

BRIDGE MANAGEMENT INFORMATION SYSTEM

24 Sep 2015

s.15

Condition Inspection Report

Criteria: Structure No = 00596 - Include Inspection Condition Photos = N
 - Include Additional Blank Lines for Notes = N - Show Not Applicable Components = N

Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Detailed Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

RFI: 07-A-7-00007 - Rte 7 EB - Lougheed Highway - ON

Features Crossed: LOUGHEED/NICOMEN SLOUGH

Component Group/Component

E G F P V X N/A

HYDROTECHNICAL :

1.	Debris Risk	100					N
4.	Substructure Scour	100					N

SUBSTRUCTURE :

5.	Foundation Movement	100					N
6.	Abutments		100				N
7.	Wing/Retaining Walls		94	4	2		N
9.	Footings/Piling		75	23	1	1	N
11.	Bearings		50	40	10		N
12.	Caps	10	20	30	35	5	N
14.	Dolphins/Fenders		90	10			N

SUPERSTRUCTURE :

16.	Stringers			60	35	5	N
17.	Girders		75	10	10	5	N
19.	Bracing/Diaphragms		95	5			N
26.	Pins/Bolts/Rivets		90	5	5		N
27.	Camber/Sag	99	1				N
28.	Live Load Vibration	100					N
29.	Coating (Structure)		80	5	15		N

DECK :

30.	Sub Deck/Cross Ties		95	3	2		N
31.	Wearing Surface		93	7			N
32.	Deck Joints		20		80		N
33.	Curbs/Wheelguards		70	28	2		N
34.	Sidewalk(s)		70	28	2		N
35.	Railings/Parapets		95	3	2		N
37.	Drains/Pipes		100				N
38.	Coating (Railings)	95	4		1		N

APPROACHES :

39.	Signing/Lighting	100					N
40.	Roadway Approaches		70	25	5		N
41.	Roadway Flares			50	50		N

1st Abutment Position: W

Year Built: 1958 Estimated? ☐

Length (m): 148.400

Note:

Main Span Length: 19.787

Main Span Type: STRINGER

Spans: 16

Urgency: 5

BCI Rating: 2.16

Adjusted BCI Rating: 2.33

Inspector/Inspected By: J. DU

On 2010/05/14

Amendment/Partial Inspection?

Urgency Notes:

Urgency Rating Note: - Concrete bath tub girders - extensive heavy spalling / exposed main reinforcement with light to medium corrosion.
 - Steel caps -extensive heavy corrosion and some perforations.

Item Notes:

- 1 . Debris Risk - heavy debris at north side (downstream) of the bridge.
 - 2009: debris mostly removed, but a few trees remain
- 4 . Substructure Scour - fill slowly sloughing away from both abutments.
 - fill sloughing around and away from all wing walls.

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- ballast planks were rotten on north end.

East abutment (bent 14):

- 5 treated ballast planks in good condition.
- damp, leakage from deck.

7 . Wing/Retaining Walls**WEST ABUTMENT:**

- extension of ballast planks on south side.
- south wing wall pile has top rot.
- no wing wall on north side.

EAST ABUTMENT:

- extension of ballast planks.
- south wing wall pile has rot in top 0.5m.

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Item Notes:

9 . Footings/Piling

Snooper inspection May 14, 2010

most of previous rot piles were replaced with new piles clamped on sound bottom piles.
 A few short horizontal braces were replaced on each bent.

BENT #1 (West abutment) - OK.

BENT #2:

- piles #1,#3,#4,#13,#15,#16 top part of piles were replaced and clapped at bottom.

BENT #3 (18 piles):

- 7 center piles (#3, #5, #7, #9, #11, #13 & #15) are spliced in the top 1 m with flat bars.
- pile #1 - upper part has a thick shell.
- pile #11 - drilled E. face at 500mm above lower tie, OK.
- pile #2, #3, #12, #16 and #17 were spliced with a new pile respectively, clamped at top and splice at bottom.
- pile #13 top splice has a poor alignment.

BENT #4 (19 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #14 & #16) at tops.
- pile #3, a new pile was clamped at very bottom.
- pile #18 has a wide check full height in south east face.
- pile #19 has top rot.

BENT #5 (20 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #15 & #17) at tops.
- pile #2, #5, #6, #13 and #17 were replaced by new piles.
- pile #15, north face - 50mm shell then rot. Drilled at ~1.75 m. above lower horizontal bracing.
- pile #18, west face - drilled at 550mm under cap - OK.
- pile #19 - a wide check at top otherwise OK.

BENT #6 (20 piles):

- 8 piles (#3, #5, #7, #9, #15, #18, #19) have been spliced at top.
- pile #1 - a wide check on E. face.
- piles #9 & #10 - previously drilled in west face at about mid height.
- pile #15, east face - 65mm shell then rot. Drilled at 300mm under splice.
- pile #17 - OK. Drilled at 1.1 m. above the lower horizontal bracing.
- one of splice vertical bars was not anchored due to bolt missing.
- pile #18 - top rot.
- pile #19 - a wide check (full height) in the south west face.
- pile #20 - center rot in the top half of the pile with grass growing in the top.

BENT #7 (20 piles):

- 6 piles (#5, #7, #9, #11, #13 & #15) have been spliced.
- pile #3, #7, #9, #12, #14 and #19 were replaced.
- pile #20 - top rot (~25mm shell) with grass growing.

