

SITE INSPECTION FORM

SITE NUMBER AND NAME: GP001 Slide 5.0 km South of Wapiti River Bridge (Wapiti Hill)		HIGHWAY & KM: 40:42, 25.393	PREVIOUS INSPECTION DATE: June 14, 2017	INSPECTION DATE: June 15, 2022
LEGAL DESCRIPTION: NE 18-70-05-W6M	NAD 83 COORDINATES: UTM Northing Easting 11 6103632 388701		RISK ASSESSMENT: PF: 8 CF: 4 TOTAL: 32	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 4320 (north) & 4180 (south) (Reference No. 990228, 2021)			CONTRACT MAINTENANCE AREA (CMA): 504	

SUMMARY OF SITE INSTRUMENTATION: Operable: Three slope inclinometers (SIs) and three pneumatic piezometers (PNs) installed between 1991 and 1998. Inoperable: Eleven SIs and ten PNs installed between 1997 and 2004. Three wells/standpipe piezometers also installed in 1991. LAST READING DATE: June 21, 2022	INSPECTED BY: Chris Gräpel (KCB) Courtney Mulhall (KCB) Ed Szmata (AT) Kristen Tappenden (AT) Max Shannon (AT)
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PRIMARY SITE ISSUE: Deep-seated landslide located along south/west valley slope of Wapiti River. Hwy 40:42 fill placed in a side-hill arrangement across a large, old slide area. Slide movements affecting both lanes of highway.

APPROXIMATE DIMENSIONS: An approximate 400-m length of highway primarily being affected but the slide area is wider.

DATE OF ANY REMEDIAL ACTION: 1981 – initial highway construction consisted of sub-excavation and backfill of wet areas with clay, installation of lateral drains at backslope ditch, and construction of a waste berm at toe. September 1990 – an additional lateral drain (approximately 800 m long) installed below backslope ditch to outflow at bridge located northwest of site, finger drains (approximately 800 m total) installed along backslope to outflow to lateral drain below backslope ditch. Ongoing pavement patching and milling, including most recent pavement patching completed in fall of 2021.

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Cracks and dips in pavement surface, including recent pavement patches completed in fall of 2021 (WP224 at north extent of north patch).	X	
Slope Movement	X		Cracking in recent pavement patches indicates ongoing slide movements.	X	
Erosion		X	None observed at time of 2022 inspection.		X
Seepage	X		Wet subgrade conditions previously observed during construction. Water ponded downslope of highway near culvert outlet and WP223.		X
Culvert Distress			Culvert not inspected.		

COMMENTS
Slope upslope and downslope of highway is landslide terrain.
Areas upslope and downslope of highway recently cleared of trees and vegetation in preparation for highway twinning work exposing a series of old and relatively recent slide scarps within the larger slide area.



**PEACE REGION
(GRANDE PRAIRIE DISTRICT – SOUTH) GRMP**



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Recently cleared areas upslope and downslope of highway will be susceptible to erosion. Increased water infiltration into these areas may also trigger additional slide movements, which may impact pavement surface.

One SI (SI-09) and two PNs (PN-9A/B) damaged by clear cutting activities in spring of 2022. Instruments were repaired and read successfully in June 2022.

Slide and erosion observed on north and south side of highway, respectively, at northern site limit just before bridge. At the time of the 2022 inspection neither was affecting the pavement surface of the highway.

Maintenance/Repair/Monitoring Recommendations:

- Continue to monitor site. Monitor for signs of increased slide activity and changes in hydrology upslope and downslope of highway due to trees and vegetation being cleared.
- Continue to patch highway as needed to maintain pavement surface.

