BRIDGE DATA:

Bridge No./Name:	SI – 3041: Mt Brenton FSR / Humbird Creek (6.5 KM)
Inspection Date:	June 22, 2015
Inspected By:	S. Stanley, J. Pheh
Year Built:	1995
Number of Spans:	1
Location:	48° 52' 7.2" N 123° 51' 3.7" W

Span Lengths:	12 m (o/o) 11.2 m (c/c)
Superstructure:	Two creosote treated glulam slab girders – 1210 mm deep x 280 mm wide; spaced at 3630 mm c/c.
Deck:	4.62 m wide (o/o) 1 layer of untreated timber running planks (90mm thick). Treated transverse timber ties (200 mm x 250 mm @ 400mm c/c).
Curb:	Untreated timber curbs and risers.
Substructure:	Abutments - 2.5 log high cedar log (approx. 750mm dia each) cribs with creosote treated timber bearing sill.

GENERAL BRIDGE CONDITION:

Superstructure Condition:	Fair to Good
Substructure Condition:	Fair to Good
Deck Condition:	Fair
Approaches:	Poor
Load Posting:	N/A
Date for the Next Close Proximity Inspection:	2017
Projected Replacement Date:	2019

INSPECTION NOTES

Approaches:

- The approaches are overgrown with vegetation.
- Camp end approach road is rutted below top of running planks. Woods end approach road is also rutted.
- All guide logs are heavily rotted.
- Woods end guide logs are misaligned, falling down side slopes and ineffective. Camp end upstream guide log is displaced.
- Camp end upstream delineator is small. All other delineators are present but damaged.
- There are no load posting signs present.

Deck

- Running planks, are in fair condition with a moderate amount of debris accumulation.

- Ties and curbs are generally in good condition.

Girders:

This single span bridge is comprised of 2 girders. Both sides of both girders were inspected and found to be in fair to good condition. It was noted in the previous inspection, however, that these glulam girders were likely reused from another bridge and therefore their age is unknown.

The most notable deterioration of these girders was found on the downstream face of the downstream girder where only narrow, shallow, medium length checks / splits were observed. While minor propagation of existing checks / splits was noted, they do not appear to be cause for immediate concern.

The downstream girder has a vertical steel tie rod clamp installed at approximately 1000 mm from the camp end abutment, as seen from a distance in Photo #12 of the photo log. It appears this clamp is associated with several epoxy injection tubes located at approximately 75 mm from the bottom of the downstream girder (on both faces), extending 2500 mm from the camp end abutment. The repair performed to this check appears to be functioning as intended.

Timber Glulam check / split reference terminology is as follows:

Width
- Narrow - ≤2 mm wide
- Medium - 2 - 5 mm wide
- Wide - ≥5 mm wide

Depth
- Shallow - ≤80 mm deep
- Medium - 80 - 120 mm deep
- Deep - ≥120 mm deep

Length
- Short - ≤2 m long
- Medium - 2 - 4 m long
- Long - ≥4 m long

Girder 1 (U.S):

Exterior Face (U.S):

- Creosote coverage of approx. 75 % remaining.
- Isolated narrow (≤1mm), shallow, short checks.

Interior Face (D.S):

- Creosote coverage of approx. 100 % remaining
- Isolated narrow (≤1mm), shallow, short checks.

Girder 2 (D.S):

Interior Face (U.S):

- Regular narrow (≤1mm), shallow, short checks.
- Visible creosote on nearly 100% of girder face.

Exterior Face (D.S):

- Regular narrow (≤1mm) shallow, short checks (none more than 2.5m in length)
- Creosote leaching; visible creosote on ~50 % of the girder face.
- Checks cited in previous inspection report are found to have propagated since the last inspection, however still do not represent a concern based on width and depth.

- Notable:
  - Average 1.5mm wide, x 3.1m long, but typically less than 1mm wide checks,

- Average 2.0mm wide x 3.3m long.

Abutments:

- Generally in fair to good condition.
- Creosote treated timber bearing sills appear to be in good condition.
- Creosote treated ballast wall and wingwalls were in good condition where visible and accessible.
- Surficial (approx. 25mm deep) deterioration on cedar crib logs noted.
- Wood shavings/dust on top of the abutment cribbing noted at camp end suggests possible presence of wood burrowing insects, though a specific source was not observed.
- Riprap coverage upstream of both abutments appears sufficient, however, riprap armoring in front of the log cribs was lacking in areas, as shown in Photos #5 & 6 of the photo log.

BRIDGE INSPECTION SUMMARY / RECOMMENDATIONS:

Generally, the bridge was found to be in fair to good condition. The girders were routinely sounded during the inspection, with no suspect areas noted, however the creosote sealant is leaching off, leaving the exterior faces of the timber girders exposed to the elements. This exposure has led to the presence of regular small, but propagating checks / splits. Continued close monitoring of the girders is recommended within the next two years.

This inspection took place during dry conditions with a dry creek bed as evidence. The previous inspection appeared to have taken place during rainy conditions and noted pooling water in the rutting of the approaches. Though pooling water was not noted during our inspection, the approaches are still significantly rutted.

This bridge appears infrequently used as over the course of 5.5 hours, 1 motorcycle passed across the bridge.

A load rating analysis is currently be undertaken for this bridge structure.

The following maintenance works are recommended:

ITEM	DESCRIPTION	PRIORITY
1	Replace and re-position the approach guide logs.	High
2	Clear brush at approaches to expose bridge hazard markers.	High
3	Re-grade approach roadways to allow for better drainage of the bridge deck, and clear off the debris accumulation from the wearing surface.	Medium
4	Replace / place additional rip rap in front of abutment cribs.	Medium

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SI-3041

2015 Close Proximity Inspection

June 22, 2015

Photo #1
Upstream Elevation

Photo #2
Downstream Elevation

	Photo #3 Camp End Approach
	-Rutting of approach road -Obscured and unequal size of hazard markers -Guide logs misaligned and not visible in picture
	Photo #4 Woods End Approach
	-Significant accumulation of debris on deck -Rutting on approach road -Guide logs misaligned and not visible -Hazard markers completely obscured by foliage

Photo #5
Camp End Abutment (A2)

-Portion of log crib not well armored by riprap.

Photo #6
Woods End Abutment (A1)

-Majority of log crib not well armored by riprap.

Photo #7
Camp End Abutment (A2)

-Note wood debris and wood shaving at top of abutment. Signs of insect infestation of timber crib.

Photo #8
Camp End (A2), D.S Wingwall / end of Ballast Wall

-Appeared to be in good condition, though heavily overgrown.

Photo #9
Girder 1, Exterior face

-Approx >75% creosote coverage remaining

Photo #10
Girder 1, Interior face

Photo #11
Girder 1, Interior face

-Example of regular, narrow check on interior face.

Photo #12
Girder 2, Exterior face

-Note epoxy injection tubes at camp end
-Note creosote leaching, with approx. 50% creosote coverage remaining

Photo #13
Girder 2, Exterior face

-Check propagation noted since placement of tags, however still not of significant concern

Photo #14
Girder 2, Exterior face

-Diagonal check propagating out near AE 2339. Depth of check is still not of concern.

Photo #15
Girder 2, Exterior face

-Check propagation noted since placement of tags, however still not of significant concern.

Photo #16
Girder 2, Exterior face

-Widest check noted at 2mm wide and approx. 60mm deep.

Photo #17
Typical space between transverse deck ties

-Typical condition of ties with regular checks

Photo #18
Typical underside of deck

-Typical condition of underside of deck