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Engineering

GLOBAL PERSPECTIVE
LOCAL FOCUS.

BRIDGE INSPECTION REPORT

GLULAM BRIDGE INSPECTION SUMMARY



Ministry of
Forests and Range
Forest Service

Business Area	Location	Road Name	Project #	Sta. (km)	Eastling	598798
Skeena Slikine	New Hazelton	Suskuwa FSR	2013-2495	1.80	Northling	6120472
Bridge Name	Site ID	Stream Name	Class.	Inspected By	Inspection Date	
	R3-074	Bulkley River		D. Chen/ M. Hanson	1-Oct-13	
Superstructure Type		Deck Type	Substructure Type		Live Load Rating	
Glulam		Timber	Concrete Footings		Present	81
Bridge Length	# Spans	Span Length(s)	Deck Width		Bridge Use	Installation Date
46.2	m	1	45.8		m	4.35
Reference Drawings		m		Permanent		1967

NOTES: Excellent : New or almost new condition and properly installed

Good : Structurally sound, in good repair and have minimal wear

Fair : Structurally sound, but show moderate wear or preliminary indications of rot or corrosion

Poor : Structurally unsound, major items in need of repair or replacement, or bridge load rating should be reduced

Abutment, spans, piers numbered from left bank, facing downstream.

BRIDGE ELEMENT	CONDITION	REMARKS
Approach Road	Fair	Minor potholes and rutting adjacent to abutment joint noted at both approaches; water ponding noted at left end approach. Left end approach joint armoring has failed.
Alignment	Good	
Visibility	Good	
Signage	Poor	"Bridge approach" sign noted at left end approach only.
Delineators	Fair	Right end approach downstream delineator damaged (bent), other delineators good.
Barriers	Fair	Concrete barriers at left end approach are not aligned with the bridge curbs; upstream barrier has a 1 m gap to curb rail and the end section is not connected. Spalls noted on both left end barriers. Right end approach has concrete barriers on both sides; good condition.
Overall	Fair	
Timber Deck	Poor	Wearing planks are heavily worn and have numerous pockets of rot. Debris accumulation on deck surface.
Ties & Subdeck	Fair	Drilled 3 locations, structural planks and ties are moist and showing initial signs of decay.
Nails	Fair	A number of nail heads are protruding from wearing planks.
Deck to Girder Bolts	Good	
Curbs & Blocks	Good	Curb rails have rub damage near the bridge ends.
Hand Rails	Fair	Broken post and top plank on upstream handrail at left end of bridge; two top planks are broken on downstream handrail near left end of bridge.
Hardware	Good	
Overall	Fair	

APPROACH

DECK



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Bridge Name	Site ID	Stream Name	Class.	Inspected By	Inspection Date	
	R3-074	Bulkley River		D. Chen/ M. Hanson	1-Oct-13	

REPAIR DESCRIPTION AND COST ESTIMATE:

No.	Description	Priority	Cost Estimate
1	Repair potholes in approaches (asphalt patch ~ 1 m2)	Medium	\$1,000
2	Replace wearing planks (75mm x 250mm planks covering 4.3m x 46.2 m area)	Medium	\$15,000
3	Replace 3 top handrail sections and 1 handrail post (100mm x 150 mm top planks, 200mm x 150 mm x 1450mm post)	Medium	\$2,000
4	Realign approach barriers	Low	\$1,500
Total			\$19,500

NOTES:

High : Immediate, non-recurring repair to assure public safety
Medium : Ongoing, regular maintenance items to protect capital investment
Low : Minor maintenance items or improvements to extend service life

MONITORING ITEMS:

No.	Description
1	Monitor concrete deterioration on right end abutment and both wingwalls.
2	Monitor condition of Girder 1 upstream face at checks along the bottom flange at the web joint where water and debris are accumulating.

LIVE LOAD ASSESSMENT: (In accordance with MoFR Requirements)

Vehicle	Vehicle	Comment
Off-Road		Based on the inspection, there is no reason to reduce the current load rating.
Highway	CL-1 CL-2 CL-3	

COMMENTS:

The bridge is generally in fair condition. Water and debris is continuing to penetrate girder 1 through check AE954 to AE1332 and check AE2261 to AE2260; however, no decay has been identified. The condition has not changed since the 2011 inspection. While we observed deterioration of the concrete abutment, there is no signs of instability.

