

<b>SITE NUMBER AND NAME:</b> GP020-II Backslope Slump North of Grande Cache		<b>HIGHWAY &amp; KM:</b> 40:34, 35.998	<b>PREVIOUS INSPECTION DATE:</b> May 25, 2020	<b>INSPECTION DATE:</b> <b>June 13, 2022</b>
<b>LEGAL DESCRIPTION:</b> NE 32-56-08-W6M	<b>NAD 83 COORDINATES:</b> UTM Northing Easting 11 5973303 358690		<b>RISK ASSESSMENT:</b> PF: 10 CF: 3 TOTAL: 30	
<b>AVERAGE ANNUAL DAILY TRAFFIC (AADT):</b> 1530 (north) (Reference No. 70000104, 2021) 1020 (south) (Reference No. 25592, 2021)			<b>CONTRACT MAINTENANCE AREA (CMA):</b> 504	

<b>SUMMARY OF SITE INSTRUMENTATION:</b>  There is no instrumentation at the GP020 site.  LAST READING DATE: N/A	<b>INSPECTED BY:</b> Chris Gräpel (KCB) Courtney Mulhall (KCB) Ed Szmata (AT) Kristen Tappenden (AT) Max Shannon (AT) Dwayne Lowen (AT MCI)
<b>PRIMARY SITE ISSUE:</b> Series of earthflows from backslope along upslope/east side of Hwy 40:34 depositing in upslope/east highway ditch. Backslope high and steep with areas of poor vegetation and exposed gravelly material and other areas with good tree coverage. Mudflows appear to be shallow. The site is located along the south/east valley slope of the Smoky River.	
<b>APPROXIMATE DIMENSIONS:</b> An approximate 150-m length of highway being impacted. Backslope up to approximately 90 m high.	
<b>DATE OF ANY REMEDIAL ACTION:</b> Ongoing ditch cleaning and maintenance.	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	None observed at time of 2022 inspection.		X
Slope Movement	X		Some surface slumping on backslope. Some material being deposited into upslope/east highway ditch.		X
Erosion	X		Rill erosion and gullies on backslope. Weathering, freeze thaw, surface runoff, and seepage eroding backslope materials.	X	
Seepage	X		Seepage along backslope.		X
Culvert Distress		X	No culverts observed by KCB.		X

#### COMMENTS

Earthflows and gravity movement of particles likely occurring in response to seepage, surface-water runoff flowing over crest of slope, and precipitation infiltrating into slope softening slope materials. Rate of occurrence and volume of mudflows likely to increase in response to freshet and/or periods of prolonged and/or heavy rainfall.

#### Maintenance/Repair/Monitoring Recommendations:

- A diversion ditch could be constructed at the crest of the backslope to divert surface water runoff away from crest of the mudflow area. However, review of 2022 unmanned-aerial-vehicle (UAV) flight imagery indicates construction of a diversion ditch may not be practical due to lack of access and topography.
- Most material being deposited in upslope/east highway ditch appears to slow ditch flows and not block them completely (ditch is wide and shallow). Icing problems in ditch reported in winter of 2021/2022. Water currently flowing in ditch to southwest. Continue to clean ditch to maintain mudflow storage volume (i.e., keep ditch as wide and deep as possible to retain material within the ditch) and reduce the potential for material reaching the highway.

