

SITE NUMBER AND NAME: S057 Hwy 1A, Exshaw, Sites A & B		HIGHWAY & KM: 1A:02 km 12.52 to 11.91	PREVIOUS INSPECTION DATE: May 7, 2019	INSPECTION DATE: July 6, 2020
LEGAL DESCRIPTION: 13-22-024-09 W5M	NAD 83 COORDINATES: UTM Northing Easting 11 5658509 627178		RISK ASSESMENT: PF: 11 CF: 1 TOTAL: 11 (Site A) PF: 11 CF: 3 TOTAL: 33 (Site B)	
AVERAGE ANNUAL DAILY TRAFFIC: 844 (west), 770 (east) (Ref. No. 50100258)			CONTRACTOR MAINTENANCE AREA (CMA): 27	

SUMMARY OF SITE INSTRUMENTATION: None	INSPECTED BY: Chris Morgan (KCB) Margot Lederman (KCB) Renato Macciotta (KCB) Kristen Tappenden (AT) Alex Frotten (AT)
LAST READING DATE: N/A	
PRIMARY SITE ISSUE: Two rock cut slopes with bedding planes dipping towards the highway. The sites have shallow to non-existent catchment ditches and rockfalls can reach the highway.	
APPROXIMATE DIMENSIONS: Site A is approximately 210 m long and up to 15 m high, and Site B is approximately 300 m long and up to 12 m high.	
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			X
Slope Movement	X		Bedrock slopes with ongoing rockfall into the existing shallow catchment ditches.		X
Erosion		X			X
Seepage		X	None observed		X
Culvert Distress		X			X
Rockfall	X		Recent rockfalls up to 0.25 m ³ contained within the ditch.		X

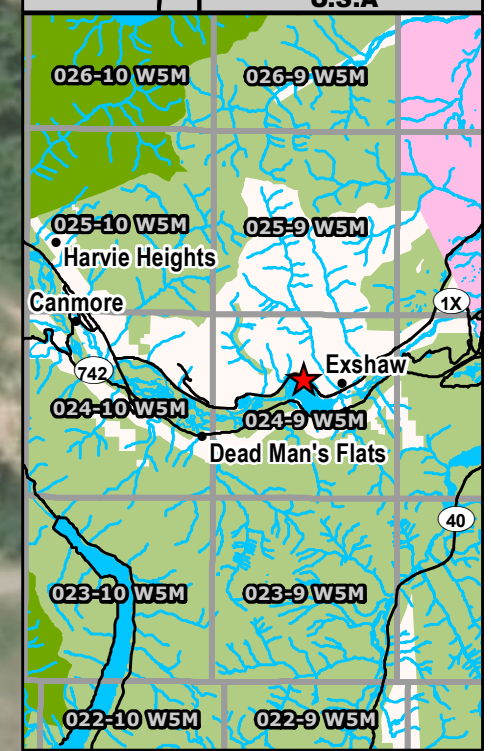
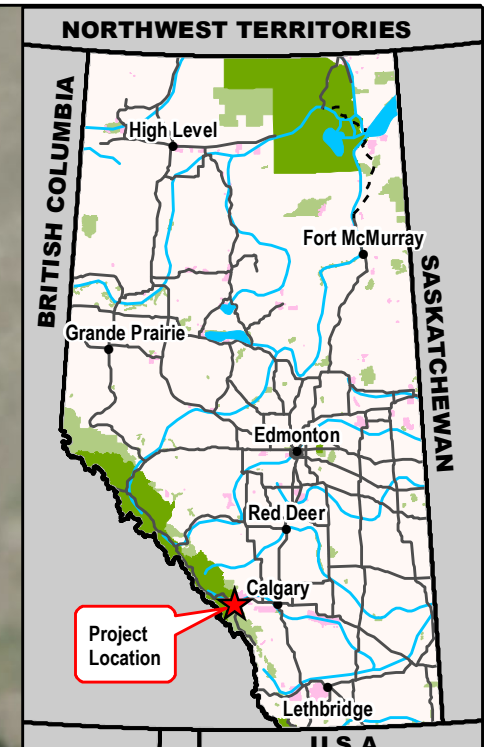
COMMENTS
Site A (km 12.52 to 12.34) – Bedrock is sedimentary (limestone or siltstone) with open joints and visible bedding planes (dipping towards the highway at approximately 40 degrees), potential for sliding failure but unlikely to bounce onto the road. Ditch is relatively flat. Unweathered rockfall debris (up to 0.15 m x 0.65 m x 0.45 m) was noted in the ditch at Site A suggesting rockfalls are ongoing.
Site B (km 12.26 to 11.91) - Bedrock is sedimentary and similar to Site A (limestone or siltstone) with open joints and visible bedding planes (dipping towards the highway at approximately 40 degrees), mid-sized blocks visible with potential to roll onto the road. Ditch is relatively flat. Rockfalls are active and unweathered rockfall debris (up to 0.5 m x 0.65 m x 0.75 m) was noted in the ditch at Site B. Multiple potential loose blocks were visible in the rock mass.
The existing shallow ditches appear to be effective but should be cleaned out regularly.

Approximately 20 Rocky Mountain sheep were noted on the rock slopes.

A utility box was noted on the north side of the road, with utility cables running along the ditch.

Candidate repair and management options include:

- routine inspection of the slope.
- excavation of rockfall catchment ditches adjacent to the highway and spot bolting of blocks which appear unstable or pose a wedge failure risk. A trajectory model could be used to determine the size of lock block wall required to contain the rockfalls.
- a lock block wall or HTCB could be considered but the impact in wildlife movement and road safety would need to be evaluated.



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

Legend

- GPS Track (July 6, 2020)
- Flow Direction



Time: 11:54:43 AM
Date: August 10, 2020
File: Z:\AEDM\A05115A03\ABT Southern Region GRMP\A00 Drawings\2020\2. Section BIM\XDS\057_200810.mxd

NOTES: 1. HORIZONTAL DATUM: NAD83 2. GRID ZONE: UTM Zone 11N 3. IMAGE SOURCE: World Imagery, ESRI ArcGIS Online Source date July 16, 2018	CLIENT	PROJECT
		SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM
	TITLE	Site Plan S057 - Highway 1A, Exshaw Hwy 1A:02, km 12.24
	SCALE	PROJECT No.
	1:2,000	A05115A03
		FIG No.
		1

Photo 1 Adversely dipping bedrock at Sites A and B. Photo taken facing northeast on July 6, 2020.



Photo 2 Southeastern section of Site A. Photo was taken facing northeast on July 6, 2020.



Photo 3 **Northwestern section of Site A. Photo was taken facing north on July 6, 2020.**



Photo 4 **Northwestern end of Site B. Photo taken facing north on July 6, 2020.**



Photo 5 Rockfall debris up to 0.25 m³ in the ditch of Site B. Photo was taken facing northwest on July 6, 2020.



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