

SITE NUMBER AND NAME: S053 Foremost Slide		HIGHWAY & KM: 879:04 km 1.125	PREVIOUS INSPECTION DATE: May 31, 2017	INSPECTION DATE: July 8, 2021
LEGAL DESCRIPTION: 9-20-6-11 W4M	NAD 83 COORDINATES: UTM: Northing: Easting: 12 5481930 467953		RISK ASSESMENT: PF: 10 CF: 3 TOTAL: 30	
AVERAGE ANNUAL DAILY TRAFFIC: 800 (north) & 370 (south) (Ref. No. 125050 & 125060)			CONTRACTOR MAINTENANCE AREA (CMA): 18	

SUMMARY OF SITE INSTRUMENTATION: None	INSPECTED BY: Chris Morgan (KCB) Margot Lederman (KCB) Roger Skirrow (AT) Alex Frotten (AT)
LAST READING DATE: N/A	
PRIMARY SITE ISSUE: Drop in pavement of up to 0.2 m due to settlement of high fill in coulee. Transverse pavement cracking across width of highway	
APPROXIMATE DIMENSIONS: Approximately 20 m of highway affected.	
DATE OF ANY REMEDIAL ACTION: "Bump-in-road" signs installed in 2016-2017 and a speed reduction to 70 km/hr is in place at the dip.	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Transverse pavement crack across entire width of highway, approximately 30 cm north of fourth row of monitoring points on highway	X	
Slope Movement		X			
Erosion	X		An erosion feature is located west of the highway, in upland area		X
Seepage		X			
Culvert Distress		X			

COMMENTS
Highway appears to be constructed on an infilled coulee which is settling. There is evidence of numerous pavement lifts. The site was previously referred to as Rattlesnake Dip.
A transverse pavement crack across the entire highway, up to 20 mm wide and for the full depth of the pavement (waypoint 143). A second crack is forming approximately 1.1 m to the south of waypoint 143.
A transverse pavement crack was observed at waypoint 142, north of the dip.
Downslope of the dip, the highway ditch on the east side appears to have settled. The fence line on the east side of the highway appears straight with no evidence of dislocation.
Survey monitoring points were installed in grid pattern on the pavement surface in 2016-2017 and are being monitored annually by a surveyor retained by the MCI. Recent survey data has been provided to KCB for review.

A site reconnaissance in 2017 walked the upland and to the toe of the embankment slope. No evidence of embankment sliding, seepage, piping, void formation or other settlement was observed. A zone of denser and more lush vegetation was noted at waypoint 326 but no other sign of seepage or eroded materials was noted.

Repaving as a short-term mitigation to fill the dip may lead to an increase in the rate of slope movement and would result in loss of survey monitoring pins.

Recommendations:

- The MCI should continue to monitor survey points at the site.
- Carry out a desktop review of the site, including review of historic air photos.
- Drill borehole on the east side of the highway adjacent to the dip. A slope inclinometer should be installed in the borehole and monitored annually. A fiber optic cable is located in the east ditch and may require a hydrovac to locate it.
- Complete preliminary engineering to evaluate the extent and depth of slope movement, and to identify potential repair options.

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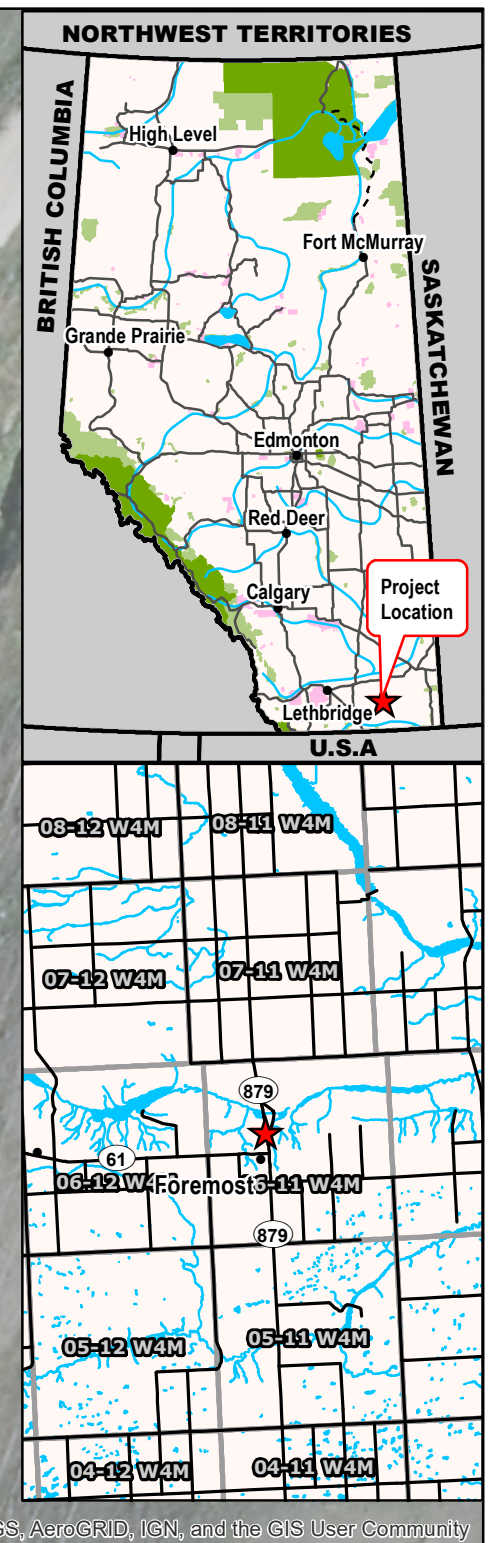
- (i) The report is to be read in full, with sections or parts of the report relied upon in the context of the whole report.
- (ii) The observations, findings, and conclusions in this report are based on observed factual data and conditions that existed at the time of the work, and should not be relied upon to precisely represent conditions at any other time.
- (iii) KCB should be consulted regarding the interpretation or application of the findings and recommendations in the report.



2021-11-24

Chris Morgan, M.Sc., P.Eng.
Senior Geotechnical Engineer

Time: 11:31:45 AM
 Date: October 12, 2021
 File: Z:\AUCSY\Alberta\A05116A03\ABT_Southern Region GRMP\400 Drawings\2021\Section B figures\MXD\S053_211012.mxd



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Legend**
- ▲ GPS Waypoint (2021)
 - ▲ GPS Waypoints (May 31, 2017)
 - GPS Track (2021)



NOTES: 1. HORIZONTAL DATUM: NAD83 2. GRID ZONE: UTM Zone 12N 3. IMAGE SOURCE: World Imagery from ESRI ArcGIS Online. Source date January 2015	CLIENT 	PROJECT SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM
		TITLE Site Plan S053 - Foremost Slide Hwy 879:04
SCALE 1:1,000	PROJECT No. A05116A03	FIG No. 1

Photo 1 Transverse pavement crack which has formed north of the dip in the highway. Photo was taken facing north on July 8, 2021.



Photo 2 Full pavement depth transverse crack at the dip. Crack is up to 2 cm wide. White circles denote survey pins installed in a grid pattern. Photo was taken facing north on July 8, 2021.



Photo 3 View north along east side of the highway, red circle shows the dip location. Photo taking facing north on July 8, 2021.



Photo 4 Fence line and embankment slope on east side of highway. Photo was taken facing north on July 8, 2021.

