

Slide Name: (GP 15a) SH 727:02 Rat/Howard Creek
Inspection Date: May 4, 2005
Inspection by: Alberta Infrastructure & Transportation and EBA staff listed on Page 1

1.0 BACKGROUND

Refer to EBA 2004 and earlier reports for description of site conditions and details of risk assessment. Over the past 30 years, numerous slides have developed along this sidehill alignment along the Howard/Rat Creek valley. SH 727:02 is currently a gravel road at this location and it was not paved due to the historical instability of this roadway.

Instrumentation monitoring has not been carried out at this site as previous AT instrumentation was sheared and is no longer functional.

2.0 OBSERVATIONS

- Along this 0.9 km length of sidehill alignment down the Rat Creek valley:
 - The numerous slides along the sideslope have transgressed to beyond the shoulder and, at some locations, crossed the centreline to require frequent regrading to maintain traffic passage.
 - The backslope area has started to deteriorate with various slides.

3.0 RISK ASSESSMENT

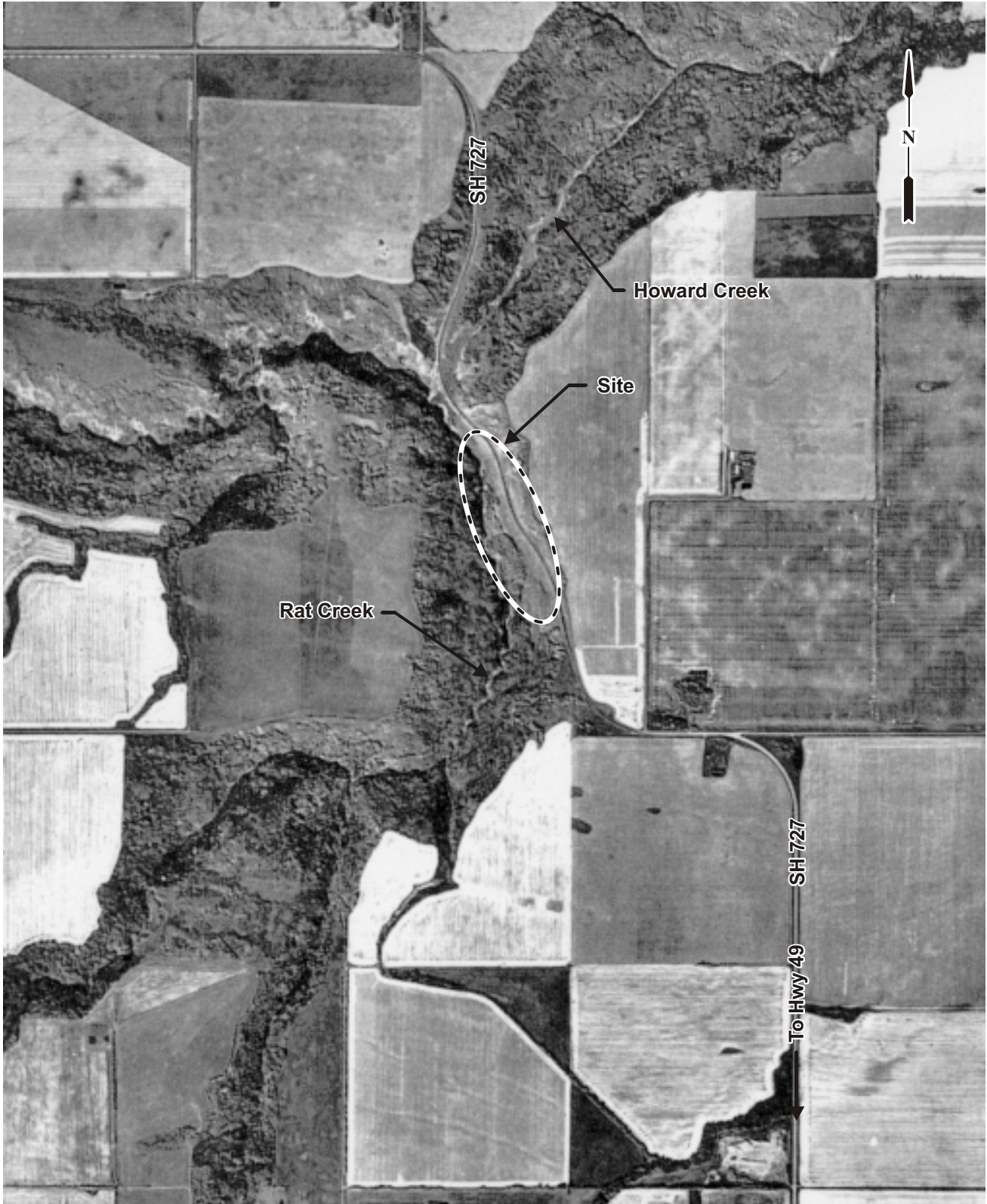
PF (11) * CF (5) = 55

Risk rating has not changed since 2001.

4.0 ACTION

- A planning study is being undertaken by Earth Tech (Canada) Inc. for the realignment of SH 727. EBA is the geotechnical subconsultant engineer for the planning study. Remediation of the multiple slides along the existing alignment is classified as difficult and costly.
- For maintaining the existing roadway for the interim, prior to the construction of a new alignment, the following approach is advised:
 - This roadway serves mainly local traffic. For pragmatic operation of the highway, it may be possible to narrow the lane width (or shift a lane toward the backslope) to allow passage of traffic in the event of future slide deterioration. This timely operation will require vigilant monitoring from the maintenance staff to minimize risks to the public. Signage of "slide danger" should be upgraded to provide caution to the driving traffic.

- It is more practical to allow the creek valley slope to undergo its own natural stabilization process and continue regrading (resurfacing) the gravel roadway for safe use by local traffic.
