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| SITE NUMBER AND NAME: S070-6 Eyrie Gap and Fir Creek Geohazard Site | | HIGHWAY & KM: 541:02 7.023 | PREVIOUS INSPECTION DATE: October 22, 2021 (Call-Out) | INSPECTION DATE: May 17, 2022 |
| LEGAL DESCRIPTION: SE-01-17-05 M5 | NAD 83 COORDINATES: UTM Northing Easting 11 5585666 673290 | | RISK ASSESMENT: PF: 12 CF: 2 TOTAL: 24 | |
| AVERAGE ANNUAL DAILY TRAFFIC (2021): 990 (west) & 380 (east) (Reference No. 59130 & 75150) | | | CONTRACTOR MAINTENANCE AREA (CMA): 27 | |

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| SUMMARY OF SITE INSTRUMENTATION: There is no instrumentation at the S070-6 site. LAST READING DATE: N/A | INSPECTED BY: Chris Morgan (KCB) Laura Assaad (KCB) Roger Skirrow (AT) Alex Frotten (AT) |
| PRIMARY SITE ISSUE: Near-vertical cut slope up to 20 m in height on the north side (westbound lane) of the highway with near vertical bedding planes and a strike roughly perpendicular to the highway. | |
| APPROXIMATE DIMENSIONS: Approximately 125 m long and up to 20 m high | |
| DATE OF ANY REMEDIAL ACTION: None. | |

| ITEM | CONDITION EXISTS | | DESCRIPTION AND LOCATION | NOTICABLE CHANGE FROM LAST INSPECTION | |
|-------------------|------------------|----|---|---------------------------------------|----|
| | YES | NO | | YES | NO |
| Pavement Distress | | X | Transverse cracking observed, unlikely to be related to the rockfall. | | X |
| Slope Movement | | X | Bedrock slopes with ongoing rockfall into the existing shallow catchment ditches. | | X |
| Erosion | | X | N/A – none observed | | X |
| Seepage | | X | N/A – none observed | | X |
| Culvert Distress | | X | N/A – none observed | | X |
| Rockfall | X | | Rockfall and debris flow from the slope north of the highway | | X |

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| COMMENTS |
| The bedrock at the site consists of bedded coal, shale, and conglomerate. The central position of the back slope is massively bedded, potentially limestone, and approximately 20 m in height. (Photo 1 and 4). |
| Material is eroding and weathering along the bedding planes and has formed an erosion fan consisting of sand and gravel sized particles in the central portion of the slope. (Photos 1 through 4). |
| Rockfalls are active and unweathered rockfall debris (up to 0.7 m x 0.3 m x 0.35 m) was noted in the north (westbound) ditch. The site is active with small rockfalls observed during the 2022 inspection (Photo 2 and 3). |
| Loose angular gravel, cobble and boulder sized blocks were visible in the rock mass |
| The existing ditches are shallow and appear to have sufficient capacity for the rockfall debris. |
| A large block adjacent to the debris fan is at risk of detaching and falling into the north (westbound) ditch and rebounding into the highway (Photo 4). |

Maintenance/Repair/Monitoring Recommendations:

- The site should be regularly inspected by AT's MCI and during the Southern Region GRMP Section B inspections.
- 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.
- The large block of material shown in Photo 4 should be assessed for stability and if needed, anchored to limit deformation/dilation and toppling.
- A lock block wall or HTCBC could be considered but the impact in wildlife movement and road safety would need to be evaluated.

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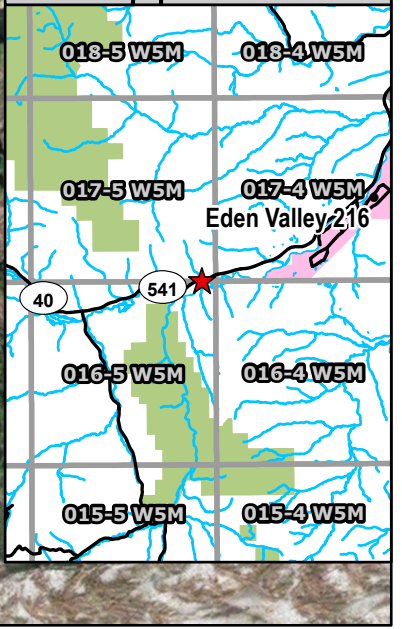
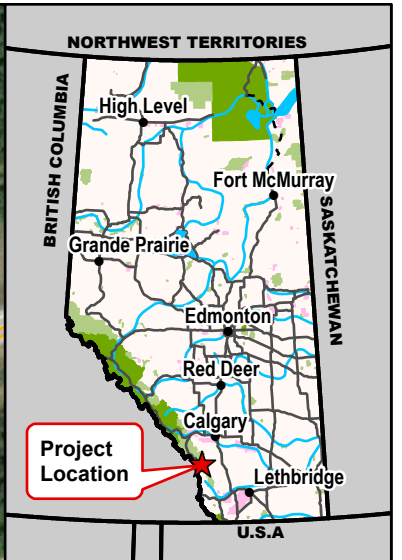
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

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| <p>Chris Gräpel, M.Eng., P.Eng. Senior Civil Engineer, Associate</p> | |
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DRAFT

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Legend

-  GPS Waypoint (May 16, 2022)
-  GPS Track (May 16, 2022)
-  Crest of Rock Slope
-  Rockfall Zone

NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM ZONE 11N
 3. IMAGE SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS AND THE GIS USER COMMUNITY.

CLIENT




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| PROJECT SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM | | |
| TITLE Site Plan S070-6 - Eyrie Gap and Fir Creek Geohazard Sites Hwy 541:02, km 7.023 | | |
| SCALE 1:3,000 | PROJECT No. A05116A03 | FIG No. 1 |

Inspection Photographs

Photo 1 Bedrock cutting on the north side of the highway estimated as up to 20 m high.
Photo taken May 16, 2022, facing north.



Photo 2 Rockfall material in the ditch and debris fan on the lower portion of the back slope.
Photo taken May 16, 2022, facing west.



Photo 3 Rockfall material in the ditch and mini debris fans on the lower portion of the back slope. Photo taken May 16, 2022, facing east.



Photo 4 Large debris fan in central portion of the slope. Block adjacent to debris fan (indicated by red circle) is at risk of detaching. Photo taken May 16, 2022, facing north.

