos

¹ Rating of High/ Medium/ Low based on soil characteristics, slope, etc.

May 31, 2018

Mr. Mike Crane,
Teal Jones,
Hope, BC

**RE: Reconstruction of road across from rockslide, East
Anderson Mainline**

Dear Mike:

I visited the site of this rockslide on May 25, 2018 with you.

Observations

A section of road estimated at 30 m long, has been buried under a rockslide on East Anderson Mainline;
The rock face above (east of) the road stands at 70-75° for an estimated height of about 30 m;
The rock consists of hard, fine-grained sandstones and argillites of the Pasayten Group;
The rock strata dips at 55° towards 260°. This dip is coincident with the slope;
There are numerous wedges of various sizes that appear to be partly or mostly detached;
The road is buried under an estimated 2 to 5 m of coarse rock fragments, some exceed 5 m in median diameter.
Anderson Creek is located to the west of the road here. I did not measure the distance from the road to the stream;
The terrain between the slide deposit and Anderson Creek appears to consist of fluvial or alluvial deposits sitting at a low gradient.

Conclusions

I estimated that roughly 4000 to 5000 m³ of rock failed;
The rock face is unstable and will likely be subject to further detachment of wedges, resulting in an on-going rockfall hazard consisting mainly of individual or a small number of rock fragments;
The potential for a rockslide of similar magnitude cannot be discounted.

Recommendations

I suggest rebuilding the road but shifting the alignment to the right (west) to gain further distance from the rock slope. I understand that the extent of the alignment may be dictated by the need to maintain a riparian buffer on Anderson Creek.
Due to the on-going hazard I recommend using the angular rock fragments to construct a protective berm on the inside (east side) of the road;
Ideally the berm should be 2 to 2.5 m high and at least 10 m from the crest of the berm to the base of the steep rock face. The objective here is to protect road users from on-going rock fragment dislocation, and also to maintain sufficient capacity to contain these fragments.
The berm should be built from existing rockslide deposits, and ideally placed to ensure high internal friction (eg: interlocking angular fragments), ie not just piled randomly.
Given the high angularity of the fragments this should not be challenging.
The rock will not cause significant sedimentation; so I suggest that end-hauling can be kept to a minimum or avoided altogether.
The recurrence of a rockslide of similar magnitude is possible, and would not be contained within the berm. Therefore I recommend installing 'No Stopping' signs on both sides of the failure site.

Sincerely,



Gordon Butt, P. Geo.
Senior Geoscientist, Madrone Environmental Services Ltd.



Photo 1. Rock slide deposit has buried the road for an estimated 30 m section



Photo 2. Exposed rock face, standing at 70-75°. The dip of the rock strata is coincident with the slope, rendering it unstable, particularly for individual rock fragments. The hazard warrants construction of a protective berm.



Photo 3. Rubbly, Blocky rockslide deposit from the far (south) side



Photo 4. Close up of rock slope, showing dip coincident with the slope.