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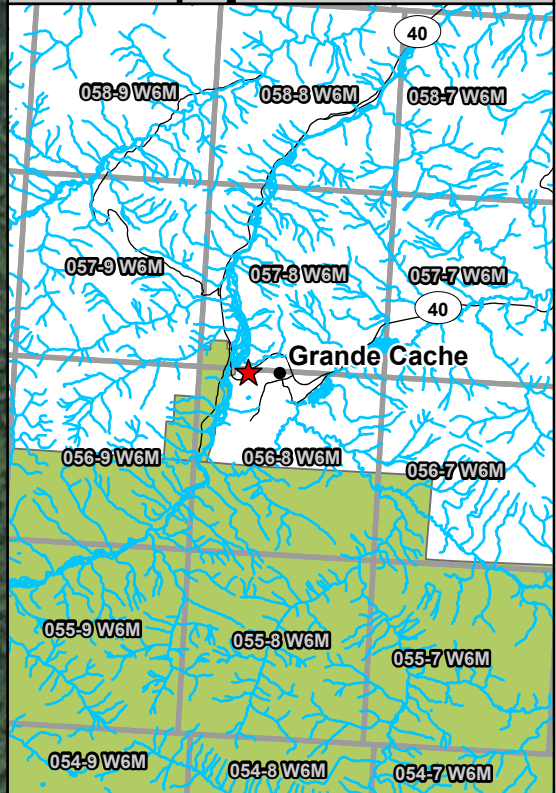
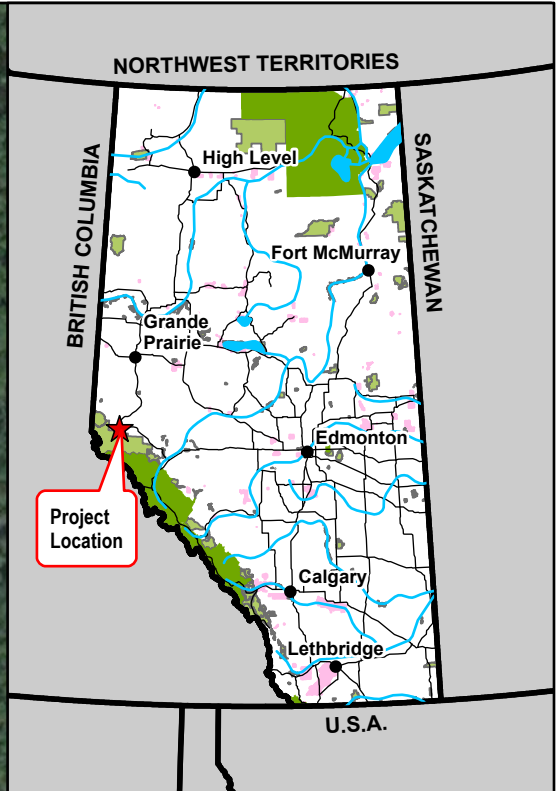
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Chris Gräpel, M.Eng., P.Eng.  
Senior Civil Engineer, Associate





**Legend**

- GPS Track (June 13, 2022)
- ⌋⌋ Scarp



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

CLIENT  
*Alberta*

 **Klohn Crippen Berger**

PROJECT  
PEACE REGION (GRANDE PRAIRIE DISTRICT-SOUTH)  
GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE  
Site Plan  
GP020-II - Backslope Slump North of Grande Cache  
Hwy 40:34, km 35.998

SCALE 1:2,000 PROJECT No. A05116A01 FIG No. 1



## Inspection Photographs

**Photo 1** Overview of GP020-II site on Hwy 40:34. Photo taken June 13, 2022, with unmanned aerial vehicle (UAV) facing northeast.





**Photo 2** Overview of GP020-II site on Hwy 40:34. Note erosion gullies and poorly vegetated areas on backslope along east side of Hwy 40:34. Photo taken June 13, 2022, with UAV facing west.





**Photo 3**      **Erosion gully and debris fan on backslope along east side of Hwy 40:34. Note exposed gravelly material on backslope. Photo taken June 13, 2022, facing east.**



**Photo 4**      **Water flowing in upslope/east ditch of Hwy 40:34 at toe of backslope. Photo taken June 13, 2022, facing northeast.**





**Photo 5**      **Pavement surface of Hwy 40:34. Photo taken June 13, 2022, facing southwest.**



**Photo 6**      **Pavement surface of Hwy 40:34. Photo taken June 13, 2022, facing northeast.**

