

Bridge No.	K424	Road Name	Placer Mountain FSR										Inspection Date	2014-08-11		
STA.	Forest District										Access Notes					
0.41 km	Kootenay															
Bridge Length	Stream Crossing										Inspected By					
54 m	Similkameen River										M. Hanson / D. Harrison					
UTM Zone	Easting										Northing					
10	678042										5451526					
No. Spans		Installation Date			Current Load Rating			Deck Width			Project No.			Anticipated Replacement		
2		1997			68 tonnes			4800 mm			2014 2725			2057		
Span / Length (m)	1	26.9	2	27.5	3		4		5		6		7			
Comments	Two span steel girder bridge with precast concrete deck panels.															
<p>Excellent: New or almost new condition and properly installed</p> <p>Good: Structurally sound, in good repair and have minimal wear</p> <p>Fair: Structurally sound, but show moderate wear or preliminary indications of rot or corrosion</p> <p>Poor: Structurally unsound, major items in need of repair or replacement, or bridge load rating should be reduced</p> <p>Abutment, spans, piers numbered from left bank, facing downstream / girders numbered from upstream to downstream.</p>																
Approaches																
Approach Road	Good															
Alignment	Fair			Horizontal curve at right approach.												
Visibility	Good															
Signage	Poor			Bridge ahead sign at right end approach is heavily weathered and faded.												
Delineators	Good			Narrow style delineators at all four corners.												
Fenders	Good			Concrete approach barriers at all four corners.												
Overall	Poor															
Deck																
Running Surface	Fair			<p>Moderate wear along concrete deck surface, likely a result of hauling activity (ie truck chains or snow plow). Debris accumulation along deck edge.</p> <p>Underside of deck is in good condition. Minor spall previously noted at left end downstream corner does not appear to have changed since 2011 inspection.</p>												
Deck Joints	Poor			<p>Pier 1 compression seal has failed.</p> <p>All grouted deck panel joints are in good condition.</p>												
Grout Pockets	Good															
Curb Rails and Risers	Poor			<p>Insect damage and severe checking noted throughout curbs and risers. Curbs and risers cored and sounded, decay noted in several locations.</p> <p>Minor impact damage at left end downstream curb.</p> <p>Failed riser at right end downstream curb.</p>												
Hardware	Good															
Overall	Poor															

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Superstructure - Span 1					
Girders	Fair	Measured web deflections with 1.22 metre horizontal straight edge at Diaphragm #3 (13.0 m from left abutment). Maximum deflection measured is 8 mm left of diaphragm and 5 mm right of diaphragm. Observed bridge with loaded chip truck hauling compost; minimal girder deflection observed.			
Diaphragms	Good				
Hardware	Good				
Overall	Fair				
Superstructure - Span 2					
Girders	Good	Observed bridge with loaded chip truck hauling compost; minimal girder deflection observed.			
Diaphragms	Good				
Hardware	Good				
Overall	Good				
Abutment - Left					
Bearings	Good	Rodent nesting debris around both bearings.			
Ballast Wall	Good				
Fill	Good				
Hardware	Good				
Piles and Posts	Unrated	Buried under fill.			
Riprap	Good				
Overall	Good				
Abutment - Right					
Bearings	Good	Rodent nesting debris around both bearings.			
Ballast Wall	Fair	Minor spalling along top of ballast wall from vehicle traffic.			
Fill	Good				
Hardware	Good				
Piles and Posts	Unrated	Buried under fill.			
Riprap	Good				
Overall	Fair				
Pier - 1					
Bearings	Good				
Caps	Fair	Debris accumulation on top of cap due to failed compression seal.			
Hardware	Good				
Piles/Posts	Good	Single log jam at base of upstream pile.			
Wall	Fair	Steel plate diaphragm does not extend to the mudline, providing a trap for floating debris.			
Overall	Fair				
Hazards					
High Water	NO				
Scour	NO				
Ice	NO				
Debris	NO				
Aggradation	NO				

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Channel					
Estimated Present Water Level Depth	2 m				
Estimated Present Water Level Width	2 m				
Estimated High Water Level Clearance	5 m				

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Repair Description and Cost Estimate					
No.	Description	Priority	Cost Estimate		
1	Replace all curb rails and risers	High	\$15,000.00		
2	Replace bridge ahead sign at right approach.	High	\$500.00		
3	Replace deck joint compression seal at Pier 1.	Medium	\$5,000.00		
4	Consider extending steel plate pier diaphragm to mudline during low flows.	Medium	\$20,000.00		
5	Remove rodent nests from abutments.	Low	\$500.00		
			\$41,000.00		
<p>High: Immediate, non-recurring repair to assure public safety</p> <p>Medium: Ongoing, regular maintenance items to protect capital investment</p> <p>Low: Minor maintenance items or improvements to extend service life</p> <p>The cost estimate for individual maintenance items reflects the cost of materials and labour for completing a task; it does not include any costs associated with mobilization, demobilization, delivery of materials, engineering or contract administration.</p>					
Monitoring Items					
No.	Description				
Comments				Seal	
<p>The bridge is generally in fair condition. In addition to minor maintenance, the rails and risers are in poor condition and require replacement within the next year.</p> <p>Since the scope of work did not include the completion of an underwater inspection of the bridge piers, we were unable to determine the condition of the river piers below the waterline. The Ministry should consider completing a bathymetric survey to confirm the condition of the river piers below the waterline and identify any possible scour around the base of the piers.</p> <p>The theoretical remaining service life of the bridge is 43 years. The anticipated replacement based on the current condition is > 10 years.</p>					

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Figure 2: Downstream elevation.