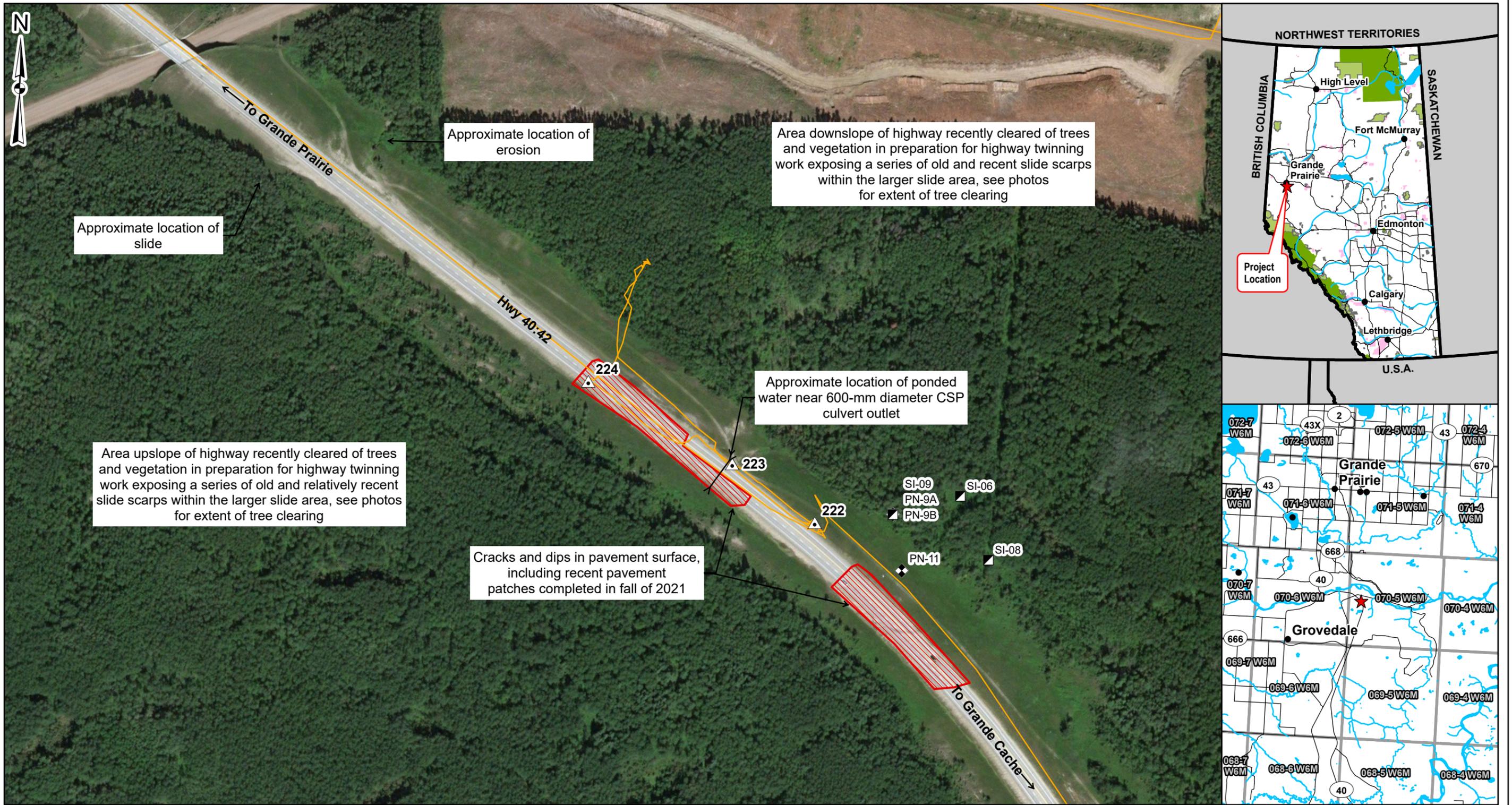
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Chris Gräpel, M.Eng., P.Eng.
Senior Civil Engineer, Associate



Legend

- ◆ Approximate Pneumatic Piezometer Location
- Approximate Slope Inclinator Location
- △ GPS Waypoint (June 15, 2022)
- GPS Track (June 15, 2022)
- Culvert
- ▨ Pavement Patch



NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM ZONE 11N
 3. IMAGE SOURCE: 2022 MICROSOFT CORPORATION, 2022 MAXAR CNES, DISTRIBUTION AIRBUS DS

CLIENT

PROJECT	PEACE REGION (GRANDE PRAIRIE DISTRICT-SOUTH) GEOHAZARD RISK MANAGEMENT PROGRAM	
TITLE	Site Plan GP001 - Slide 5.0 km South of Wapiti River Bridge Hwy 40:42, km 25.393	
SCALE	PROJECT No.	FIG No.
1:3,000	A05116A01	1

Inspection Photographs

Photo 1 Overview of GP001 site on Hwy 40:42. Photo taken June 15, 2022, with unmanned aerial vehicle (UAV) facing southeast.

