Level 2 Inspection - Concrete Deck

Bridge File Number	75946 -1 Bridge	Form Type	CDK
Year Built/Year Supstr	1968/1968	Lot No.	
		Inspector Name	Jason Saly
Bridge or Town Name	PEACE RIVER	Inspector Class	BR CLS A
Located Over	90 STREET IN PEACE RIVER;94 STREET IN PEACE RIVER;PEACE RIVER, 8.10, WATERCRS-ST	Assistant Name	
		Assistant Class	
Located On	2:62 C1 0.311	Inspection Date	12-Sep-2012
Water Body Cl./Year		Data Entry By	Jason Saly
Navigabil. Cl./Year		Data Entry Date	27-Feb-2013
Legal Land Location	SE SEC 31 TWP 83 RGE 21 W5M	Reviewer Name	Paul Carter
Longitude, Latitude	-117:18:16, 56:14:24	Review Date	28-Feb-2013
Road Authority	Alberta Transportation (AIT)	Dept. Reviewer Name	
Contract Main. Area	CMA04	Dept. Review Date	
Clear Roadway/Skew	8.5 /	Follow-Up By	
AADT/Year	16,890 / 2012 (A)	Visual Inspection?	Y
Road Classification	RAU-213.0-120	CSE Testing?	Y
Detour Length (km)	40	Chloride Testing?	N

Allowable Load (t):	Single		Semi		Train	---> On Critical Spans --->Critical Member
Design Loading:	HS20					---> Primary Span

(Primary Span : **SSA, Spans: 4,5,6,7, Lengths(m): 124.7-124.7-124.7-92.4**)

(Secondary Span : **RB, Spans: 1,2,3,8, Lengths(m): 19.8-28.6-29.2-29**)

(Total Length : **19.8-28.6-29.2-124.7-124.7-124.7-92.4-29 = 573.1**)

Concrete Deck Inspection

		Last	Now	Explanation of Condition
Wearing Surface				
Polymer? (Y/N)	Y			
ACP? (Y/N)	N			
Chip Seal Coat? (Y/N)	Y			

	Type	Year Installed	Avg. Total Thickness (mm)	Area (m^2)
Seal Coat	CONVENTIONAL CHIP SEAL COAT	2008		4871.4

Polymer Rating (% Area)

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	0	0	0	0	100

ACP Rating (% Area)

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	0	0	0	0	100

Chip Seal Coat Rating (% Area)

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	90	10	0	0	0

Polymer Total Debonded /Lost Area (m^2)		1500	
ACP Total Debonded /Lost Area (m^2)		X	
ACP Average Measured Depth (mm)		X	
ACP Crack Frequency (m/m^2)		X	
Chip Seal Coat Total Lost Area (m^2)		18	Random areas of lost seal coat. Some areas weraing smooth.

Concrete Overlay

Overlay? (Y/N)	Y

(Span Type : RB)

(Span Numbers : **1, 2, 3, 8**)

(Overlay type : **CONCRETE (HIGH DENSITY)**)

Concrete Deck Inspection

		Last	Now	Explanation of Condition
(Area(m²) : **906.1**)				
(Year Installed : **1982**)				
(Thickness(mm) : **50**)				
(Average Cylinder Strength(Mpa) :)				

Overlay Rating (% Area)

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	0	0	0	0	100

Covered by epoxy and a chip seal coat wearing surface.

Total Crack Length - Medium/Wide (m)		N	
Total Scaled Area - Light (m²)		N	
Total Scaled Area -Moderate/Heavy/Severe (m²)		N	
Debonded Area (m²)		18	
Spalled Area (m²)		N	
Patched Area (m²)		N	
Average Measured Cover Depth (mm)		110	
Standard Deviation of Measured Cover Depth (mm)		16	

(Span Type : SSA)

(Span Numbers : **4, 5, 6, 7**)

(Overlay type : **CONCRETE (HIGH DENSITY)**)

(Area(m²) : **3965.3**)

(Year Installed : **1982**)

(Thickness(mm) : **50**)

(Average Cylinder Strength(Mpa) :)

Overlay Rating (% Area)

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	0	0	0	0	100

Covered with epoxy and a chip seal coat wearing surface.

