

SITE NUMBER AND NAME S051 Pekisko Bank Erosion		HIGHWAY & KM 540:02, 4.624	PREVIOUS INSPECTION DATE July 9, 2021	INSPECTION DATE May 16, 2022
LEGAL DESCRIPTION 08-14-17-02 W5M	NAD 83 COORDINATES UTM Northing Easting 11 5590158 701158		RISK ASSESSMENT PF: 11 CF: 10 TOTAL: 110	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 720 (east) (Ref. No. 71130)			CONTRACTOR MAINTENANCE AREA (CMA): 27	

SUMMARY OF SITE INSTRUMENTATION: There is no instrumentation at the S051 bank erosion site. LAST READING DATE: N/A		INSPECTED BY: Chris Morgan (KCB) Laura Assaad (KCB) Alex Frotten (AT) Roger Skirrow (AT)
PRIMARY SITE ISSUE: Bank erosion on the outside of a sharp (110° attack angle) meander bend. The head scarp has encroached onto highway right-of-way and undermined the highway ditch re-directing ditch flows onto the failed slopes.		
APPROXIMATE DIMENSIONS: Bank erosion is approximately 100 m long with fence undermined for a length of approximately 24 m, head scarp located approximately 5 m away from edge of pavement.		
DATE OF ANY REMEDIAL ACTION: N/A		

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	N/A – none observed		X
Slope Movement	X		Tension cracking in highway ditch near the west end of the site	X	
Erosion	X		Large scour hole due to surface water runoff erosion along the outside bend of the creek. Ongoing gully erosion occurring where the ditch discharges water onto the slide surface	X	
Seepage		X	N/A – none observed		X
Culvert Distress		X	N/A – none observed		X

COMMENTS
No distress in pavement has been observed.
The height of the embankment is approximately 5 m to 6 m.
The erosion feature appears to have enlarged between the 2021 and 2022 inspections. The head scarp has extended towards the highway past the fence (undermining the fence) (Photo 1) and is impacting the north (westbound) ditch (Photo 2 and 3). The erosion extending into the ditch is redirecting surface water flows into the failure zone, exacerbating erosion.
During the 2022 inspection, eight fence posts had been undermined and are hanging (Photo 1 through 3); an increase of two since the 2020 inspection, indicating the erosion is lengthening. The fence is undermined for approximately 24 m.

A tension crack was observed near the west extent of the site (Photo 4).

The erosion has exposed a black utility cable (Photo 1 through 3) that is believed to be owned by TELUS. KCB does not know if it is an active or inactive line.

The erosion is impacting the north (westbound) ditch. The angle of attack for Pekisko Creek is 110°.

Erosion is retrogressing into the ditch and is within approximately 5 m of the high-tension cable barrier (HTCB).

The 10 m to 15 m wide slide block observed during the 2021 inspection had collapsed by the 2022 site visit. Multiple smaller slide blocks appear to be forming near the fence line and are expecting to eventually slide into the erosion feature, which will enlarge the erosion site and cause additional retrogression towards the highway (Photos 1 through 4).

Maintenance/Repair/Monitoring Recommendations:

Short-Term

- The site should be regularly monitored by AT's MCI, especially after significant precipitation events (e.g., freshet, increased rainfall, or prolonged rainfall).
- The site should continue to be inspected as part of the Southern Region GRMP Section B inspections.

Long-Term

- A repair design has been prepared. The slope should be rebuilt using geogrid reinforced fill and the creek bank should be armoured (e.g., riprap). The north (westbound) ditch should be re-established during the repair and the fence repaired.