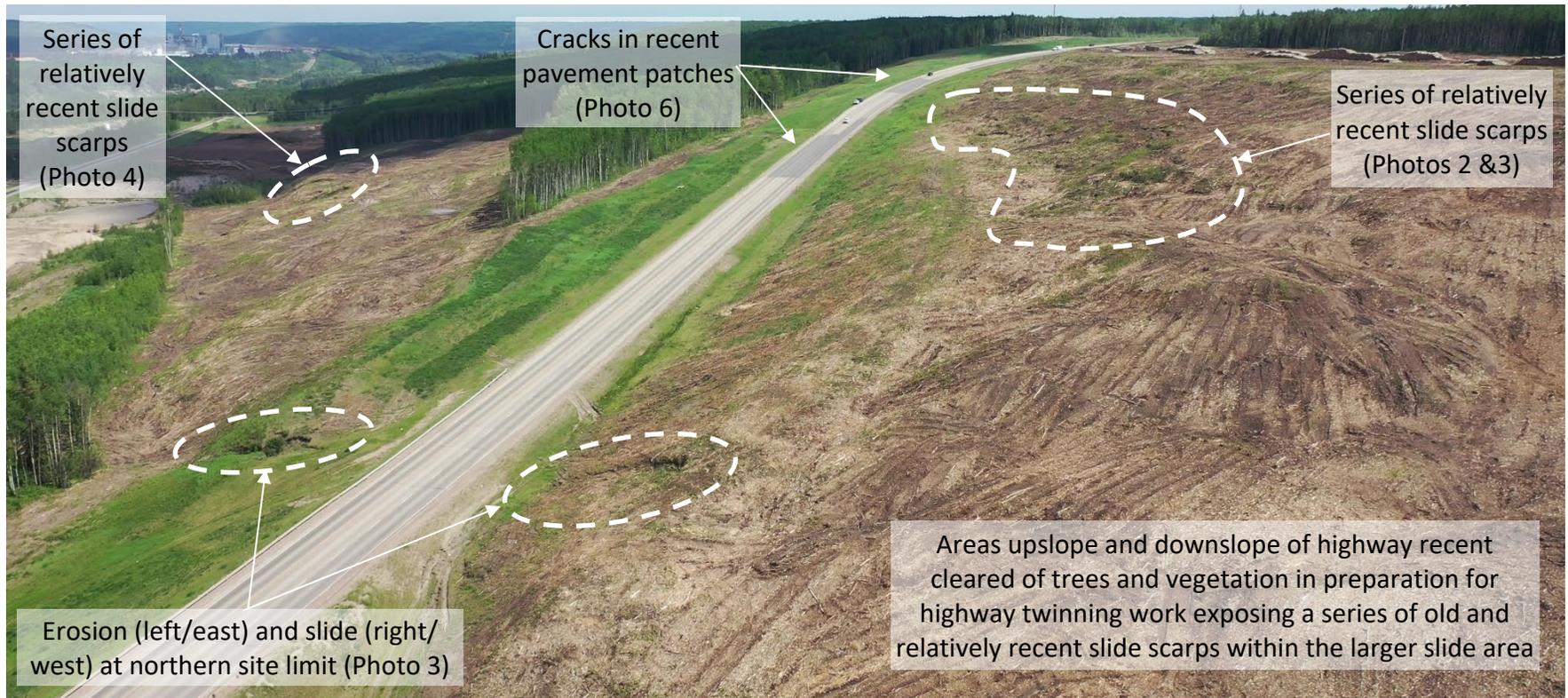


Photo 2 Area upslope of Hwy 40:42 recently cleared of trees and vegetation exposing a series of old and relatively recent slide scarps (circled in white) within the larger slide area. Water ponded (circled in white) downstream of highway near culvert outlet and WP223. Photo taken June 15, 2022, with UAV facing west.



Photo 3 Erosion and slide (circled in white) at northern site limit just before bridge. Photo taken June 15, 2022, with UAV facing south.