Total Crack Length - Medium/Wide (m)		N	
Total Scaled Area - Light (m²)		N	
Total Scaled Area -Moderate/Heavy/Severe (m²)		N	
Debonded Area (m²)		18	
Spalled Area (m²)		N	
Patched Area (m²)		N	
Average Measured Cover Depth (mm)		112	
Standard Deviation of Measured Cover Depth (mm)		10	

Deck

(Span Type : RB)

(Span Numbers : **1, 2, 3, 8**)

(Deck Type : **CONCRETE (CLASS C)**)

(Area(m²) : **906.1**)

(Year Constructed : **1968**)

(Year Widened :)

(Thickness(mm) : **150**)

(Average Cylinder Strength(MPa) :)

	Type	Size	Design Cover (mm)	Spacing (mm)
Long. Reinforcing	REINFORCING STEEL	10	40	450
Trans. Reinforcing	REINFORCING STEEL	15	40	125

Concrete Deck Inspection

	Last	Now	Explanation of Condition
Deck Top Rating (% Area)			

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	0	0	0	0	100

Total Crack Length - Medium/Wide (m)		N	
Total Scaled Area - Light (m²)		N	
Total Scaled Area - Moderate/Heavy/Severe (m²)		N	
Delaminated Area (m²)		N	
Spalled Area (m²)		N	
Patched Area (m²)		N	
Average Measured Cover Depth (mm)		N	
Standard Deviation of Measured Cover Depth (mm)		N	
Deck Underside Rating (% Area)			

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	100	0	0	0	0

Total Stained Area - Moderate (m²)		1	Transverse cracking in the deck underside. Plate below snow grate significantly corroded.
Total Stained Area - Heavy/Severe (m²)		0	
Total Crack Length - Medium/Wide (m)		75	
% of Medium/Wide Cracks Stained		35	

(Span Type : SSA)

(Span Numbers : **4, 5, 6, 7**)

(Deck Type : **CONCRETE (CLASS C)**)

(Area(m²) : **3965.3**)

(Year Constructed : **1968**)

(Year Widened :)

(Thickness(mm) : **150**)

(Average Cylinder Strength(MPa) :)

	Type	Size	Design Cover (mm)	Spacing (mm)
Long. Reinforcing	REINFORCING STEEL	10	40	450
Trans. Reinforcing	REINFORCING STEEL	15	40	125

Deck Top Rating (% Area)

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	0	0	0	0	100

Total Crack Length - Medium/Wide (m)		N	
Total Scaled Area - Light (m²)		N	
Total Scaled Area - Moderate/Heavy/Severe (m²)		N	
Delaminated Area (m²)		N	
Spalled Area (m²)		N	
Patched Area (m²)		N	
Average Measured Cover Depth (mm)		N	
Standard Deviation of Measured Cover Depth (mm)		N	
Deck Underside Rating (% Area)			

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	10	0	0	0	90

Could only inspect the underside from the banks.

Total Stained Area - Moderate (m²)		0	
Total Stained Area - Heavy/Severe (m²)		0	
Total Crack Length - Medium/Wide (m)		35	Transverse cracking, generally located along the underside of the sidewalk.
% of Medium/Wide Cracks Stained		95	

Edge Elements

Concrete Deck Inspection

		Last	Now	Explanation of Condition
Curbs? (Y/N)	N			
Parapets? (Y/N)	Y			
Medians? (Y/N)	N			
Sidewalks? (Y/N)	Y			

Parapets

Parapet Rating (% Length)

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	75	24	1	0	0

Total Crack Length - Medium/Wide (m)		1203	There is vertical cracking along the parapets. There are areas of light to heavy scalling. There are rondom spalls, some spalls have exposed rebar.
Total Scaled Length - Light (m)		139	
Total Scaled Length - Moderate/Heavy/Severe (m)		38	
Delaminated Length (m)		5	
Spalled Length (m)		7.2	
Patched Length (m)		0	
Average Measured Cover Depth (mm)		53	
Standard Deviation of Measured Cover Depth (mm)		12	

Sidewalks

(Type : **CONCRETE**)

(Total Length(m) : **573.1**)

(Height(mm) :)

(Width(mm) :)

(Average Cylinder Strength(MPa) :)

Reinforcement Type	Size	Design Cover (mm)	Spacing (mm)

Sidewalk Rating (% Length)

	9-7	6/5	4	3	2/1	N/X
Last						
Now	0	80	15	5	0	0

Total Crack Length - Medium/Wide (m)		726	There is transverse and rondom cracking along the outside edge of the sidewalk there are areas of light to heavy scaling along the sidewalk.
Total Scaled Area - Light (m^2)		125	
Total Scaled Area - Moderate/Heavy/Severe (m^2)		6	
Delaminated Area (m^2)		2	
Spalled Area (m^2)		1	
Patched Area (m^2)		82	
Average Measured Cover Depth (mm)		N	Not required to take cover measurements along the sidewalk.
Standard Deviation of Measured Cover Depth (mm)		N	

