

SITE NUMBER AND NAME: <b>S015 Crowsnest Rockfall</b>		HIGHWAY & KM: 3:02, 3.431	PREVIOUS INSPECTION DATE: June 1, 2017	INSPECTION DATE: <b>May 10, 2019</b>
LEGAL DESCRIPTION 14-05-008-05 W5M	NAD 83 COORDINATES: UTM Northing Easting 11 5499651 669776		RISK ASSESMENT: PF: 15 CF: 2 TOTAL: 30	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 4630 (west), 4630 (east) (Ref. No. 70000005)			CONTRACTOR MAINTENANCE AREA (CMA): 26	

SUMMARY OF SITE INSTRUMENTATION:  None  LAST READING DATE: N/A	INSPECTED BY: Chris Gräpel (KCB) Chris Morgan (KCB) Roger Skirrow (AT) Alex Frotten (AT) Nicolas Ropchan (AT)
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PRIMARY SITE ISSUE: Rockfall hazard; debris falling down a ravine onto the highway.

APPROXIMATE DIMENSIONS: Rock slope is approximately 75 m high, feeding into a ravine approximately 20 m wide.

DATE OF ANY REMEDIAL ACTION: Large, reinforced gabion barrier wall constructed in fall 2016 to stop debris from falling onto highway. Used conveyor belts are placed on the upslope side of the barrier to reduce the possibility of barrier wall damage from rock falls. Pavement crack sealing from unknown date.

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Pockmarks on road, seem to be old (pre-barrier). Longitudinal cracking in pavement near to the lake.		X
Slope Movement	X		Rock falls, retrogression of erosion gully at top of slope.	X	
Erosion		X	Site was dry at the time of inspection.		X
Seepage		X	None observed.	X	
Culvert Distress		X			X

<b>COMMENTS</b>
No significant changes. Barrier prevents rockfall in the ravine from impacting the highway. S015 site to be visited every 2 years as part of GRMP tour.
Maintain and repair barrier as needed. Rockfall debris needs to be regularly removed from behind wall. Mesh on adjacent rock slopes was placed to create safe access for contractors to access behind the wall. Rockfall debris is building up behind the barrier and should be cleaned during 2019.
The brow of the ravine slope is moving back to the west. Multiple sawed off stumps observed trapped in the mesh.
The mesh base cable has torn away from the mesh in places due to rockfall impacts. The cable has parted in one place, possibly due to a loose joint. The cable should be repaired and reattached to the mesh.

Ongoing longitudinal cracking of the pavement near Crowsnest Lake. Cracking is worse than 2017 and extends beyond the white line. Pavement is displaced approximately 30 mm vertically and cracks are open. A crack in the running lane was previously sealed.

Two culverts are in place to stop surface runoff erosion from undermining the northeast upslope corner of barrier.

**Photo 1** Reinforced gabion barrier wall to prevent rockfall down the ravine from reaching roadway. Photo was taken facing southeast on May 10, 2019.



**Photo 2** Rubber mats to protect gabion wall from damage. Erosion is occurring at toe of wall (red circle) and could undermine the wall. Photo taken facing east on May 10, 2019.



**Photo 3** Debris accumulation behind the barrier, needs cleaning. Photo was taken facing west on May 10, 2019.



**Photo 4** Mesh covered rock slope to the southeast of the barrier. Photo was taken facing east on May 10, 2019.

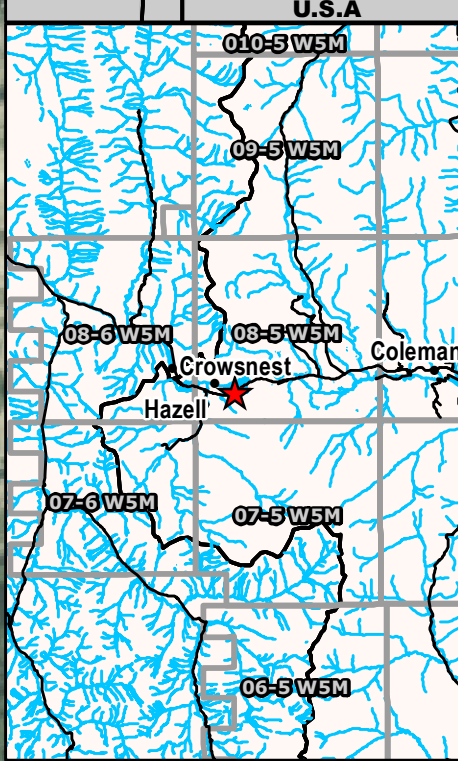
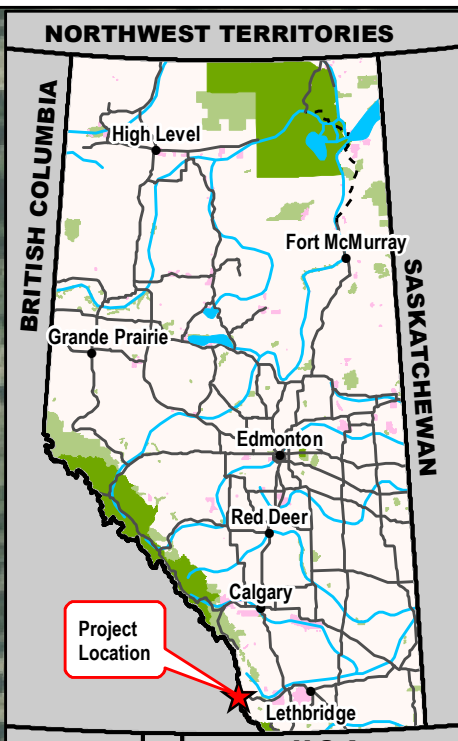


**Photo 5**      **Damaged slope mesh base cable. Photo taken May 10, 2019.**



**Photo 6**      **Pavement cracking adjacent to the lake. Photo taken facing east on May 10, 2019.**





- Legend**
- GPS Track (May 10, 2019)
  - Crack
  - Rockfall Zone
  - Area of rockfall mesh draped on slope



NOTES: 1. HORIZONTAL DATUM: NAD83 2. GRID ZONE: UTM Zone 11N 3. IMAGE SOURCE: Abacus Datagraphics Ltd. Image dated September 27, 2009 to October 5, 2010	CLIENT 	PROJECT SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM
		TITLE Site Plan S015 - Crowsnest Rockfall Hwy 3:02, km 3.431
SCALE 1:1,200	PROJECT No. A05115A03	FIG No. 1

Time: 17:20:20 PM  
 Date: May 29, 2019  
 File: Z:\A\EDM\A05115A03\ABT Southern Region GRMP\A00 Drawings\2019\2 Section BIM\XDS\015\_190528.mxd