

SITE NUMBER AND NAME: S045-II Threepoint Creek		HIGHWAY & KM: 549:02, 12.315	PREVIOUS INSPECTION DATE: June 8, 2020	INSPECTION DATE: July 5, 2021
LEGAL DESCRIPTION: 02-08-021-03 W5M	NAD 83 COORDINATES: UTM Northing Easting 11 5626611 684647		RISK ASSESSMENT: PF: 7 CF: 8 TOTAL: 56	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 760 (east), (Ref. No. 65170)			CONTRACTOR MAINTENANCE AREA (CMA): 27	

SUMMARY OF SITE INSTRUMENTATION: None LAST READING DATE: N/A	INSPECTED BY: Chris Morgan (KCB) Chris Grapel (KCB) Alex Frotten (AT) Roger Skirrow (AT)
PRIMARY SITE ISSUE: Erosion on the outside of a creek bend. The crest of the side channel erosion scarp is approximately 7.2 m from the edge of the pavement.	
APPROXIMATE DIMENSIONS: Approximately 80 m length of highway, erosion scarp approximately 8 m in height, sloped approximately 0.5H:1V.	
DATE OF ANY REMEDIAL ACTION: None.	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	None observed		X
Slope Movement		X			X
Erosion	X		Ongoing erosion of creek bank, minimal change since 2020 due to debris dam blocking flow in the side channel		X
Seepage	X		Some seepage observed at the toe of bank	X	
Culvert Distress		X			X

COMMENTS
The side channel adjacent to Site II became blocked by a wood debris dam deposited in June 2013, which restricts flow in the side channel. When compared to the 2019 inspection, increased channel flow was observed during the 2020 and 2021 site visits, suggesting that the debris dam is decaying and breaking down.
The 2020 observations noted that the creek has started outflanking the debris dam on the upstream side. KCB were unable to visit the debris dam in 2021 due to increased flow in the channel.
No change in condition of the erosion scarp observed in 2021. Increasing flow in the side channel may lead to reactivation of earth slope toe erosion.
The fence at the top of the eroded slope has been undermined and 5 posts have fallen over.
A pipeline is present, located between highway and the side channel and running parallel to the highway.
A tension crack appeared to be forming in the embankment side slope, approximately 1.8 m upslope of the existing bank erosion crest. No observable change from 2020 to 2021.

Preliminary design of repair options has been completed, including bank reconstruction and riprap placement. In the short-term, guardrail should be installed to minimize potential for motorists going over the steep erosion scarp as it is located within the clear zone.

This report is an instrument of service of Klohn Crippen Berger Ltd. (KCB). The report has been prepared for the exclusive use of Alberta Transportation (Client) for the specific application to the Southern Region Geohazard Risk Management Program (Contract No. CON0022161) and it may not be relied upon by any other party without KCB's written consent.

KCB has prepared this report in a manner consistent with the level of care, skill, and diligence ordinarily provided by members of the same profession for projects of a similar nature at the time and place the services were rendered. KCB makes no warranty, express or implied.

Use of or reliance upon this instrument of service by the Client is subject to the following conditions:

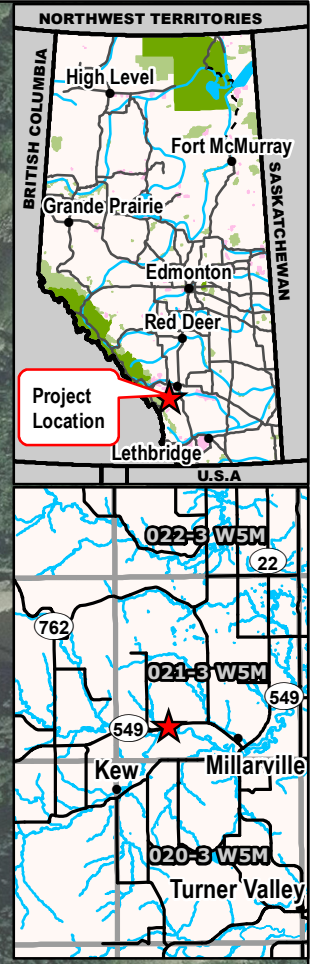
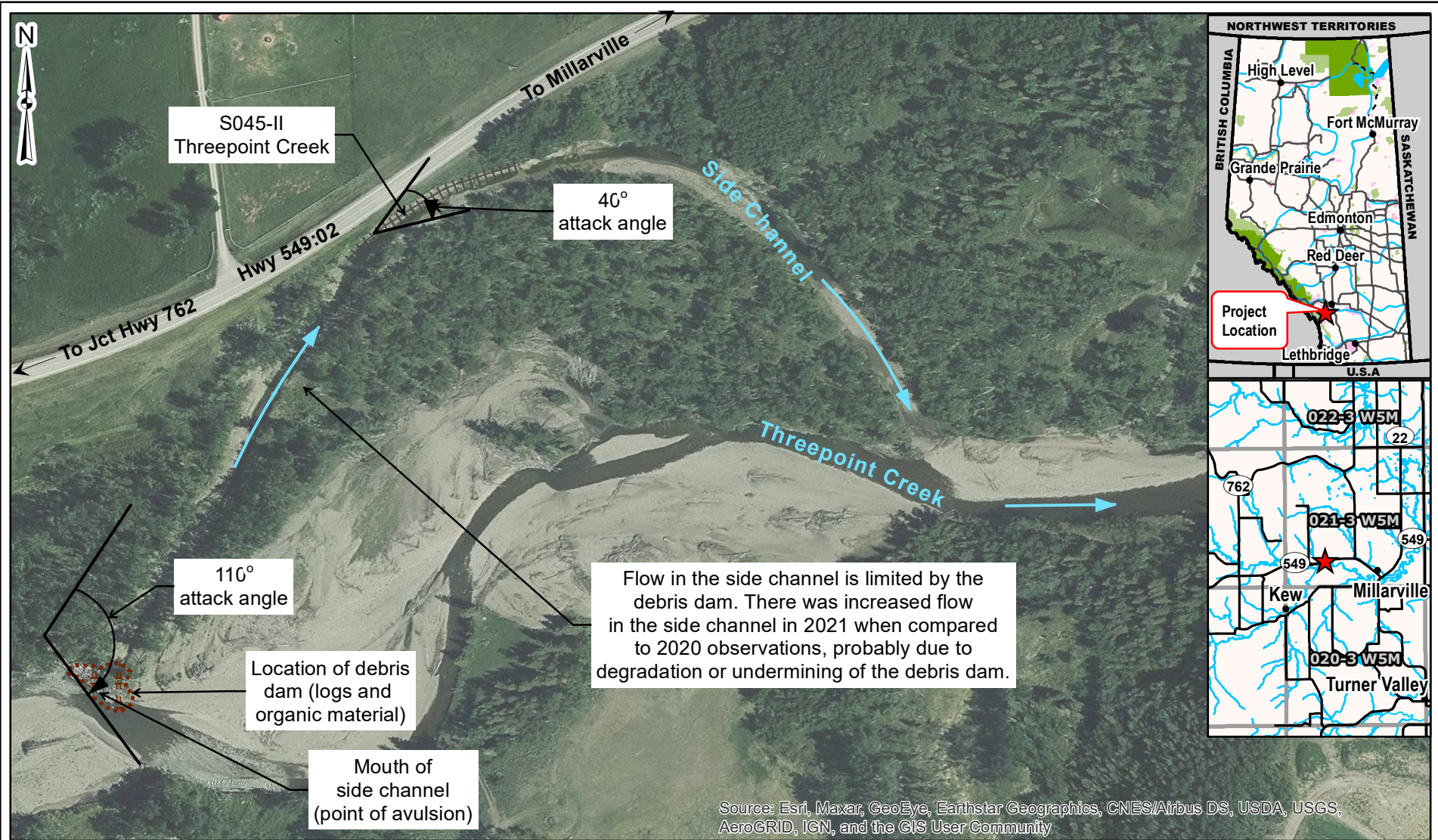
- (i) The report is to be read in full, with sections or parts of the report relied upon in the context of the whole report.
- (ii) The observations, findings, and conclusions in this report are based on observed factual data and conditions that existed at the time of the work, and should not be relied upon to precisely represent conditions at any other time.
- (iii) KCB should be consulted regarding the interpretation or application of the findings and recommendations in the report.



2021-11-24

Chris Morgan, M.Sc., P.Eng.
Senior Geotechnical Engineer

Time: 15:12:13 PM
 Date: October 07, 2021
 File: Z:\MCG\Alberta\A05116A03\ABT Southern Region GRMP\400 Drawings\2021\Section B figures\MXD\S045_2_211007.mxd Date: October 07, 2021 Time: 15:12:13 PM Creator: ahrarrison



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Flow Direction
- Bank Erosion
- Debris Dam



NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM Zone 11N
 3. IMAGE SOURCE: World Imagery, ArcGIS Online
 Source Date January 15, 2015



PROJECT
 SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE
 Site Plan
 S045-2 - Threepoint Creek
 Hwy 549:02; km 12.315

SCALE 1:3,000	PROJECT No. A05116A03	FIG No. 1
---------------	-----------------------	-----------

Photo 1 Highway slope above area of toe erosion on secondary channel S045-II. Photo was taken facing northeast on July 5, 2021.



Photo 2 Increased flow observed in the side channel when compared to 2020 observations. Photo was taken facing southwest on July 5, 2021.



Photo 3 **Increased flow in the side channel potentially leading to an increase in bank erosion adjacent to the highway. Photo was taken facing east on July 5, 2021.**

