



**PEACE REGION
(GRANDE PRAIRIE DISTRICT – SOUTH) GRMP**



SITE INSPECTION FORM

SITE NUMBER AND NAME: GP039-I and -II South of LaGlance Erosion Sites		HIGHWAY & KM: 724:04, 13.349 and 21.191	PREVIOUS INSPECTION DATE: July 20, 2021	INSPECTION DATE: June 11, 2024
LEGAL DESCRIPTION: SE 04-73-08-W6M SE 33-73-08-W6M	NAD 83 COORDINATES: UTM Northing Easting 11 6129293 363209 11 6137021 363442		RISK ASSESSMENT: GP039-I PF: 2 CF: 1 TOTAL: 2 GP039-II PF: 10 CF: 8 TOTAL: 80	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 1,200 (north) & 1,330 (south) (Reference No. 27750, 2023)			CONTRACT MAINTENANCE AREA (CMA): 504	

SUMMARY OF SITE INSTRUMENTATION: There is no instrumentation at the GP039 site LAST READING DATE: N/A	INSPECTED BY: Chris Gräpel (KCB) Courtney Mulhall (KCB) Robert Senior (TEC) Rishi Adhikari (TEC) Babatunde Awokunle (TEC) Sacha Soltys (TEC) Jason Parr (TEC) Darrell Westhaver (TEC)
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PRIMARY SITE ISSUE: GP039-I: A former erosion gully, which was repaired in 2022/2023, on west side of Hwy 724:04 on north valley slope of a Fish creek. GP039-II: an erosion gully on west side of Hwy 724:04 at southwest corner of a bridge over Bear River. Some erosion also occurred during a highwater event near the double timber bridge headwalls but is not affecting approach fill or headwalls.

APPROXIMATE DIMENSIONS:

GP039-I: Previous erosion gully was up to approximately 10 m wide at crest, 5 m to 6 m deep, and 20 m long with 0.5H:1V to 1H:1V side slopes.
GP039-II: Erosion gully up to approximately 3 m deep and 4 m wide.

DATE OF ANY REMEDIAL ACTION: GP039-I site: 2012/2013 - ditch re-routed from its former location further upslope to its current location. 2022/2023 – west and east highway ditches repaired, and riprap-lined channel with check trenches and toe apron constructed on west side of highway in former gully (see below).

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Some cracking in pavement surface at both sites, which appear unrelated to erosion feature (Photos 3, 11, and 16).		X
Slope Movement	X		Side slopes of channel downstream of riprap-lined channel at GP039-I are failing (Photo 4).		X
Erosion	X		GP039-I: some rill erosion where there is little to no vegetation re-establishment. GP039-II: erosion gully on west side of highway and south bridge abutment (Photos 13 and 14). Just south of bridge gully is approximately 4 m to 6 m from edge of pavement. Erosion also observed along corners of wingwalls (Photo 17).	X	
Seepage	X		None observed at time of 2024 inspection, but landowner has previously said water would seepage out into gully at GP039-I after heavy rainfall or runoff events.		X

SITE INSPECTION FORM

Culvert Distress		X	None observed at time of 2024 inspection.		X
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COMMENTS

GP039-I (Ditch Erosion) (Photos 1 to 12):

- Before repair, erosion gully was retrogressing outside highway right-of-way onto privately owned land and was up to approximately 2 m from edge of pavement. Localized erosion was also present in west highway ditch and around two corrugated-steel-pipe (CSP) culvert below private driveway leading to pond water and exposure of a buried utility cable.
- Site was originally repaired between November and December 2022. Then in March 2023 a tractor-trailer-truck transporting molten sulfur overturned at the site, releasing diesel and molten sulfur onto Hwy 724:04 and into the west and east highway ditches, including the riprap-lined channel constructed at the site in 2022. In the process of removing the contaminated materials, most of the 2022 repair (riprap, granular fill, and non-woven geotextile) was removed, creating a channel. The site was thus repaired a second time between April and June 2023.
- Valley bottom downslope of riprap-lined channel drains toward creek. Valley is approximately 4 m wide with sides slopes that are approximately 3 m high, 1H:1V, and failing. Valley bottom has irregular topography and various fallen trees and pockets of understory vegetation that impede the transport of eroded material towards creek.
- Since post construction inspection completed in June 2023, some additional riprap placed along riprap-lined channel to increase freeboard (still a little low on inside bend but should be above water for most flows and soil is covered with geotextile, Photos 3 and 5), an erosion feature in west highway ditch repaired (Photo 8), inlet of CSP culvert repaired and more riprap placed in apron (Photo 10), and guardrail replaced (Photos 3 and 10).