ANCHOR PIER #1 (16 piles):

- pile # 1 and #2 -replaced.
- pile #13 - sound soft in east side.
- pile #16 - sounded soft near top. Drilled at 600mm under cap - OK.

BENT #8 (19 piles):

- pile #3 has a wide check in the south east face of upper section.
- pile #14 - past inspection indicated that interior rot in east face at lower bracing. Drilled in NE face in this inspection, condition of pile seems to be OK.

BENT #9 (19 piles):

- pile #13 - a wide check in mid section.
- piles #17 & #18 - a wide check in east face.

BENT #10 (19 piles):

- piles #1 and #3 not supporting caps.
- pile #2 & #19 -replaced.
- pile #4, north face - drilled at ~550mm under cap, OK.
- pile #18 - a wide check in the south face near the top.

ANCHOR PIER #2:

- top rot in 1st batter pile at N end.
- 1st pile from N on W side has 1" shell with interior rot, 12" diameter.
- 2nd batter pile from N has 1.5" shell, interior rot at lower bracing, 14" diameter.

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9 . Footings/Piling

- 1st batter pile from S has interior rot at lower horizontal bracing, 12" diameter with 1.5" shell.
- 2nd pile from N on east side has 1.5" shell with interior rot at lower bracing, 13" diameter.
- bottom horizontal fence or braces were replaced while a few on upper part were replaced.

ANCHOR PIER #3:

- piles at west side #2,3,4,5,6,7 were replaced.

BENT #11(19 piles):

- pile #3, west face - 50mm shell then rot. Drilled west face at ~1.5 m. & 2 m. above lower horizontal bracing. A wide check near top of the pile.
- pile #18 and #19 were replaced.

Bent #12 (20 piles)

- pile #2 - interior rot.
- pile #19 - a wide check in the south face.

BENT #13 (19 piles):

- pile #7 has top rot.

BENT #14 (East abutment):

- 8 piles under cap plus 4 bracing piles at piles #2, #4, #6 & #8.
- a wide check in pile #8 south face.
- medium checking in piles. A wide split in front of pile #1 resulting from the embedding of the rail track spike to hold the steel cap.

11 . Bearings

- Thin plain elastomeric bearing pads were placed between bath tub girders and steel caps.
- pads were warped in areas.
- Lugs (for anchoring the girders) at ends of the girders are mostly with medium to heavy corrosion / some even popping out the surrounding concrete in the end diaphragms.
- West abutment with timber cap do not have bearing pads.
- East abutment drift pins at the ends of bath tub girders were exposed and have medium to heavy corrosion.

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Item Notes:

12 . Caps

- 255mm x 255mm steel caps were placed on east abutment and all piers & bents have medium to heavy (some with crevice) corrosion.

BENT #1 (West abutment):

- treated timber cap in good condition. Dirt against the ends of cap.

BENT #2:

- steel cap with light to medium corrosion tilts to the west by about 40mm and seems to be stabilized.

BENT #3:

- steel top cap - medium to heavy corrosion.
 - the first five cross cap have been replaced.
 - 9th cross cap - end rot started at west end.
 - 11th cross cap - a wide vertical split in west end.
 - west timber cap is twisting & sagging slightly and has a shake at south end with light rot.
 - east cap has a new cap on the south half.

BENT #4:

- steel top cap has medium to heavy corrosion especially on underside.
 - all previous rotten or deteriorate cross caps were replaced.

BENT #5:

- steel top cap has medium to heavy corrosion.
 - all previous rotten or deteriorate cross caps were replaced.
 - east cap has a wide vertical check (with grass growing in the check) in the south end.
 - west cap has a wide vertical checks in both north & south ends.

BENT #6:

- steel top cap has medium to heavy corrosion.
 - all previous rotten or deteriorate cross caps were replaced.
 - east cap - a wide check in top south end.
 - west cap - a check in bottom north end.

BENT #7:

- steel top cap has medium to heavy corrosion with some bent at cross cap #6.
 - a small perforation in underside of steel top cap at south of cross cap #6.
 - a large perforation in west side of steel top cap at north of cross cap #6.
 - 1st cross cap was replaced.
 - 2nd and 3rd cross caps - a wide vertical check at east end.
 - 4th cross cap has end rot in the west end (about 500mm in length).
 - 9th and 10th cross caps - end rot started at west end.
 - west cap at south end - a wide vertical split in the middle, about 600mm long end rot.

ANCHOR PIER #1:

- double steel caps with medium to heavy corrosion especially on underside.
 - rot in the 2nd cap spacer plank, west end.
 - 7th cross cap - wide checks in both ends.
 - cross cap above the outer north piles - west end seems to be rotten. Drilled & indicating soft & wet, rot in the west end 0.5m long.

BENT #8:

- steel top cap has medium to heavy corrosion.
 - grass growing at south end, between ends of bathtub stringers.
 - all previous rotten or deteriorate cross caps were replaced.

BENT #9:

- steel top cap has medium to heavy corrosion.
 - all previous rotten or deteriorate cross caps were replaced.
 - medium checks in both timber caps.

BENT #10:

- steel top cap has medium to heavy corrosion.
 - cross cap 3rd and 5th were replaced.
 - cross cap #4 has a wide check at west side.
 - west cap - a wide horizontal check in the north half (west face). 40mm gap between underside of cap & top of pile #1.
 - east cap - a wide check (with minor grass growing) at top at south end.