Figure 4: Looking downstream.



Figure 1: Upstream elevation.



Figure 3: Looking upstream.

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Figure 6: Right approach.



Figure 8: Typical approach flare - left upstream side shown.



Figure 5: Left approach.



Figure 7: Bridge ahead sign at right approach.

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Figure 10: Typical condition of downstream curb.



Figure 12: Damaged curb at left end downstream corner.



Figure 9: General deck condition - Note debris accumulation along deck edge and centre of deck - possible cause of noticeable wear.



Figure 11: Typical condition of upstream curb.

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Figure 14: Rot in upstream curb near right end.

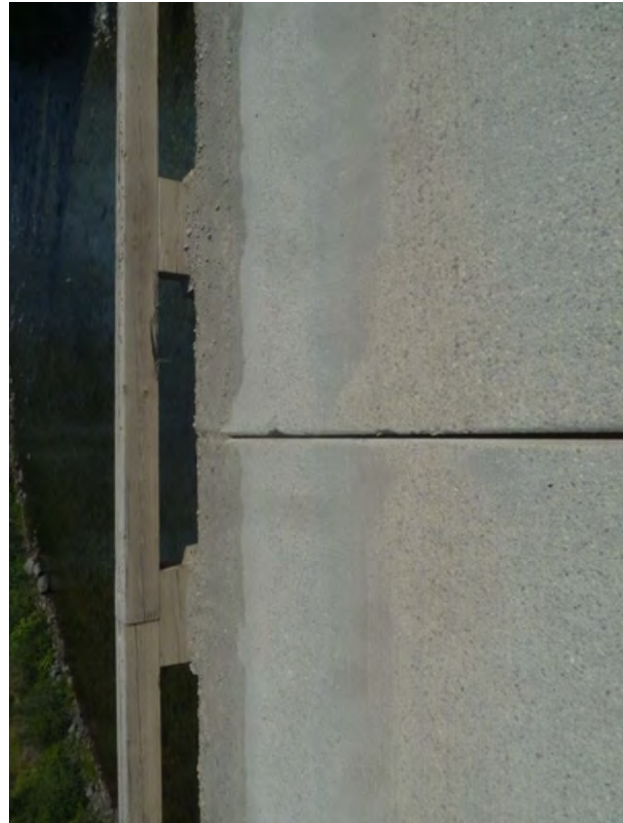


Figure 16: Pier 1 deck joint - Note missing compression seal.



Figure 13: Wide checking in upstream curb.



Figure 15: Failed curb riser at right end downstream.

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Figure 18: Typical underside of deck.



Figure 20: Left end upstream wingwall.



Figure 17: Typical grouted deck panel joint.



Figure 19: Left abutment.

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Figure 22: Deck panel at left end downstream - Note spalled concrete.



Figure 24: Right end downstream wingwall.



Figure 21: Left end downstream wingwall.



Figure 23: Right abutment

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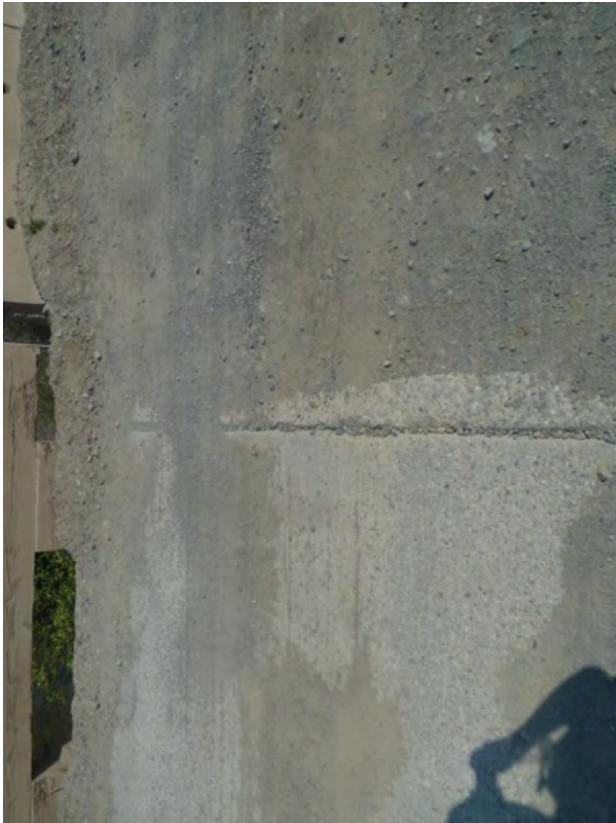


Figure 26: Top of right end ballast wall - Note wear along top edge of ballast wall.



Figure 28: Pier 1, right face



Figure 25: Right end upstream wingwall.



Figure 27: Pier 1, left face - Note debris at base of pier.

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Figure 30: Span 1 bearing at Pier 1



Figure 29: Typical abutment bearing, left end upstream shown.



Figure 31: Span 2 bearing at Pier 1