SOUTHERN REGION GRMP
SITE INSPECTION FORM

SITE NUMBER AND NAME: **Unnumbered Site South Ghost Erosion**	HIGHWAY & KM: 40:14, 29.00	PREVIOUS INSPECTION DATE: N/A	INSPECTION DATE: **May 18, 2022**
LEGAL DESCRIPTION: SW 20-27-07-W5M	NAD 83 COORDINATES: UTM 11 Northing 5686872 Easting 642530	RISK ASSESMENT: PF: 9 CF: 3 TOTAL: 27	
Average Annual Daily Traffic (AADT): 690 (north) & 210 (south) (Ref. No. 70000143 & 53240)		CONTRACTOR MAINTENANCE AREA (CMA): 28	

SUMMARY OF SITE INSTRUMENTATION:	INSPECTED BY:
There is no instrumentation at this site. LAST READING DATE: N/A	Chris Morgan (KCB) Laura Assaad (KCB) Roger Skirrow (AT) Alex Frotten (AT)
PRIMARY SITE ISSUE: Over-steepening of creek bank adjacent to the highway due to surface runoff erosion and creek erosion. The erosion has retrogressed to near the edge of the southbound lane of Highway 40. The south ditch has been undermined and is draining directly into the erosion feature/creek.	
APPROXIMATE DIMENSIONS: The erosion scarp is approximately 30 m in length at the crest of a 3 m to 5 m high bank above an unnamed creek. Approximately 13 m of highway shoulder is undermined.	
DATE OF ANY REMEDIAL ACTION: None.	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		The highway has a gravel surface. Erosion of the embankment is undermining the south (eastbound) lane of the highway.		X
Slope Movement		X	N/A – none observed		X
Erosion	X		Surface water runoff from highway forming an erosion gully and erosion at the toe of the highway embankment		X
Seepage		X	N/A – none observed		X
Culvert Distress		X	N/A – none observed		X

COMMENTS

The site is along a two-lane gravel road, oriented approximately southeast-northwest. The highway embankment is located north of a small unnamed creek flowing south (Photos 1 through 4). The north bank of the creek is eroding the shoulder of the highway embankment over a length of approximately 30 m (WP 103 to WP 104). There was minimal flow in the creek during the site inspection.

The erosion has over-steepened the highway embankment slope (approximately 1H:1V) and could lead to embankment instability (Photo 2 through 4).