ANCHOR PIER #2:

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Item Notes:

12 . Caps

- the new upper cap in excellent condition.
- 2nd cross cap - end rot in east end.
- 3rd lower cross cap has rot in the west end and starting in the east end..
- lower cap in good condition.

ANCHOR PIER #3:

- the new cap system in excellent condition, timber.
- #1 cross cap - end rot in both ends.

BENT #11:

- steel top cap has medium to heavy corrosion.
- all previous rotten or deteriorate cross caps were replaced.
- a wide check in top of west lower cap with grass growing in the S. end.

BENT #12:

- steel cap has medium corrosion with a small perforation on east side under girder G&H.
- all previous rotten or deteriorate cross caps were replaced.
- east cap - medium checks between cross caps #4 & #5 and top check at south end..

BENT #13:

- steel top cap has medium to heavy corrosion.
- dual treated timber caps.
- all old cross caps were replaced.
- west cap was fully replaced.
- east cap has a wide check in the south end.

BENT #14 (East Abutment):

- Steel top cap has medium corrosion. 290mm x 370mm timber cap over piles #4 to #6 with checks.

14 . Dolphins/Fenders

- dolphins are in good condition except the one on the south side of pier 3, it has top rot, grass growing in south west pile & the metal covering on the top missed south half.

Anchor Pier #2:

- sheeting planks on east side of pier.
- new planks installed on lower half
- few planks have end rot.

Anchor Pier #3:

- sheeting planks on west side of pier.
- new planks installed on lower half
- a few planks have end rot.

16 . Stringers

7 steel stringers in span 12.

- Random light to medium corrosion on flanges and bottoms of webs.
- All stringers show medium to some heavy corrosion on the top flange. However, stringer G shows heavy corrosion at pier 3 (east end).
- Stringer 12B over pier 3 has heavy corrosion on the underside of bottom flange.

17 . Girders

Twelve 420mm x 850mm concrete bath tub girders per span except span 12 (steel stringers).

- General condition: horizontal cracks / vertical cracks(some with eff.) /delaminations/extensive spalls / exposed main reinforcements with light to heavy corrosion on bottoms of legs, more under wheel paths with some full span spalls (i.e. girders C, D, K & L) and at bearing locations.

- Span 3 (between bents #3 & #4) - bathtub girders A & B are sitting partially on bent #4 cap (~100mm).

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Item Notes:

- 19 . Bracing/Diaphragms
- BENT #2 - no pile bracing.
- BENT #3:
 - the diagonal brace on east side has end rot.
 - rot in east face of lower tie at pile #7.
- BENT #4 - the diagonal brace on west side has end rot.
- BENT #5:
 - west side - the lower pile bracing is rotten in the north side and the lower end came apart from the connection.
- BENT #8 - rot in the ends of cross bracing for the lower ties between piles #3 and #4.
- ANCHOR PIER #1:
 - east side, upper pile bracing at south side - rot in south end (up side).
- BENT #9:
 - west side - top end of the top pile bracing is rotten at north end.
- ANCHOR PIER #2:
 - west side - a wide split in diagonal brace and held only by one bolt.
- SPAN 12:
 - at piers 2 and 3 - heavy corrosion on steel channel bracing. Rust through holes in some.
 - at 2 intermediate diaphragms - spot corrosion.
- BENT #12 - bottom diagonal braces on east side have end rot.
- 29 . Coating (Structure)
- paint generally faded on steel stringers in span 12 with areas of rust and light corrosion.
- 30 . Sub Deck/Cross Ties
- precast concrete panels in span 12
- leakage between stringers under curb.
- Random delams in bays.
- Bay 1: a light spall / exposed rebar near pier 3
- Bay 2: a large spall / exposed rebar near pier 3
- Bay 4: a medium spall/exposed medium corroded rebar over pier 2 and near pier 3
- Bay 6: a large spall / exposed rebar near pier 3.

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Item Notes:

31 . Wearing Surface

- concrete overlay with light scaling.
- medium transverse cracks in main span.

Span 1&2 - good condition

Span 3 - a fine longitudinal crack on W/B middle and south wheel path.

Span 4 - a fine longitudinal crack on W/B south wheel path.

Span 5-9 - good condition

Span 10 - a fine longitudinal crack on W/B both wheel paths.

Span 11 - 10mm higher than span 12.

- a fine longitudinal crack on W/B south wheel path.

Span 12 - uneven surface between span 12 and 13. (E/B span 12 5mm higher, and W/B span 13 5-10mm higher)

- several medium transverse cracks across the deck at space of 2m.

Span 13 - a fine longitudinal crack on W/B south wheel path.

Spans 14 - a fine longitudinal crack on W/B south wheel path.

Span 15 - a full span long longitudinal fine crack on the middle of W/B.

Span 16 - several light spalls in the north wheel path of the east bound lane.

32 . Deck Joints

Bent #6 - 57mm gap compression seal - random separation from armour. Completely filled with dirt.

Bent #7 - a narrow compression seal with random broken in the middle.

Anchor pier #1 - a narrow compression seal has random short cracks and was pulled away from armouring in sections.

Bent #9 - 57mm gap compression seal - random separation from armour especially on E/B. Completely filled with dirt.

Bent #11 - 53mm gap compression seal - random separation from armour.

