

1.0 Site Visit

The Annual Inspection site visit was conducted on 29 May 2002. At the time of the visit, the weather was clear with a light breeze.

2.0 Significant Observations

The following observations, considered to be relevant to the stability of the slope were made:

- The settlement/cracking area shown on the site plan was repaved in October 2001. Minor cracking has developed in the patch since that time. The pattern and distribution of the cracking matches those noted in the summer of 2001. Photos 1 to 3 show the cracking in this area.
- Visual inspections downslope of the patched area did not indicate any other signs of movement.
- A new crack in the road surface was noted approximately 80 m south of the settlement/cracking area shown on the site plan (Photos 4 and 5). This crack extended discontinuously across the entire road surface in a northeast/southwest orientation. The appearance and orientation of the crack suggested that it could represent the south flank of a larger instability of the road fill embankment. It appears that this cracking began to form last year because portions of the cracks have previously been sealed by maintenance personnel.

3.0 Changes from Previous Visit

The condition of the settlement/cracking area shown on the site plan has not changed significantly since the previous inspection. The slope inclinometer and standpipes that were installed along the west shoulder of the road in this area during the 2001 site investigation by AMEC were paved over last fall. The slope inclinometer installed on the slope face below the road in this area remains accessible.

The crack approximately 80 m south of the settlement/cracking area was not noted during the previous inspection.

4.0 Discussion

The site investigation and instrument readings by AMEC in the summer and fall of 2001 indicated that slope movement was occurring along the base of the road fill in the previously-identified settlement/cracking area. The spring 2002 readings on the slope inclinometer on the slope face below the settlement/cracking area, as well as the newly-formed cracks in the patch, have shown that this movement is continuing. AMEC has commenced the design of remedial measures for the settlement/cracking area.

The new crack across the road approximately 80 m south of the settlement/cracking area suggests that there may be a larger instability at this site that encompasses the settlement/cracking area. A review of airphotos of the site prior to the 2001 site investigation did not suggest the presence of a larger instability, but did not eliminate the possibility. Based on the field observations AT has requested AMEC to prepare a scope of work to install additional instrumentation around the area of the new crack. This scope of work will be submitted to AT under separate cover.

5.0 Assessment

The slope inclinometers installed in 2001 measured movement along the base of the road fill in the settlement/cracking area. This movement appeared to accelerate in late summer/fall 2001. The spring readings and cracking of the patch indicate that this movement is continuing. In addition, the formation of the new cracking approximately 80 m to the south suggests that the instability at this site may be more extensive than previously determined. On this basis the Probability Factor with respect to this slide is taken as 11 (an increase from 7 in the 2001 assessment).

A large portion of the southbound lane is continuing to be affected. Over recent years this has been adequately handled by patching. Based on the extent and rate of movement observed to date, significant losses to the highway would not be expected to occur rapidly, however, the initial failure at the site did produce a significant loss, and more significant slide cannot be discounted. On this basis a Consequence Factor of 4 is assigned to this slide.

Based on the above, the Risk Level at this site is calculated as 44. This is an increase from the value of 28 calculated in the Spring 2001 Assessment Report.

6.0 Recommendations

Semi-annual monitoring of the existing instrumentation should be continued as planned.

The Annual Assessment program already in place should be continued.

The surface conditions of the road at this location should be carefully monitored by maintenance personnel. This would be in conjunction with slope indicator monitoring to provide as early detection of potential problems below the road as possible.

Additional instrumentation should be installed around the new crack in the summer of 2002. This new instrumentation should then be added to the semi-annual monitoring program. The data from the fall 2002 and spring 2003 readings can then be used to assess whether or not the instability at this site is more extensive than previously determined. A proposal for the installation of this instrumentation will be submitted to AT under separate cover. AMEC will not finalize the design for the remedial measures at the settlement/cracking area until information from the additional instrumentation is available.