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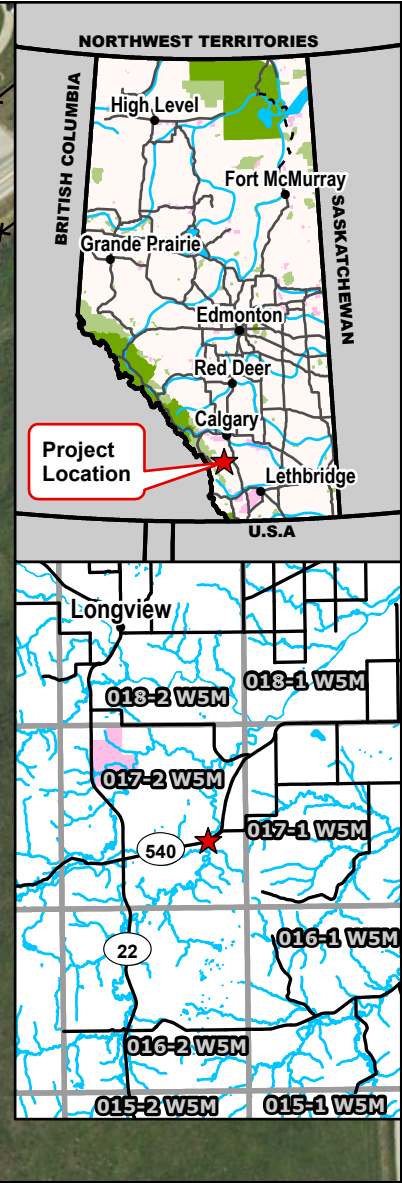
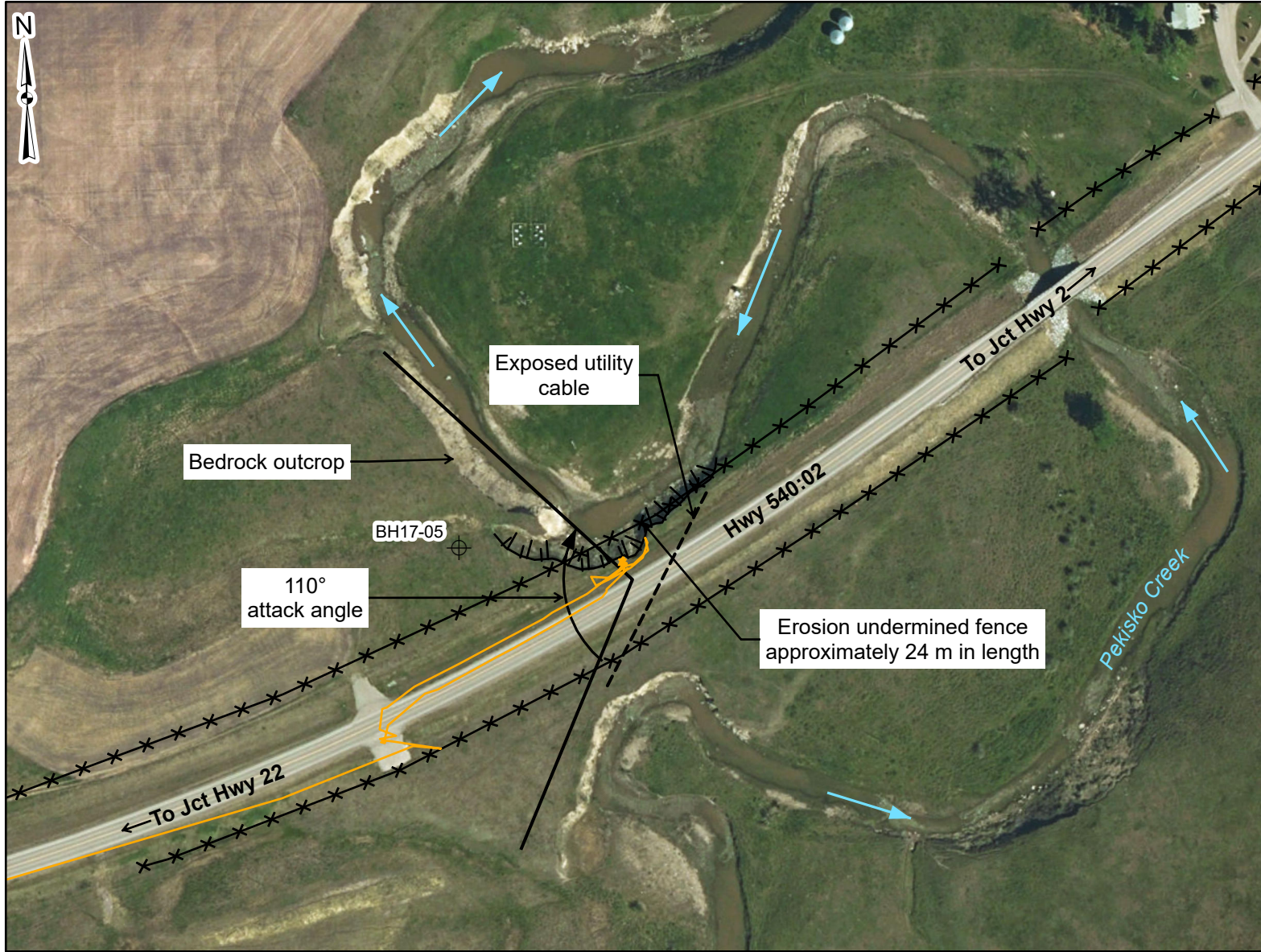
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<p>Chris Gräpel, M.Eng., P.Eng. Senior Civil Engineer, Associate</p>	
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Legend

- Borehole
- GPS Track (May 16, 2022)
- Flow Direction
- Scarp
- Utility Cable
- Fence



NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM ZONE 11N
 3. IMAGE SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS AND THE GIS USER COMMUNITY.

CLIENT

PROJECT SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM		
TITLE Site Plan S051 - Pekisko Bank Erosion Hwy 540:02, km 4.591		
SCALE 1:2,500	PROJECT No. A05116A03	FIG No. 1

Inspection Photographs

- Photo 1** Bank erosion is retrogressing towards the highway, impacting the north (westbound) ditch and undermining the fence. A utility cable is hanging where the erosion has extended furthest towards the highway (indicated by red circle). Photo taken May 16, 2022, facing southwest.



- Photo 2** Bank erosion, undermined fence, and exposed utility cable (indicated by red circle). Photo taken May 16, 2022, facing northeast.



Photo 3 Erosion has retrogressed into the north (westbound) ditch and surface water runoff is discharging onto the erosion/slide zone. Photo taken May 16, 2022, facing southwest.



Photo 4 Tension cracking (indicated by red dashed line) near the fence and west end of the site. Photo taken May 16, 2022, facing northeast.