Construction joints at remaining piers and abutments should be sealed (for record, gap measured at bent #13 as follows: top of sidewalk curb - 40mm, W/B at shoulder line - 12mm, at yellow center line - 12mm, E/B at shoulder line - 15mm).

33 . Curbs/Wheelguards

- 220mm wide x 275mm high curb on roadway.
- general wear. Areas of light plow damage.
- small spalls / exposed rebars in random areas.

Span 16 - south curb at bent #13 - a medium spall in back face.

34 . Sidewalk(s)

Sidewalk width - 1550mm.

- asphalt overlay, light to medium scaling.
- wide gaps between spans over the bents (up to 100mm at bents #3 & #4, about 50 to 70mm at bent #10 with full of grass), random asphalt filler gone & grass growing in the gap.

- random wide longitudinal (e.g. spans 11 & 14) & transverse cracks.

Sidewalk approach at west end - settlement of about 40 to 60mm with grass growing along the deck end.

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Item Notes:

- 35 . Railings/Parapets
- 900mm high (above the concrete curb) 2 rail timber railing.
 - 140mm x 140mm posts with 2 m. post spacing. Railing size - 190mm x 65mm.
 - areas of rot in rails - north side upper & lower railing in span 12 near mid span, north side top rail at east end and lower rail near mid span in span 13.
 - 1st post in span 15 (north side) at bent 12 - rot at curb level.
- 2009
- 2 posts were replaced on span 12, northside
 - top and bottom rails were replaced at east abutment, north side
- 37 . Drains/Pipes
- all drains clear.
- 38 . Coating (Railings)
- paint coating quite new.
- 39 . Signing/Lighting
- W54's at all four corners.
- 40 . Roadway Approaches
- WEST APPROACH:
- gap of about 30~50mm along the ballast wall.
- East bound:
- medium alligator cracks on both wheel pathes.
 - slight bump at deck end.
- West bound:
- a few medium transverse cracks on the north wheel path starting about 2 m. from deck end.
 - about 10 to 20mm settlement on the north wheel paths and 20~30mm on the south wheel path.
 - wide alligator cracks on south wheel path starting about 2m from deck end.
- EAST APPROACH:
- about 1.2 m. long asphalt patch. 5~10mm settlement on E/B .
 - short transverse cracks on the W/B south wheel path at the 1.2m away from deck end.
- 41 . Roadway Flares
- West approach:
- south side - 4 units of 2.5 m. long 700mm no post plus a transition & a bull nose at west end.
 - north side - none.
- East approach:
- south side - none.
 - north side - a gap of about 700mm (stairs down to the bank) followed by 2 section of 450mm high no post plus a bull nose at the east end.

Inspection Notes:**Drainage Area Description**

BACKWATER SLOUGH SLOW MOVING FRESH WATER.

Rehab Work Notes

In 2009 a major rehab work was done for replacing rotted piles, timber caps and cross caps.

BLAST AND PAINT ALL STEEL CAPS BEFORE LOSS OF SECTION IS TOO EXTREME. - REHAB ALL STRINGERS THAT HAVE DETERIOATED.

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May 14, 2010

1. Debris - clear debris.
2. Banks - trim tree at north west corner.
6. Wing Walls - replace rotten piles.
7. Piling - replace / rehab few rotten piles.
9. Bearings: Reinforcing the lugs and draft pin with heavy corroded.
10. Caps:
 - replace corroded steel caps as needed.
 - remove dirt that against the ends of cap at west abutment.
14. Girders - need engineer's review before making the repair.
16. Bracing - replace split and rotten braces.
26. Coating (Structure) - sandblast and paint steel stringers.
27. Sub Deck - clean and patch spalled areas in span 12.
28. Wearing Surface - seal cracks.
29. Deck Joints
 - repair thin compression seal at anchor pier #1 and bent 7
 - seal construction joints with flexible sealant.
31. Sidewalk - fill wide gaps. Seal cracks.
 - 2009: wide gaps filled with foam
32. Railings - replace broken and rotting rails and post.
37. Approaches - seal cracks. Fix up approaches asphalt to level with bridge deck.
38. Flares - consider installing proper flares at all four corners.

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41. Roadway Flares			50	50			N

1st Abutment Position: W

Year Built: 1958 Estimated? ☐

Length (m): 148.400

Note:

Main Span Length: 19.787

Main Span Type: STRINGER

Spans: 16

Urgency: 5

BCI Rating: 2.16

Adjusted BCI Rating: 2.33

Inspector/Inspected By: Doug Wilson

On 2011/10/18

Amendment/Partial Inspection?

Urgency Notes:

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Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

6 . Abutments

First abutment - WEST (bent 1).

West abutment (bent 1):

- ballast planks were rotten on north end.

East abutment (bent 14):

- 5 treated ballast planks in good condition.

- damp, leakage from deck.

7 . Wing/Retaining Walls

WEST ABUTMENT:

- extension of ballast planks on south side.

- south wing wall pile has top rot.

- no wing wall on north side.

EAST ABUTMENT:

- extension of ballast planks.

- south wing wall pile has rot in top 0.5m.

BRIDGE MANAGEMENT INFORMATION SYSTEM

24 Sep 2015

s.15

Condition Inspection Report

Criteria: Structure No = 00596 - Include Inspection Condition Photos = N
 - Include Additional Blank Lines for Notes = N - Show Not Applicable Components = N

Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Routine Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

9 . Footings/Piling

Snooper inspection May 14, 2010

most of previous rot piles were replaced with new piles clamped on sound bottom piles.
 A few short horizontal braces were replaced on each bent.

