

GEOHAZARD RISK MANAGEMENT PROGRAM

North Central Region – Edson / Stony Plain Area

2020 Inspection Report

Site Number	Site Name		Hwy	km
NC76	Blue Ridge Slide		658:02	7.5
Legal Land Description	SW 25-56-10-W5M			
UTM Coordinates (NAD 83)	Zone 11U	N5999049	E606082	
Operational Site Instrumentation	Slope Inclinometers		3	
	Pneumatic Piezometers		0	
	Vibrating Wire Piezometers		0	
	Standpipe Piezometers		0	
Date of Last Instrumentation Readings	May 22, 2020			

Risk Assessment	Date	PF	CF	Risk Ranking
Current Inspection	May 25, 2020	4	6	24
Previous Inspection	May 30, 2018	13	6	78
Report Attachments	<input checked="" type="checkbox"/> Photographs (9 photos)		<input checked="" type="checkbox"/> Site Plans (1 page)	

	Stantec	Alberta Transportation
Inspected By	Leslie Cho	Kristen Tappenden and Kathleen Davis
Date of Remediation	Berm and drain construction started in October 2018 and finished July 2019.	

Recent Maintenance	Culvert replacement in 2009. Asphalt patching in 2011. Asphalt patching in 2015 due to sudden vertical movement.	
Primary Site Issue	Slope instability during and following culvert replacement in 2009. Culvert distress and pavement cracking.	
Observations	Description and Location	Change from Previous Inspection
<input checked="" type="checkbox"/> Pavement Distress	Cracking at access to residence at north limit	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Culvert Distress		<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Bridge Distress		<input type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Slope Movement	Tension crack south of culvert inlet	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input checked="" type="checkbox"/> Erosion	Erosion gullying east side of Highway.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Seepage		<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No

Discussion	<p>Remediation of site NC76 occurred from October 2018 to July 2019. Pavement cracking at the entrance to the resident at the north site limits appeared unchanged since 2018. As part of remediation, the distressed patch of pavement upslope from TH12-3 was repaired and shown in Photo 2. No signs of distress were observed at the newly placed pavement.</p> <p>The deformed beveled end of the culvert outlet was removed and extended downstream by about 23 m to facilitate construction of a clay toe berm. Drainage elements were constructed including a French drain at observed seepage locations as well as a granular drainage blanket beneath the entire berm. The surficial erosion in the west ditch near the tree line was also regraded. These repairs are shown in Photos 3 to 5. The second subdrain from the culvert outlet (northwest subdrain) was observed to be flowing. The subdrain closest to the culvert could not be identified due to riprap coverage. The overall west slope repair is shown in Photo 6.</p> <p>Erosion gullies up to 1.2 m deep and 2.3 m wide were observed on the east side of the highway leading to the culvert inlet as shown in Photos 7 and 8.</p> <p>Tension cracks south of the culvert inlet was observed as shown in Photo 9. The ground crack was about 100 mm wide by 15 m long by 200 mm high.</p>
-------------------	---

Assessment	<p>The highway appears to be performing satisfactorily post-remediation with no signs of distress at the culver outlet or along the newly repaired pavement. The slope inclinometers show signs of fill settlement but do not indicate any zones of movement.</p> <p>Observations from the site inspection suggest a marginally stable slope exists near the culvert inlet on the east embankment slope. Although this instability currently appears to be minor, it is anticipated that the tension crack will gradually worsen especially with increased precipitation and erosion of the creek banks.</p>
Recommendations	<p>No remediation is required for the west embankment slope.</p> <p>Given the shallow nature of the tension crack on the east embankment slope, minor regrading of the cracks can help reduce surface water infiltration. Instrumentation consisting of piezometers and slope inclinometers can be considered for more detailed remediation strategies.</p> <p>Regrading of the drainage ditch along the east embankment slope should also be completed.</p> <p>The site should be inspected annually with instrumentation monitoring completed semi-annually.</p>