Deck Joints

(Type : **COMPRESSION SEAL (ACME SEALS)**)

(Number of Joints : **3**)

(Expansion / Fixed? : **FIXED**)

(Location : **A2, P4, P6**)

% Inspected		100	Could not determine pier joint leakage due to night time testing and height of bridge.
% Joints Leaks		N	
% Joint Length Leaks		N	
Superstructure Damage Rating		5	
Substructure Damage Rating		5	Abutments have been repaired. Piers are currently under repair.
Level 1 Joint Rating		5	

(Type : **FINGER PLATES**)

(Number of Joints : **3**)

(Expansion / Fixed? : **EXPANSION**)

(Location : **P3, P5, P7**)

Concrete Deck Inspection

	Last	Now	Explanation of Condition
% Inspected		100	
% Joints Leaks		N	Could not determine pier joint leakage due to night time testing and location of piers.
% Joint Length Leaks		N	
Superstructure Damage Rating		5	
Substructure Damage Rating		5	Pier repairs currently underway.
Level 1 Joint Rating		5	
(Type : **WATER STOP**)			
(Number of Joints : **1**)			
(Expansion / Fixed? : **FIXED**)			
(Location : **A1**)			
% Inspected		0	Covered by chipseal coat.
% Joints Leaks		0	
% Joint Length Leaks		0	
Superstructure Damage Rating		5	
Substructure Damage Rating		5	Abutment has been repaired.
Level 1 Joint Rating		N	

CSE Testing

Testing Date	14-Jun-2012	Previous Testing Date	17-Jul-2009
Weather Information			
Temperature (°C)	17		
Conditions	Clear		
Equipment Information			
Test Equipment Make and Model	Corexco CDL - 200 EA/512		
Electrical Ground Location and Type	1AB, second span from the west abutment		
Measurement Locations Information			
Origin for Data	south west		

	Number	Length of Each (m)	Length of Last (m)
X Increments (Length)	200	1.219	1.200
Y Increments (Width)	7	1.219	1.200

CSE Results	
Span Numbers	1,2,3,4,5,6,7,8
Span Type	RB, SSA
Wearing Surface	CONVENTIONAL CHIP SEAL COAT, CONCRETE (HIGH DENSITY)

Testing Year	% Deck Area 0 to -0.1 V	% Deck Area < -0.1 to -0.2 V	% Deck Area < -0.2 to -0.3 V	% Deck Area < -0.3 to -0.4 V	% Deck Area < -0.4 V	Avg. Deck Reading (V)	Stnd. Dev. Deck Reading	Avg. Curb Reading (V)	Stnd. Dev. Curb Reading
2012	0.0	6.0	28.9	47.9	17.2	-0.330	0.092	-0.515	0.083
2009	0.0	10.0	56.0	32.0	2.0	-0.274	-0.075	-0.494	-0.068
2005	0.0	4.0	41.0	49.0	6.0	-0.309	0.086	-0.473	0.080

CSE Prediction Model Optimum 5 year Rehab Start Year	2014
Comments	

Maintenance Recommendations						
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SEAL CURBS						
PATCH DECK						
SEAL DECK						
OVERLAY DECK						
REPAIR/REPLACE DECK JOINTS						
WASHING						
CRACK REPAIRS/TREATMENT						
PATCH CURBS/PARPETS						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (%)	**38.9**	**Sufficiency Rating (%)**	**35.1**	Est Repl Year	2043

Level 1 Insp Date	06-Dec-2011	Next Level 1 Insp Date	06-Sep-2013	Current Level 1 Insp Cycle (Default) (Months)	21
Special Comments for Next Insp	Observe deck underside for deterioration-span 1 and 8. Observe erosion at West river bank. Monitor concrete sidewalk deterioration.				

Snooper? (Y/N)	No	Lift? (Y/N)	No	Traffic Control? (Y/N)	Yes	Boat? (Y/N)	No	Ladder? (Y/N)	No
Other Special Requirements Comments	Converted from CDIS								

Previous Level 2 Inspector's Name	Jason Saly	Previous Level 2 Insp Date	17-Jul-2009
Next Level 2 Insp Date	12-Sep-2016	Discontinue Level 2 Insp? (Y/N)	No
Level 2 Insp Previously Completed	10	Level 2 Insp Cycle (Default) (Months)	48
Detailed Report/Diagram? (Y/N)	Yes		
Level 2 Insp Comments	damaged bridgerail along the south parapet on span 1		

Next Level 2 Inspection/Test	Concrete Deck Insp? (Y/N)	Yes	CSE Testing? (Y/N)	Yes	Chloride Testing? (Y/N)	No	
Department Reviewer Comments							