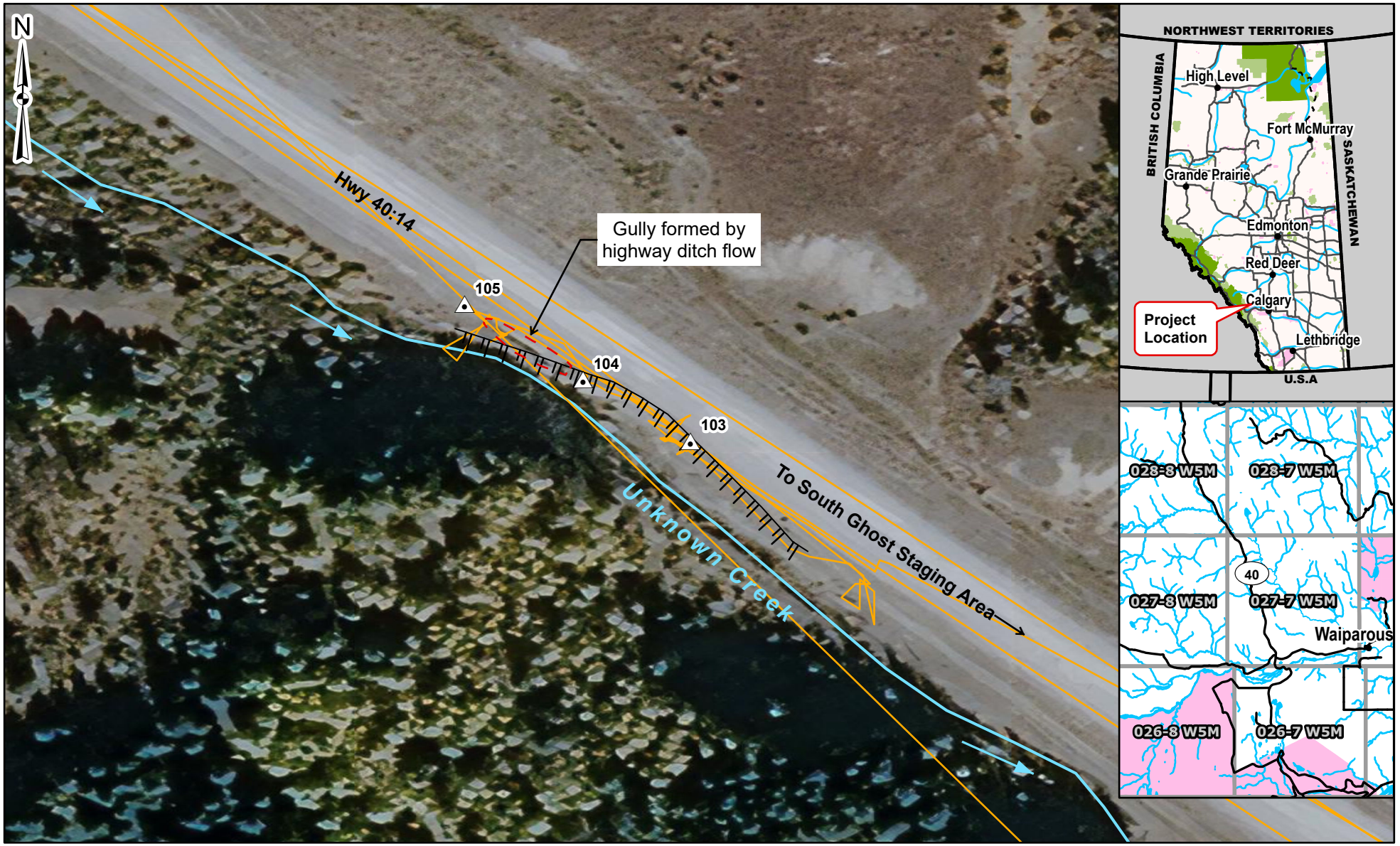
Surface runoff from the highway is contributing to erosion of the creek bank/south embankment slope. A linear feature (Photo 1) (WP 105) on the south side of the highway is concentrating surface water runoff from the highway and has formed an erosion gully approximately 0.5 m to 1.0 m wide and 0.3 m deep. The erosion gully will continue to increase is size (depth and width) if not repaired. The rate of erosion will most likely be exacerbated by periods of increased or prolonged rainfall.

A black utility cable was observed lying on the ground surface on the south side of the highway (between the ditch bottom and edge of pavement). KCB will do a background review to assess the type and owner of the utility cable (Photo 2 and 4).

Maintenance/Repair/Monitoring Recommendations:

- Reconstruct the south embankment and creek bank and armour the creek bank with riprap. If active, the unidentified utility cable should be relocated or trenched within the east highway embankment.

Chris Gräpel, M.Eng., P.Eng.
Senior Civil Engineer, Associate



Legend

- GPS Waypoint (May 18, 2022)
- GPS Track (May 18, 2022)
- Main Scarp
- Flow Direction
- Watercourse
- Gully

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

CLIENT: Alberta

Klohn Crippen Berger

PROJECT: SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE: Site Plan
Unnumbered Site - South Ghost Erosion
Hwy 40:14, km 29.00

SCALE	PROJECT No.	FIG No.
1:1,250	A05116A03	1

File: Z:\AC\GY\Alberta\A05116A03 ABT Southern Region GRMP\400 Drawings\2022\Section B\ArcGIS Pro Figures\South Ghost.aprx Date: Time: Creator: : aharrison

Inspection Photographs

Photo 1 **The south highway embankment is being eroded by the unnamed creek south of the highway. The erosion has undermined the south (eastbound) ditch and has exposed a black utility cable. A linear feature (indicated by black arrow) (WP 105) is contributing to the erosion by diverting surface water runoff into the eroding area. Photo taken on May 18, 2022, facing southeast.**

