

Site 39 – Eyrie Gap Cut Slope

This site consists of a cut slope along the northwest side of the highway and approximately 3.2 km east of the junction between Highways 40, 541 and 940. The vertical height of the slope is approximately 8 to 10 m at an overall angle of 36°. The colluvium on the slope face typically consists of gravel to cobble size rocks with occasional small boulders.

There were numerous cobble to small boulder size rocks in the ditch between the toe of the colluvium and the edge of the pavement at the time of the inspection in September 2005 however there were no rocks on the road or visible damage to the asphalt due to past rockfalls.

The width of the ditch between the edge of the pavement and the toe of the colluvium is approximately 6 m. The depth of the ditch is approximately 1.5 m. The minimum slope angle for which the ditch sizing criteria chart shown on Figure B1 in Appendix B can be used is 38° (1.25H:1V). However, for comparison, the chart indicates that an 8 to 10 m high cut slope at 38° requires a minimum ditch width of 4 to 4.3 m and a minimum ditch depth of 1.2 to 1.4 m. The existing ditch exceeds these criteria.

There were two large boulders (approximately 1.5 m maximum dimension) in the ditch and within 3 m of the edge of the pavement at the time of the inspection (Photo 1). No other boulders of comparable size were visible in the area and it is not clear if these boulders actually originated from the cut slope and, if so, how they were able to roll to a position so close to the edge of the pavement.

AMEC recommends the following Risk Level factors for this site using the rock fall frequency-severity matrix:

- Probability Factor of 13 based on the appearance of the debris that suggests that several rockfalls occur each year.
- Consequence Factor of 1 based on no visual evidence of past rockfalls reaching the paved surface of the road.

Therefore, the recommended Risk Level for this site is 13.

It is recommended that the rocks between the toe of the colluvium slope and the edge of the road be removed to increase the clear width along the highway and to prevent the Consequence Factor from rising as more debris accumulates. Future ditch cleaning should be done as required and treated as an ongoing maintenance requirement.



Photo 1 – Facing west along the ditch at the toe of the colluvium slope. Cobble to boulder sized rocks have rolled beyond the toe of the slope, however there were no rocks on the road or signs of rockfall damage to the pavement. Two large boulders (approximately 1.5 m maximum dimension) were noted within 3 m of the edge of the pavement. There were no other boulders of comparable size visible in the debris and it is not entirely clear if these boulders actually originated from the cut slope.