The anticipated replacement based on current condition is 5-10 years.

SEAL:





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Figure 1-1: Looking upstream.



Figure 1-2: Looking downstream.



Figure 1-3: Upstream elevation.



Figure 1-4: Downstream elevation.



Figure 1-5: Left end approach.



Figure 1-6: Right end approach.

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Skeena Slikine	New Hazelton			Suska FSR			
				2013-2495	1.80	Northing	6120472



Figure 1-7: Left end approach joint - note pothole.



Figure 1-8: Left end approach joint - note failed armoring.



Figure 1-9: Right end approach joint.

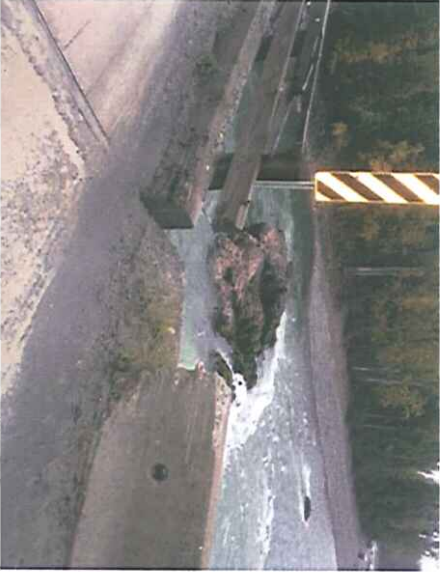


Figure 1-10: Gap at left end approach upstream barrier - note damaged handrail.

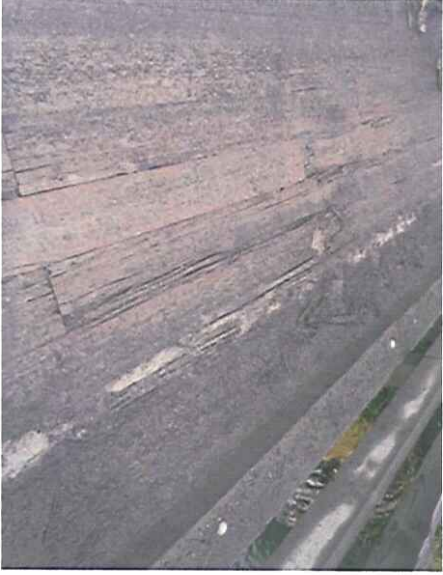


Figure 1-11: Typical wearing surface.

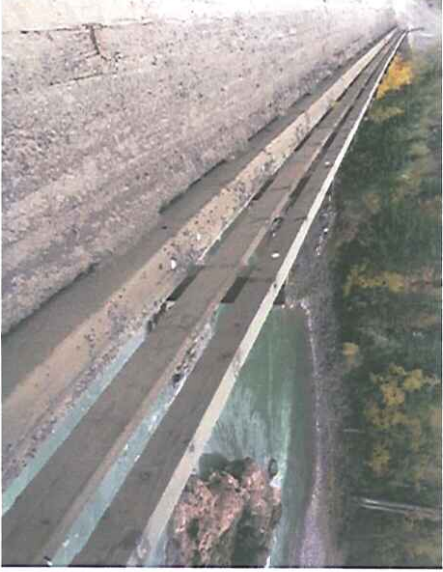


Figure 1-12: Upstream curb and hand rail.



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Figure 1-13: Downstream curb and hand rail.



Figure 1-14: Damaged upstream handrail and post near left end.



Figure 1-15: Damaged downstream handrail near left end.



Figure 1-16: Typical underside of deck.



Figure 1-17: Girder 1 upstream face.



Figure 1-18: Girder 1 u/s face - check along bottom flange near left abutment. See notes.

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Figure 1-19: Girder 2 downstream face.



Figure 1-20: Girder 3 upstream face.



Figure 1-21: Girder 4 downstream face.



Figure 1-22: Left end abutment.



Figure 1-23: Left end abutment downstream wingwall.



Figure 1-24: Left end abutment upstream wingwall - note concrete deterioration & water ingress.



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Figure 1-25: Left end abutment upstream wingwall.



Figure 1-26: Spall with exposed rebar at left end abutment upstream wingwall.



Figure 1-27: Right end abutment.



Figure 1-28: Front face of right end abutment. note delamination.



Figure 1-29: Right end abutment upstream wingwall - note concrete deterioration.