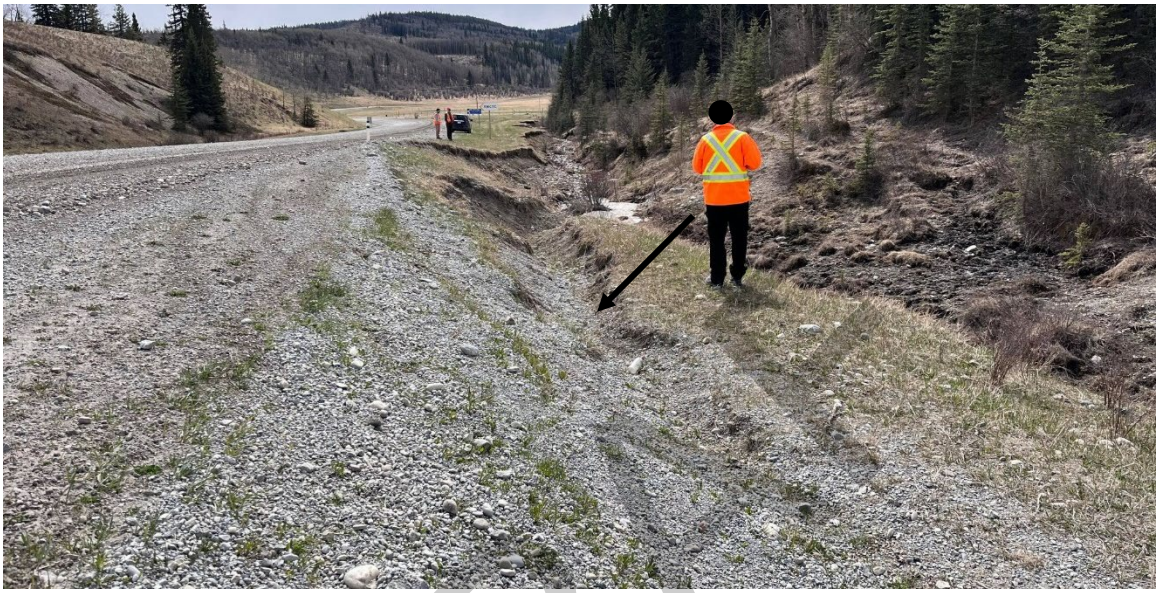


Photo 2 **The erosion has retrogressed within 2 m of the edge of the south (eastbound) lane of highway (WP 103 to WP 104). The exposed utility line is indicated by the black arrow. Photo taken May 18, 2022, facing southeast.**

