

## Site 18 – Rock Cuts Between Ripple Rock Creek and King Creek

There are a series of rock cuts along the east side of Highway 40 between the Ripple Rock Creek and King Creek crossings. The cut slopes are near-vertical and approximately 4 to 5 m in height. The ditch along the toe of the cut slopes is typically 4 m wide and 0.75 m deep. Photos 1 to 3 show typical views of these cut slopes.

The rock exposed in the cut slopes consists of bedded shale and mudstone. The bedding of the rock is steeply dipping down to the west, with a strike that parallels the highway alignment. Therefore, the cut slopes expose a series of sheer bedding planes that roughly parallel the highway. The exposed bedding planes are generally intact and the cut slopes generate only minor volumes of rockfall debris. The rockfall debris typically consists of gravel to cobble-sized pieces of rock weathered out from the cut slope or released due to erosion of the rocky soil exposed along the crest of the cut slope. The rockfall debris is generally deposited along the toe of the cut slope. At the time of the inspection there were no rocks on the road and there were no signs of damage to the pavement from previous rockfalls.

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

- Probability Factor of 12 based on the appearance of the cut slopes and the rockfall debris that suggests that minor rockfalls occur nearly on an ongoing basis.
- 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 12.

It is recommended that the accumulated rockfall debris be cleaned from the ditch as a proactive measure. In the future, the ditch should be cleaned out annually in order to maintain its full capacity.





**Photo 1** (top) – Facing north along a rock cut along the east side of Highway 40, between the Hood Creek and Ripple Rock Creek crossings. These cut slopes are approximately 4 to 5 m high and the near-vertical cut face exposes westerly-dipping, near-vertical bedding planes that are parallel to the highway. Minor volumes of rockfall debris have accumulated at the toe of the cut slope over time. At the time of the inspection there were no rocks on the road or signs of damage to the pavement from previous rockfalls.



**Photo 2** (middle) – Facing south across a rock cut south of the Hood Creek crossing.



**Photo 3** (bottom) – Facing north across a rock cut south of the Hood Creek crossing. Note the relatively small volumes of rockfall debris along the toe of the slope and the relatively wide ditch.