BENT #1 (West abutment) - OK.

BENT #2:

- piles #1,#3,#4,#13,#15,#16 top part of piles were replaced and clapped at bottom.

BENT #3 (18 piles):

- 7 center piles (#3, #5, #7, #9, #11, #13 & #15) are spliced in the top 1 m with flat bars.
- pile #1 - upper part has a thick shell.
- pile #11 - drilled E. face at 500mm above lower tie, OK.
- pile #2, #3, #12, #16 and #17 were spliced with a new pile respectively, clamped at top and splice at bottom.
- pile #13 top splice has a poor alignment.

BENT #4 (19 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #14 & #16) at tops.
- pile #3, a new pile was clamped at very bottom.
- pile #18 has a wide check full height in south east face.
- pile #19 has top rot.

BENT #5 (20 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #15 & #17) at tops.
- pile #2, #5, #6, #13 and #17 were replaced by new piles.
- pile #15, north face - 50mm shell then rot. Drilled at ~1.75 m. above lower horizontal bracing.
- pile #18, west face - drilled at 550mm under cap - OK.
- pile #19 - a wide check at top otherwise OK.

BENT #6 (20 piles):

- 8 piles (#3, #5, #7, #9, #15, #18, #19) have been spliced at top.
- pile #1 - a wide check on E. face.
- piles #9 & #10 - previously drilled in west face at about mid height.
- pile #15, east face - 65mm shell then rot. Drilled at 300mm under splice.
- pile #17 - OK. Drilled at 1.1 m. above the lower horizontal bracing.
 - one of splice vertical bars was not anchored due to bolt missing.
- pile #18 - top rot.
- pile #19 - a wide check (full height) in the south west face.
- pile #20 - center rot in the top half of the pile with grass growing in the top.

BENT #7 (20 piles):

- 6 piles (#5, #7, #9, #11, #13 & #15) have been spliced.
- pile #3, #7, #9, #12, #14 and #19 were replaced.
- pile #20 - top rot (~25mm shell) with grass growing.

ANCHOR PIER #1 (16 piles):

- pile # 1 and #2 - replaced.
- pile #13 - sound soft in east side.
- pile #16 - sounded soft near top. Drilled at 600mm under cap - OK.

BENT #8 (19 piles):

- pile #3 has a wide check in the south east face of upper section.
- pile #14 - past inspection indicated that interior rot in east face at lower bracing. Drilled in NE face in this inspection, condition of pile seems to be OK.

BENT #9 (19 piles):

- pile #13 - a wide check in mid section.
- piles #17 & #18 - a wide check in east face.

BENT #10 (19 piles):

- piles #1 and #3 not supporting caps.
- pile #2 & #19 - replaced.
- pile #4, north face - drilled at ~550mm under cap, OK.
- pile #18 - a wide check in the south face near the top.

ANCHOR PIER #2:

- top rot in 1st batter pile at N end.
- 1st pile from N on W side has 1" shell with interior rot, 12" diameter.
- 2nd batter pile from N has 1.5" shell, interior rot at lower bracing, 14" diameter.

BRIDGE MANAGEMENT INFORMATION SYSTEM

24 Sep 2015

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Structure No: 00596 - DEWDNEY

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District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

9 . Footings/Piling

- 1st batter pile from S has interior rot at lower horizontal bracing, 12" diameter with 1.5" shell.
- 2nd pile from N on east side has 1.5" shell with interior rot at lower bracing, 13" diameter.
- bottom horizontal fence or braces were replaced while a few on upper part were replaced.

ANCHOR PIER #3:

- piles at west side #2,3,4,5,6,7 were replaced.

BENT #11(19 piles):

- pile #3, west face - 50mm shell then rot. Drilled west face at ~1.5 m. & 2 m. above lower horizontal bracing. A wide check near top of the pile.
- pile #18 and #19 were replaced.

Bent #12 (20 piles)

- pile #2 - interior rot.
- pile #19 - a wide check in the south face.

BENT #13 (19 piles):

- pile #7 has top rot.

BENT #14 (East abutment):

- 8 piles under cap plus 4 bracing piles at piles #2, #4, #6 & #8.
- a wide check in pile #8 south face.
- medium checking in piles. A wide split in front of pile #1 resulting from the embedding of the rail track spike to hold the steel cap.

11 . Bearings

- Thin plain elastomeric bearing pads were placed between bath tub girders and steel caps.
- pads were warped in areas.
- Lugs (for anchoring the girders) at ends of the girders are mostly with medium to heavy corrosion / some even popping out the surrounding concrete in the end diaphragms.
- West abutment with timber cap do not have bearing pads.
- East abutment drift pins at the ends of bath tub girders were exposed and have medium to heavy corrosion.

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Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Routine Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

12 . Caps

- 255mm x 255mm steel caps were placed on east abutment and all piers & bents have medium to heavy (some with crevice) corrosion.

BENT #1 (West abutment):

- treated timber cap in good condition. Dirt against the ends of cap.

BENT #2:

- steel cap with light to medium corrosion tilts to the west by about 40mm and seems to be stabilized.