GP039-II (Bridge Abutment Erosion) (Photos 13 to 17):

- Bear River is a mapped C watercourse with a restricted activity period (RAP) of April 16 to July 15. The river is considered fish bearing.
- Two black utility lines and one larger diameter orange line previously observed in erosion gully.
- Black HDPE pipe along east side of highway crosses under bridge to east side of highway.
- Bridge has double creosote timber head slope walls.

Maintenance/Repair/Monitoring Recommendations:

- GP039-I:
 - Turf reinforcement mat (TRM) placed over erosion feature repaired in west highway ditch is pulled up and should be re-anchored or replaced (Photo 8).
 - Portions of repair have started to revegetate, but there are still areas with little to no vegetation. It was noted in the 2023 construction summary report that seed coverage on site appeared sparse, and additional seeding may be required. Some more seed should be spread where there is little to no vegetation
 - TEC’s Maintenance Contract Inspection (MCI) should continue to inspect the site regularly until vegetation is re-established.
- GP039-II:
 - Erosion gully is close to highway in some locations and is a potential roadside hazard to motorists who go off the highway and will eventually begin to impact pavement surface and possibly the bridge. The erosion gully should be repaired. Possible repair options could include establishing a ditch where erosion has occurred and armouring the ditch with riprap. Estimated cost: \$50,000 to \$150,000.

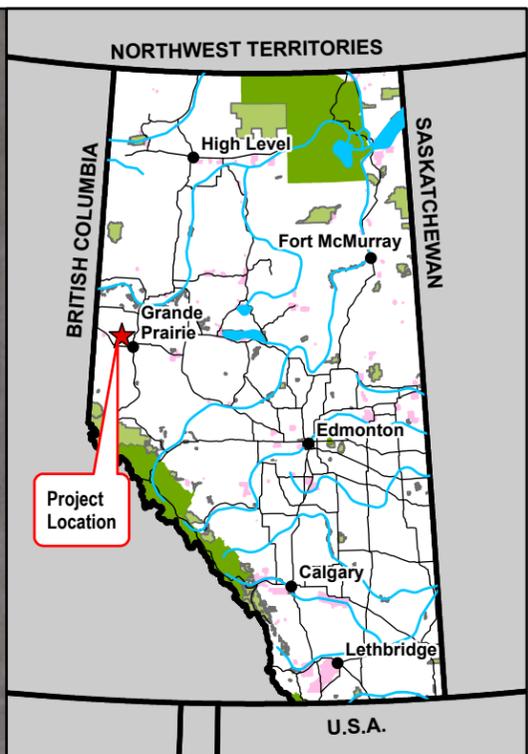
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- (ii) The observations, findings and conclusions in this report are based on observed factual data and conditions that existed at the time of the work and should not be relied upon to precisely represent conditions at any other time.
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Courtney Mulhall, M.Sc., P.Eng.
Geotechnical Engineer



Legend

- Watercourse
- ➔ Flow Direction
- Powerlines



NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM ZONE 11N
 3. IMAGE SOURCE: 2022 MICROSOFT CORPORATION, 2022 MAXAR CNES, DISTRIBUTION AIRBUS DS



PROJECT: PEACE REGION (GRANDE PRAIRIE DISTRICT-SOUTH) GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE: Site Plan
 GP039-I South of La Glace Erosion Sites
 Hwy 724:04, km 13.349

SCALE: 1:2,000 PROJECT No. A05116A01 FIG No. 1

File: Z:\A\EDMA05116A01\ABT Grande Prairie South GRMP\400 Drawings\GIS\MXD\2024\Section B\AT_GP_South_SectionB_241015.aprx Date: Time: Creator: AHarrison



Legend

-  Flow Direction
-  Watercourse
-  Powerlines
-  Asphalt Patch
-  Erosion



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 1. HORIZONTAL DATUM: NAD83
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CLIENT




PROJECT
 PEACE REGION (GRANDE PRAIRIE DISTRICT-SOUTH)
 GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE
 Site Plan
 GP039-II South of La Glace Erosion Sites
 Hwy 724:04, km 21.191

SCALE 1:1,000 PROJECT No. A05116A01 FIG No. 1

GP039-I South of La Glace Erosion Sites

Photo 1 Overview of GP039-I site on Hwy 724:04. Photo taken with Unmanned Aerial Vehicle (UAV) June 11, 2024, facing south.



Photo 2 Overview of GP039-I site on Hwy 724:04. Photo taken with UAV June 11, 2024, facing northwest.