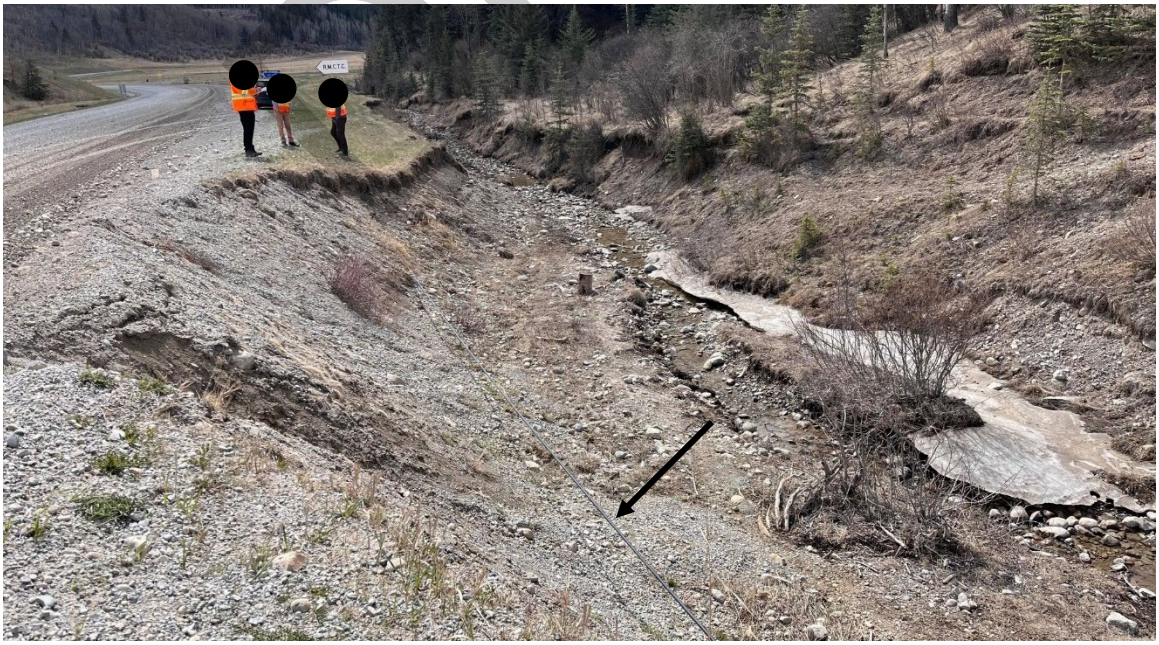


Photo 3 **The runoff from the highway has eroded a portion of the south highway embankment and north bank of the creek. Photo taken May 18, 2022, facing northwest.**

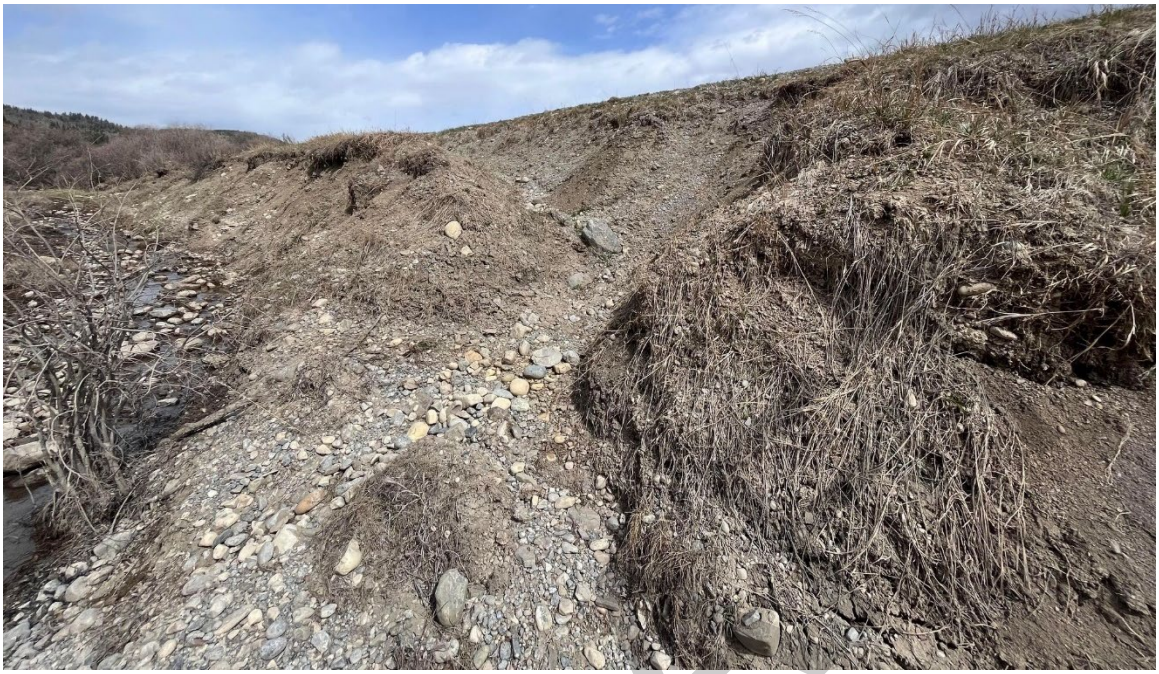


Photo 4 **The erosion of the south highway embankment has exposed a black utility cable (indicated by black arrow) and has over-steepened the highway embankment (approximately 1H:1V). Photo taken May 18, 2022, facing northwest.**