BENT #3:

- steel top cap - medium to heavy corrosion.
- the first five cross cap have been replaced.
- 9th cross cap - end rot started at west end.
- 11th cross cap - a wide vertical split in west end.
- west timber cap is twisting & sagging slightly and has a shake at south end with light rot.
- east cap has a new cap on the south half.

BENT #4:

- steel top cap has medium to heavy corrosion especially on underside.
- all previous rotten or deteriorate cross caps were replaced.

BENT #5:

- steel top cap has medium to heavy corrosion.
- all previous rotten or deteriorate cross caps were replaced.
- east cap has a wide vertical check (with grass growing in the check) in the south end.
- west cap has a wide vertical checks in both north & south ends.

BENT #6:

- steel top cap has medium to heavy corrosion.
- all previous rotten or deteriorate cross caps were replaced.
- east cap - a wide check in top south end.
- west cap - a check in bottom north end.

BENT #7:

- steel top cap has medium to heavy corrosion with some bent at cross cap #6.
- a small perforation in underside of steel top cap at south of cross cap #6.
- a large perforation in west side of steel top cap at north of cross cap #6.
- 1st cross cap was replaced.
- 2nd and 3rd cross caps - a wide vertical check at east end.
- 4th cross cap has end rot in the west end (about 500mm in length).
- 9th and 10th cross caps - end rot started at west end.
- west cap at south end - a wide vertical split in the middle, about 600mm long end rot.

ANCHOR PIER #1:

- double steel caps with medium to heavy corrosion especially on underside.
- rot in the 2nd cap spacer plank, west end.
- 7th cross cap - wide checks in both ends.
- cross cap above the outer north piles - west end seems to be rotten. Drilled & indicating soft & wet, rot in the west end 0.5m long.

BENT #8:

- steel top cap has medium to heavy corrosion.
- grass growing at south end, between ends of bathtub stringers.
- all previous rotten or deteriorate cross caps were replaced.

BENT #9:

- steel top cap has medium to heavy corrosion.
- all previous rotten or deteriorate cross caps were replaced.
- medium checks in both timber caps.

BENT #10:

- steel top cap has medium to heavy corrosion.
- cross cap 3rd and 5th were replaced.
- cross cap #4 has a wide check at west side.
- west cap - a wide horizontal check in the north half (west face). 40mm gap between underside of cap & top of pile #1.
- east cap - a wide check (with minor grass growing) at top at south end.

ANCHOR PIER #2:

BRIDGE MANAGEMENT INFORMATION SYSTEM

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Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Routine Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

12 . Caps

- the new upper cap in excellent condition.
- 2nd cross cap - end rot in east end.
- 3rd lower cross cap has rot in the west end and starting in the east end..
- lower cap in good condition.

ANCHOR PIER #3:

- the new cap system in excellent condition, timber.
- #1 cross cap - end rot in both ends.

BENT #11:

- steel top cap has medium to heavy corrosion.
- all previous rotten or deteriorate cross caps were replaced.
- a wide check in top of west lower cap with grass growing in the S. end.

BENT #12:

- steel cap has medium corrosion with a small perforation on east side under girder G&H.
- all previous rotten or deteriorate cross caps were replaced.
- east cap - medium checks between cross caps #4 & #5 and top check at south end..

BENT #13:

- steel top cap has medium to heavy corrosion.
- dual treated timber caps.
- all old cross caps were replaced.
- west cap was fully replaced.
- east cap has a wide check in the south end.

BENT #14 (East Abutment):

- Steel top cap has medium corrosion. 290mm x 370mm timber cap over piles #4 to #6 with checks.

14 . Dolphins/Fenders

- dolphins are in good condition except the one on the south side of pier 3, it has top rot, grass growing in south west pile & the metal covering on the top missed south half.

Anchor Pier #2:

- sheeting planks on east side of pier.
- new planks installed on lower half
- few planks have end rot.

Anchor Pier #3:

- sheeting planks on west side of pier.
- new planks installed on lower half
- a few planks have end rot.

16 . Stringers

7 steel stringers in span 12.

- Random light to medium corrosion on flanges and bottoms of webs.
- All stringers show medium to some heavy corrosion on the top flange. However, stringer G shows heavy corrosion at pier 3 (east end).
- Stringer 12B over pier 3 has heavy corrosion on the underside of bottom flange.

17 . Girders

Twelve 420mm x 850mm concrete bath tub girders per span except span 12 (steel stringers).

- General condition: horizontal cracks / vertical cracks(some with eff.) /delaminations/extensive spalls / exposed main reinforcements with light to heavy corrosion on bottoms of legs, more under wheel paths with some full span spalls (i.e. girders C, D, K & L) and at bearing locations.

- Span 3 (between bents #3 & #4) - bathtub girders A & B are sitting partially on bent #4 cap (~100mm).