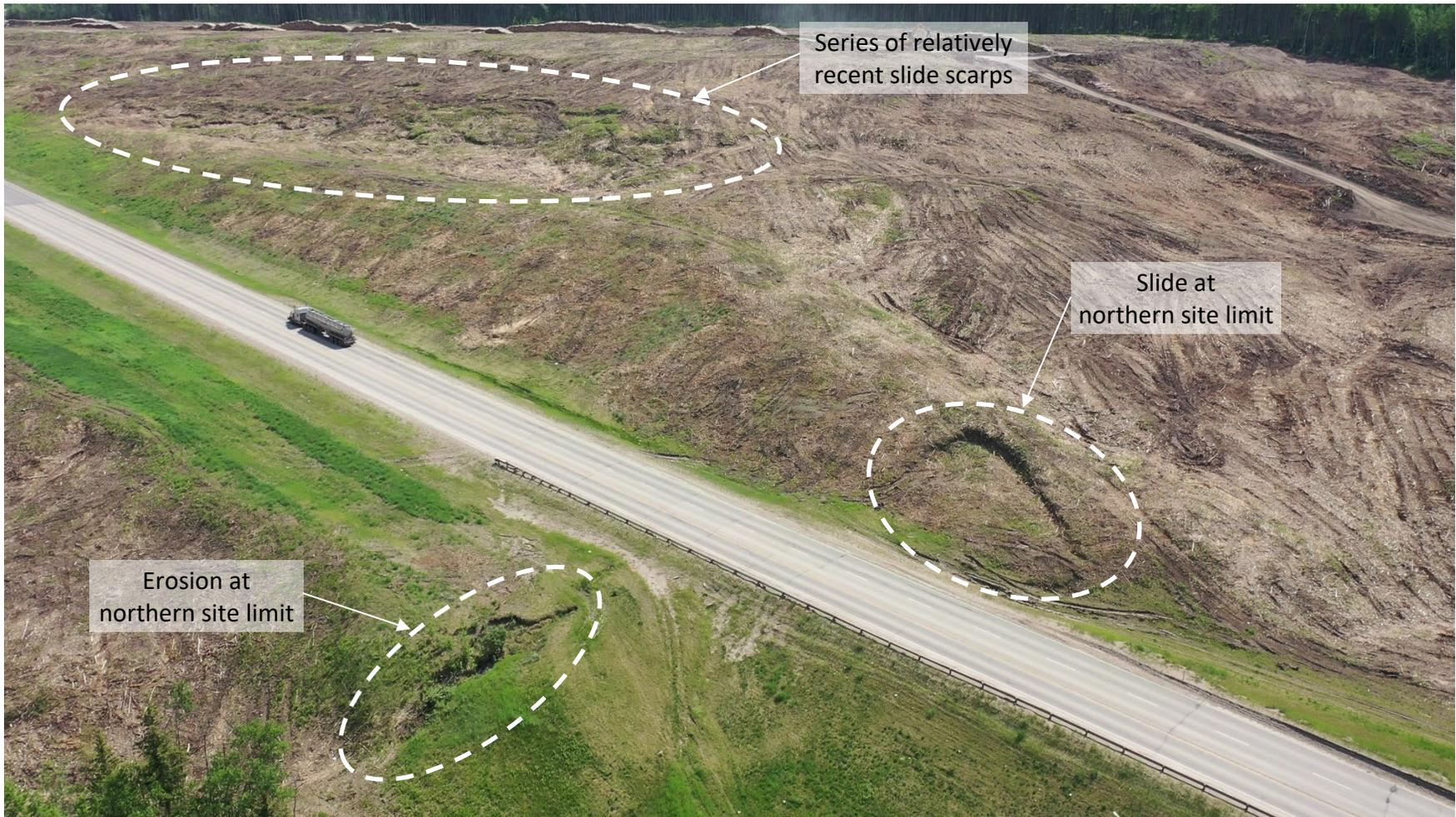


Photo 4 Area downslope of Hwy 40:42 recently cleared of trees and vegetation exposing a series of old and relatively recent slide scarps (circled in white) within the larger slide area. Photo taken June 15, 2022, with UAV facing southeast.



Photo 5 Dip in pavement surface of Hwy 40:42. Photo taken June 15, 2022, facing northwest.



Photo 6 Cracking in recent pavement patch of Hwy 40:42 completed in fall of 2021. Photo taken June 15, 2022, facing northwest.

