SOUTHERN REGION GRMP
SITE INSPECTION FORM

SITE NUMBER AND NAME:	HIGHWAY & KM:	PREVIOUS INSPECTION DATE:	INSPECTION DATE:
Unnumbered site **1.4 km South of S008**	762:02, 0.346	May 29, 2017	**April 30, 2018**

LEGAL DESCRIPTION:	NAD 83 COORDINATES:	RISK ASSESMENT:
13-02-021-04 W5M	UTM 11 Northing 5626018 Easting 678916	PF: 9 CF: 6 TOTAL: 54

AVERAGE ANNUAL DAILY TRAFFIC (AADT):	CONTRACTOR MAINTENANCE AREA (CMA):
800 (north), (Ref No. 65170)	27

SUMMARY OF SITE INSTRUMENTATION:	INSPECTED BY:
None	Chris Gräpel (KCB) Peter Roy (KCB) Alex Frotten (AT) Roger Skirrow (AT) Maury Siddons (AT)

PRIMARY SITE ISSUE: Cracking and settlement on the highway surface due to instability caused by embankment erosion from a creek at the east toe.

APPROXIMATE DIMENSIONS: Embankment is approximately 6 to 7 m high, with 4H:1V slopes. Pavement cracking extends over a 50-m length and extends to the west edge of pavement (across entire width of pavement). Settlement at the south end, with cracking at the north end of the movement zone (Present during the May 2017 inspection. No additional cracking noted during the April 2018 inspection, after paving work completed).

DATE OF ANY REMEDIAL ACTION: Overlays and patching have been conducted in previous years. The highway was milled and paved in Fall 2017. Fill was added to both the east and west embankments of the highway and graded.

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Previous cracking has not reappeared since recent paving work.	X	
Slope Movement	X		Fence displacement and tilted in the downslope direction		X
Erosion	X		Erosion due to the creek below highway.	X	
Seepage	X		Seepage noted on slope at the north extent of the failure area.		X
Culvert Distress	X		900 mm diameter culvert inlet on the west side of high is corroded, possible that water is draining into embankment. Can't see though culvert.		

COMMENTS

The highway embankment is in a creek valley and downslope of a hill.

High flow water comes out of culvert on east side of highway during periods of heavy rainfall. The water hits the bank directly downstream of culvert and changes direction, about 65° to the north, and is eroding toe of embankment supporting highway. Embankment slope movements may have shifted the creek to the east.

Southeast ditch is eroding. Ditch discharges at outlet of culvert.

Can not see through culvert from either end, potentially due to deflection and distress below the road surface. The creek flow entering the culvert appears to be flowing faster than discharge flows from the outlet of the culvert. The

culvert is corroded and may be partially blocked, or damaged with leakage from the culvert into embankment fill beneath highway. AT reported that the culvert periodically plugs. A camera inspection of the culvert should be completed to determine the extent of the distress and or separation beneath the road.
Erosion in riprap armoured ditch channel to south of culvert with filter fabric exposed at waypoint 590. Riprap armouring is poorly graded and includes many gravel-sized and poor-durability particles.
Seepage on the east embankment slope is likely due to natural groundwater flow from the higher ground to the west of the highway.
Mitigation measures could include re-aligning the culvert to discharge further downstream, away from the toe of the embankment, and reconstructing the embankment with geosynthetic reinforced fill. Other options would be a pile wall, lower the height of the embankment, with consideration of the impact of grade lowering on the vertical alignment of the road, or install a gravel-backfilled groundwater collection trench in the upslope ditch.