Condition Inspection Report

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Contract Area: 7 - Fraser Valley CA

Item Notes:

- 19 . Bracing/Diaphragms
- BENT #2 - no pile bracing.
- BENT #3:
 - the diagonal brace on east side has end rot.
 - rot in east face of lower tie at pile #7.
- BENT #4 - the diagonal brace on west side has end rot.
- BENT #5:
 - west side - the lower pile bracing is rotten in the north side and the lower end came apart from the connection.
- BENT #8 - rot in the ends of cross bracing for the lower ties between piles #3 and #4.
- ANCHOR PIER #1:
 - east side, upper pile bracing at south side - rot in south end (up side).
- BENT #9:
 - west side - top end of the top pile bracing is rotten at north end.
- ANCHOR PIER #2:
 - west side - a wide split in diagonal brace and held only by one bolt.
- SPAN 12:
 - at piers 2 and 3 - heavy corrosion on steel channel bracing. Rust through holes in some.
 - at 2 intermediate diaphragms - spot corrosion.
- BENT #12 - bottom diagonal braces on east side have end rot.
- 29 . Coating (Structure)
- paint generally faded on steel stringers in span 12 with areas of rust and light corrosion.
- 30 . Sub Deck/Cross Ties
- precast concrete panels in span 12
- leakage between stringers under curb.
- Random delams in bays.
- Bay 1: a light spall / exposed rebar near pier 3
- Bay 2: a large spall / exposed rebar near pier 3
- Bay4: a medium spall/exposed medium corroded rebar over pier 2 and near pier 3
- Bay 6: a large spall / exposed rebar near pier 3.

BRIDGE MANAGEMENT INFORMATION SYSTEM

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Inspection Type: Routine Condition

Region: 1 - South Coast Region

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Contract Area: 7 - Fraser Valley CA

Item Notes:

31 . Wearing Surface

- concrete overlay with light scaling.
- medium transverse cracks in main span.

Span 1&2 - good condition

Span 3 - a fine longitudinal crack on W/B middle and south wheel path.

Span 4 - a fine longitudinal crack on W/B south wheel path.

Span 5-9 - good condition

Span 10 - a fine longitudinal crack on W/B both wheel paths.

Span 11 - 10mm higher than span 12.

- a fine longitudinal crack on W/B south wheel path.

Span 12 - uneven surface between span 12 and 13. (E/B span 12 5mm higher, and W/B span 13 5-10mm higher)

- several medium transverse cracks across the deck at space of 2m.

Span 13 - a fine longitudinal crack on W/B south wheel path.

Spans 14 - a fine longitudinal crack on W/B south wheel path.

Span 15 - a full span long longitudinal fine crack on the middle of W/B.

Span 16 - several light spalls in the north wheel path of the east bound lane.

32 . Deck Joints

Bent #6 - 57mm gap compression seal - random separation from armour. Completely filled with dirt.

Bent #7 - a narrow compression seal with random broken in the middle.

Anchor pier #1 - a narrow compression seal has random short cracks and was pulled away from armouring in sections.

Bent #9 - 57mm gap compression seal - random separation from armour especially on E/B. Completely filled with dirt.

Bent #11 - 53mm gap compression seal - random separation from armour.

Construction joints at remaining piers and abutments should be sealed (for record, gap measured at bent #13 as follows: top of sidewalk curb - 40mm, W/B at shoulder line - 12mm, at yellow center line - 12mm, E/B at shoulder line - 15mm).

33 . Curbs/Wheelguards

- 220mm wide x 275mm high curb on roadway.
- general wear. Areas of light plow damage.
- small spalls / exposed rebars in random areas.

Span 16 - south curb at bent #13 - a medium spall in back face.

34 . Sidewalk(s)

Sidewalk width - 1550mm.

- asphalt overlay, light to medium scaling.
- wide gaps between spans over the bents (up to 100mm at bents #3 & #4, about 50 to 70mm at bent #10 with full of grass), random asphalt filler gone & grass growing in the gap.

- random wide longitudinal (e.g. spans 11 & 14) & transverse cracks.

Sidewalk approach at west end - settlement of about 40 to 60mm with grass growing along the deck end.

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Contract Area: 7 - Fraser Valley CA

Item Notes:

- 35 . Railings/Parapets
- 900mm high (above the concrete curb) 2 rail timber railing.
 - 140mm x 140mm posts with 2 m. post spacing. Railing size - 190mm x 65mm.
 - areas of rot in rails - north side upper & lower railing in span 12 near mid span, north side top rail at east end and lower rail near mid span in span 13.
 - 1st post in span 15 (north side) at bent 12 - rot at curb level.
- 2009
- 2 posts were replaced on span 12, northside
 - top and bottom rails were replaced at east abutment, north side
- 37 . Drains/Pipes
- all drains clear.
- 38 . Coating (Railings)
- paint coating quite new.
- 39 . Signing/Lighting
- W54's at all four corners.
- 40 . Roadway Approaches
- WEST APPROACH:
- gap of about 30~50mm along the ballast wall.
- East bound:
- medium alligator cracks on both wheel pathes.
 - slight bump at deck end.
- West bound:
- a few medium transverse cracks on the north wheel path starting about 2 m. from deck end.
 - about 10 to 20mm settlement on the north wheel paths and 20~30mm on the south wheel path.
 - wide alligator cracks on south wheel path starting about 2m from deck end.
- EAST APPROACH:
- about 1.2 m. long asphalt patch. 5~10mm settlement on E/B .
 - short transverse cracks on the W/B south wheel path at the 1.2m away from deck end.
- 41 . Roadway Flares
- West approach:
- south side - 4 units of 2.5 m. long 700mm no post plus a transition & a bull nose at west end.
 - north side - none.
- East approach:
- south side - none.
 - north side - a gap of about 700mm (stairs down to the bank) followed by 2 section of 450mm high no post plus a bull nose at the east end.

Inspection Notes:**Drainage Area Description**

BACKWATER SLOUGH SLOW MOVING FRESH WATER.

