

SITE NUMBER AND NAME <b>S017-II Mount Baldy Rockfall Hazards</b>		HIGHWAY & KM 40:12, 37.302	PREVIOUS INSPECTION DATE May 17, 2022	INSPECTION DATE <b>May 27, 2024</b>
LEGAL DESCRIPTION NE 32-23-8-W5	NAD 83 COORDINATES UTM Northing Easting 11 5652484 634210		RISK ASSESMENT PF: 14 CF: 3 TOTAL: 42	
Average Annual Daily Traffic (AADT): 3430 (north) & 3330 (south) (Reference No. 53190)			Contractor Maintenance Area (CMA): 28	

SUMMARY OF SITE INSTRUMENTATION:  There is no instrumentation at the S017-I site.  LAST READING DATE: N/A	INSPECTED BY: Chris Grapel (KCB) Peter Roy (KCB) Renato Macciotta (U of A) Alex Frotten (TEC) Kristen Tappenden (TEC)
PRIMARY SITE ISSUE: Rockfalls from back/cut slopes on the east side of Hwy 40:12. The site has a narrow ditch and potential rockfall sources upslope.	
APPROXIMATE DIMENSIONS: The slope height is approximately 15 m, with 3 m to 4 m of native soil at the brow of the slopes.	
DATE OF ANY REMEDIAL ACTION: Wire mesh and HTCB installed in 2016.	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	N/A – none observed outside of typical pavement wear		X
Slope Movement	X		Weathering of the rock slope and rockfall into the ditch	X	
Erosion	X		Erosion of soil at the top of slope contributes to rockfall	X	
Seepage		X	N/A – none observed		X
Culvert Distress		X	N/A – none observed		X

<b>COMMENTS</b>
Large debris piles in mesh gaps. The slope is less steep at the gaps in the mesh due to weathered rock and therefore were left open for animal access up the slope. Blocks are falling along the open sections from the slope and brow.
Rocks up to 1.7 m x 1.2 m x 0.8 m (1.6 m <sup>3</sup> ) have fallen into the ditch.
Some areas of damaged mesh were noted at the base of the mesh due to large falling rocks. Large rockfalls are damaging the mesh joint with the lower cable, creating loose sections. The mesh should be repaired to prevent rolling because of potential to roll onto the highway. Loose sections of mesh may be more prone to tearing.
Existing ditch is narrow and flat, allowing some debris to roll onto the highway. Ditch should be cleaned of debris regularly.
Sections of the rock face are dilated and unstable. Structural features dip out of slope, allowing blocks to detach and slide towards the highway. Potential for larger blocks to block a lane.

Maintenance/Repair/Monitoring Recommendations:

- The ditch should be cleaned of debris more regularly. The MCI reports that ditches are typically cleaned every 3 to 5 years.
- Reattach the mesh to the base cable so that it functions effectively.
- Assess if a lock block wall inside the HTCB would work to address issues of rockfalls reaching the highway. Could replace HTCB with W-beam guard rail to help prevent smaller rockfall debris from reaching the highway.

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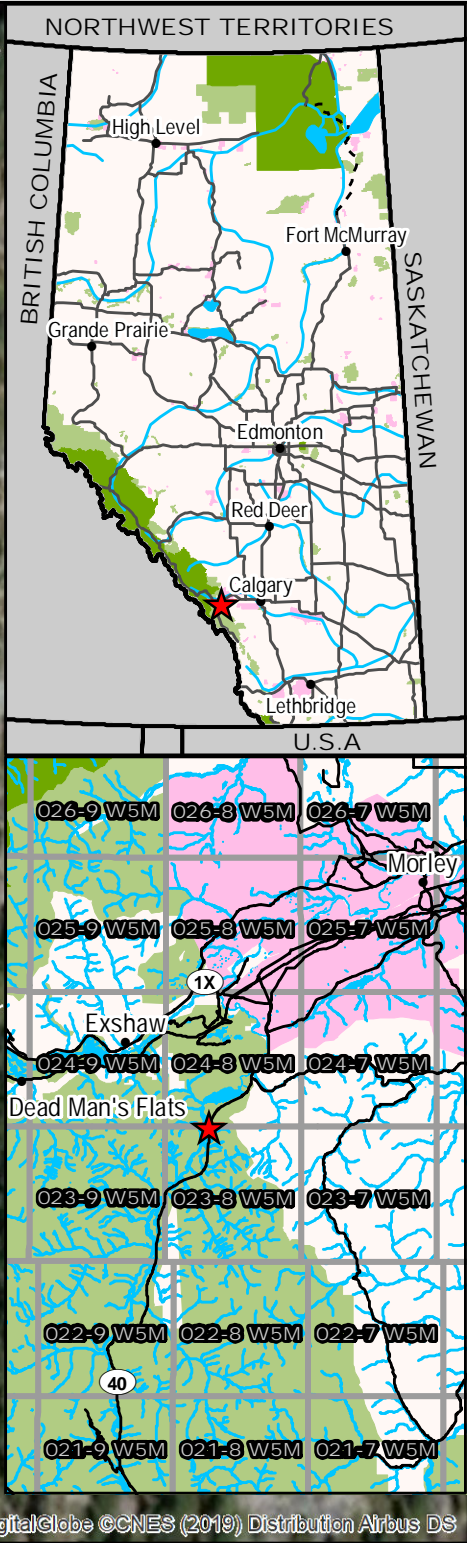
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Peter Roy, P.Eng.  
Civil Engineer





**Legend**

||||| Crest of Rock Slope

NOTES:  
1. HORIZONTAL DATUM: NAD83  
2. GRID ZONE: UTM Zone 11N  
3. IMAGE SOURCE: Bing Maps 2018, Microsoft Corporation  
Image dated May 2013

CLIENT

Alberta

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PROJECT SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM		
TITLE Site Plan S017 - Mount Baldy Rock Cut Hwy 40:12 km, 37.302		
SCALE 1:1,200	PROJECT No. A05115A03	FIG No. 1



**Photo 1**      **Rock slope height is approximately 15 m. Loose material at the brow of the slope erodes and contributes to the rockfall. Photo taken facing east on May 27, 2024.**



**Photo 2**      **Rock debris in ditch up to 1.7 m x 1.2 m x 0.8 m. Large boulder was in the ditch during the previous inspection in 2019. More debris noted since last inspection. Photo taken facing south on May 27, 2024.**





**Photo 3**      **Rock mass dilated, with large blocks noted at the brow of the slope, outside of messed area. Photo taken May 27, 2024, facing east.**



**Photo 4**      **Erosion at brow of slope, above wire mesh depositing rock debris and trees. Photo taken May 27, 2024, facing east.**

