

Slide Name: (GP 10) Hwy 43:06 S. of Sturgeon Lake

Inspection Date: June 25, 2007

Inspection by: Alberta Infrastructure & Transportation and KarlEng Staff listed on Page 1

1.0 BACKGROUND

The following is extracted and updated from the 2006 Slide Tour Report :

The slide is located along a low fill embankment along flat lakeshore terrain of the Sturgeon Lake. The installation of a granular toe key (with geotextile underlay) and reconstruction of slope was carried out in 2001. Despite the 2001 toe key construction, the minor settlement and pavement crack still persisted for 3-4 years to require yearly maintenance patching. This persistence of minor settlement can be due to “bath tub” effect a submerged granular toe key where drainage is difficult due to low lying terrain of the area. Groundwater has been continually exiting from toe area of the slope into the ditch for the years since 2001 slope reconstruction. It is possible that a groundwater spring can be exiting beneath the highway embankment footprint.

Within recent 3 years 2004/2007, it was observed by local MCI that slide movement and pavement settlement has substantially decreased. It appears that the site has stabilized at 4-6 years after installation of the toe key.

Recently in 2007, it is understood that twinning of this highway will be carried out along the north side of existing highway.

2.0 OBSERVATIONS

Along the roadway pavement

- Reflective crack can still be noticeable but has not manifested over past 2-3 years. Movement has substantially slowed down.

3.0 RISK ASSESSMENT

The following assessment is updated, as appropriate, from previous AIT reports.

$$PF (4) * CF (2) = 8$$

Note:

- The risk assessment is provided based on a categorization of Hazard Probability Factor (PF) and Consequence Factor (CF) as provided by AIT’s RFP 2000. The details are provided in Table II at front portion of this Report.

4.0 COMMENT and ACTION

The site seemed to have stabilized substantially within recent years and the risk site deterioration is considered low. In 2007, it is understood that the twinning (to the north side) of the highway will be carried out in the near future and it maybe feasible to leave any upgrading improvement of this site to form part of the future twinning construction. Thus, it is appropriate

- To categorize this site as INACTIVE and its inspection will not be required.

END



Figure 1

General Site Plan South of Sturgeon Lake





Photo 1
Looking East (towards Valleyview) along westbound lane
 - Pavement crack from headscarp from sliding of low embankment.
 The crack extended about 1m beyond shoulder line
 - Breadth of headscarp crack about 30m in length along roadway
 - Pavement cracking and minor subsidence has progressively stabilized since 2001 (granular toe key with woven geotextile underlay)
 Continual operation of roadway is acceptable to maintenance forces

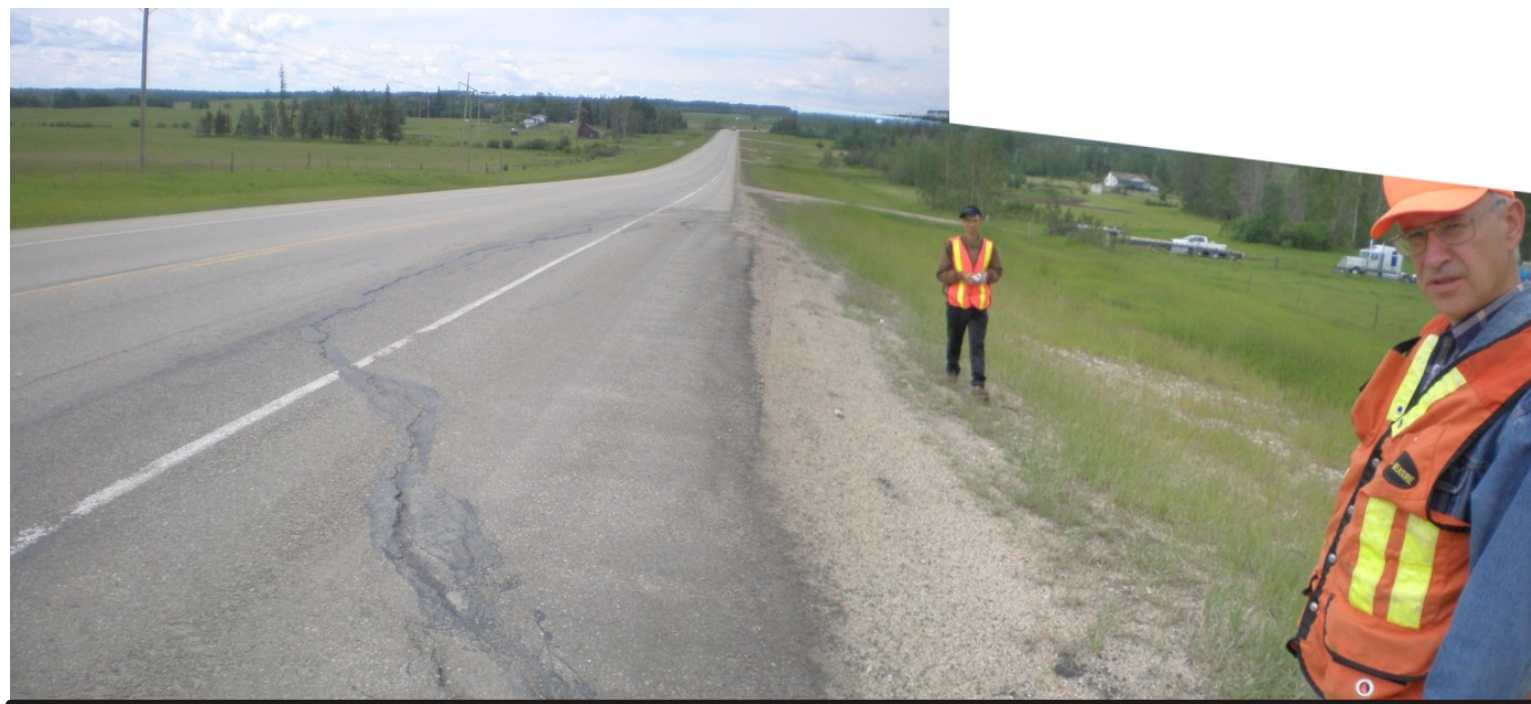


Photo 2
Looking West
 - Another view of pavement crack area that was patched over
 - Serviceability of roadway can be acceptable



Photo 2a
 Minor reflection of cracks that was patched over and sealed

Note: Photos taken on June 2007



Photo 3

Looking west (away from Valleyview) along south ditch

- Low height fill embankment and low flat terrain (along north lake shore of Sturgeon Lake) with wet subgrade and possible spring exit.
- Low flat terrain very difficult to provide drainage for granular toe key
- A section CSP culvert was installed at edge of granular toe key to connect to dissipate pore pressure from saturated toe key.



Photo 3a

CSP culvert outlet to connect to edge of granular toe key as drainage outfall to dissipate pore pressure

- A closeup view.
- Continual slow flow was inspected for many years. There is a need to regularly inspect and open up this CSP exit point from time to time.

Note: Photos taken on June 2007

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