Photo 3 Riprap-lined channel constructed in 2023 in former erosion gully. Note riprap a little low on inside corner (circled in white). Photo taken with UAV June 11, 2024, facing southwest.



Photo 4 Channel downstream of riprap-lined channel and apron. Photo taken June 11, 2024, facing northeast.



Photo 5 End of riprap-lined channel. Note riprap a little low on inside corner (circled in white). Photo taken June 11, 2024, facing northeast.



Photo 6 Start of riprap-lined channel. Photo taken June 11, 2024, facing southwest.



Photo 7 Transition between unarmoured ditch and riprap-lined channel. and Photo taken June 11, 2024, facing east.



Photo 8 Unarmoured ditch on west side of Hwy 724:04. Note turf reinforcement mat (TRM) (green product) and rolled erosion control product (RECP) (brown product) placed in ditch. TRM place over erosion feature repaired after 2023 post-construction inspection and is pulled up. Photo taken June 11, 2024, facing north.



Photo 9 Unarmoured ditch on west side of Hwy 724:04. Photo taken June 11, 2024, facing southwest.



Photo 10 Twin 800 mm diameter CSP culverts and riprap apron. Photos taken June 11, 2024, facing northwest (outlet) and southwest (inlet), respectively.



Photo 11 Pavement surface of Hwy 724:04. Some cracking above the previously repaired erosion gully. Photos taken June 11, 2024, facing southwest and northwest, respectively.



Photo 12 West side of Hwy 724:04. Photos taken June 11, 2024, facing northeast and southeast, respectively.



[GP039-II South of La Glace Erosion Sites](#)

Photo 13 West side of Hwy 724:04 and bridge at GP039-II site. Note erosion gully (see next photo). Photo taken June 11, 2024, facing south from north abutment of bridge.



Photo 14 Erosion gully on west side of Hwy 724:04 at GP039-II site. Note silt fence is undermined. Photos taken June 11, 2024, facing south and west, respectively.

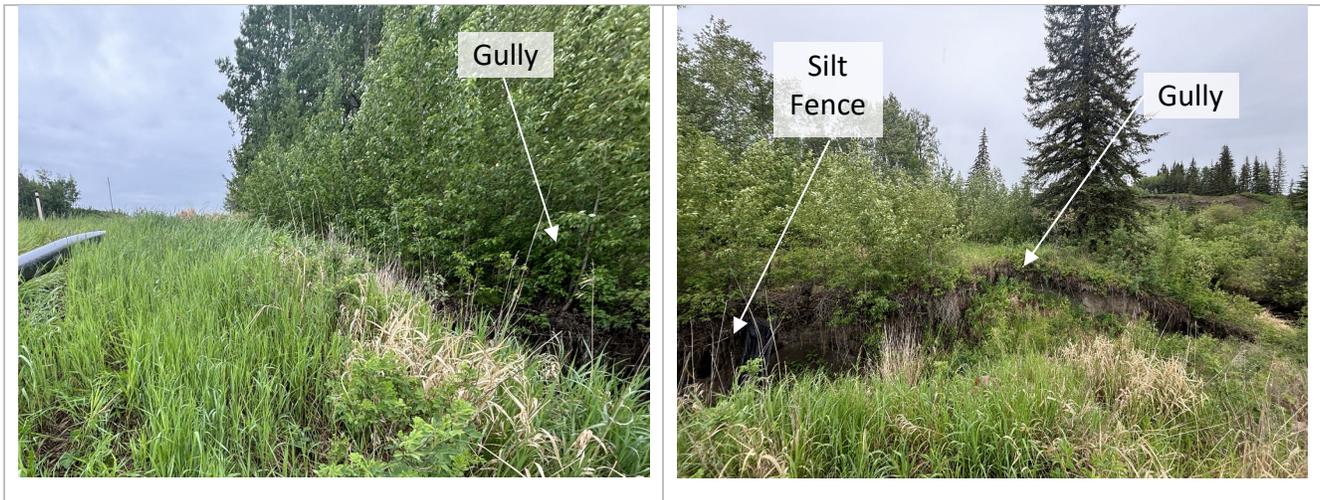


Photo 15 East side of Hwy 724:04 and bridge at GP039-II site. Photo taken June 11, 2024, facing north from south abutment of bridge.



Photo 16 Cracking and dip in pavement surface of Hwy 724:04 at south abutment of bridge at GP039-II site. Photo taken June 11, 2024, facing southeast.



Photo 17 Erosion at northwest and northeast bridge wingwalls. Photos taken June 11, 2024, facing southeast and southwest, respectively.

Northwest



Northeast