- In the interim, prior to any decision on future realignment, it is only pragmatic and practical to continue visual monitoring, regrading (resurfacing) the gravel road surface, and cleaning out any slide debris to provide a safe road surface usage.
- The site should be inspected in 2006.



Based on 1995 Aerial Photograph



Figure 1
Site Plan



Photo 1a

Looking south from top of upland. Multiple slides along alignment down the upper portion of sidehill alignment with headscarp along shoulder edge or towards centreline. The roadway was shifted repeatedly towards the backslope upland, thus steepening the backslope to render it less stable.



Photo 1c



Photo 1b

Looking south from the upland. Another view of upper portion of this sidehill alignment down Rat Creek valley.



Photo 1d



Photo 1e



Photo 1f



Photo 2

Looking north along highway sideslope. Slides encroachment to cross highway shoulder. Steep backslope as a result of previous shifts of alignment (away from sideslope slides towards upland).



Photo 3a
Looking west down valley slope. Erosion gully at top portion of Rat Creek valley.



Photo 3b
Another view of erosion gully.



Photo 3c
Looking downgrade. Steep backslope as result of previous alignment shifts towards upland.



Photo 3d

Another view of steep backslope and slides under development along backslope areas in general.



Photo 3e

Another view of steep backslope and slides under development along backslopes of the alignment.



Photo 4a
Looking downslope from upland. Centre portion of alignment.
Backslope slide - erosion gulley formed from a breach of a low dyke along the upland edge causing snow melt runoff concentrated flow to erode down the backslope.



Photo 4c
Another view. Steepening of slope toe from previous shifting of alignment.



Photo 4b
Looking upslope. Erosion slide of backslope.



Photo 5a
Slides along sideslope.



Photo 5c
Sideslope slide transgressing highway centreline. Gravel road regraded to allow passage of traffic.



Photo 5b



Photo 5d
Steepening of backslope.



Photo 5e
Another view of slide headscarp crossing highway and backslope.



Photo 5g



Photo 5f



Photo 6a
Upland view of bottom portion of Rat Creek alignment.



Photo 6b
Another upland view at bottom portion of Rat Creek alignment.