Rehab Work Notes

In 2009 a major rehab work was done for replacing rotted piles, timber caps and cross caps.

BLAST AND PAINT ALL STEEL CAPS BEFORE LOSS OF SECTION IS TOO EXTREME. - REHAB ALL STRINGERS THAT HAVE DETERIOATED.

**BRITISH COLUMBIA MINISTRY OF TRANSPORTATION
BRIDGE MANAGEMENT INFORMATION SYSTEM
Condition Inspection Report**

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District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Inspection Notes:

Maintenance Work Notes

Oct.18, 2011

1. Debris - clear debris.
2. Banks - trim tree at north west corner.
6. Wing Walls - replace rotten piles.
7. Piling - replace / rehab few rotten piles.
9. Bearings: Reinforcing the lugs and draft pin with heavy corroded.
10. Caps:
 - replace corroded steel caps as needed.
 - remove dirt that against the ends of cap at west abutment.
14. Girders - need engineer's review before making the repair.
16. Bracing - replace split and rotten braces.
26. Coating (Structure) - sandblast and paint steel stringers.
27. Sub Deck - clean and patch spalled areas in span 12.
28. Wearing Surface - seal cracks.
29. Deck Joints
 - repair thin compression seal at anchor pier #1 and bent 7
 - seal construction joints with flexible sealant.
31. Sidewalk - fill wide gaps. Seal cracks.
 - 2009: wide gaps filled with foam
32. Railings - replace broken and rotting rails and post.
37. Approaches - seal cracks. Fix up approaches asphalt to level with bridge deck.
38. Flares - consider installing proper flares at all four corners.

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Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Detailed Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

RFI: 07-A-7-00007 - Rte 7 EB - Lougheed Highway - ON

Features Crossed: LOUGHEED/NICOMEN SLOUGH

Component Group/Component		E	G	F	P	V	X	N/A
HYDROTECHNICAL :								
1.	Debris Risk	100						N
2.	Channel	100						N
3.	Erosion Protection	100						N
4.	Substructure Scour	100						N
SUBSTRUCTURE :								
5.	Foundation Movement	100						N
6.	Abutments		100					N
7.	Wing/Retaining Walls		94	4	2			N
8.	Embankment		100					N
9.	Footings/Piling		75	23	1	1		N
11.	Bearings		50	40	10			N
12.	Caps	10	20	30	35	5		N
14.	Dolphins/Fenders		90	10				N
SUPERSTRUCTURE :								
16.	Stringers			60	35	5		N
17.	Girders		75	10	10	5		N
19.	Bracing/Diaphragms		95	5				N
26.	Pins/Bolts/Rivets		90	5	5			N
27.	Camber/Sag	99	1					N
28.	Live Load Vibration	100						N
29.	Coating (Structure)		80	5	15			N
DECK :								
30.	Sub Deck/Cross Ties		95	3	2			N
31.	Wearing Surface		93	7				N
32.	Deck Joints		20		80			N
33.	Curbs/Wheelguards		70	28	2			N
34.	Sidewalk(s)		70	28	2			N
35.	Railings/Parapets		95	3	2			N
37.	Drains/Pipes		100					N
38.	Coating (Railings)	95	4	1				N
APPROACHES :								
39.	Signing/Lighting		75		25			N
40.	Roadway Approaches	50	20	25	5			N
41.	Roadway Flares			75	25			N

1st Abutment Position: W

Year Built: 1958 Estimated? ☐

Length (m): 148.400

Note:

Main Span Length: 19.787

Main Span Type: STRINGER

Spans: 16

Urgency: 5

BCI Rating: 2.16

Adjusted BCI Rating: 2.33

Inspector/Inspected By: KENT HODGSON

On 2012/04/17

Amendment/Partial Inspection?

Urgency Notes:

Urgency Rating Note: - Concrete bath tub girders - extensive heavy spalling / exposed main reinforcement with light to medium corrosion.
 - Steel caps -extensive heavy corrosion and some perforations.

Item Notes:

- 1 . Debris Risk - heavy debris at north side (downstream) of the bridge.
 - 2009: debris mostly removed, but a few trees remain
- 4 . Substructure Scour - fill slowly sloughing away from both abutments.
 - fill sloughing around and away from all wing walls.

Condition Inspection Report

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Structure No: 00596 - DEWDNEY**Status:** Open/In Use**Inspection Type:** Detailed Condition**Region:** 1 - South Coast Region**District:** 1 - Lower Mainland District**Contract Area:** 7 - Fraser Valley CAItem Notes:

6 . Abutments

First abutment - WEST (bent 1).

West abutment (bent 1):

- ballast planks were rotten on north end.

East abutment (bent 14):

- 5 treated ballast planks in good condition.

- damp, leakage from deck.

7 . Wing/Retaining Walls

WEST ABUTMENT:

- extension of ballast planks on south side.

- south wing wall pile has top rot.

- no wing wall on north side.

EAST ABUTMENT:

- extension of ballast planks.

- south wing wall pile has rot in top 0.5m.

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Inspection Type: Detailed Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

9 . Footings/Piling

Snooper inspection April 17, 2012

most of previous rot piles were replaced with new piles clamped on sound bottom piles.
 A few short horizontal braces were replaced on each bent.

BENT #1 (West abutment)**BENT #2:**

- piles #1,#3,#4,#13,#15,#16 top part of piles were replaced and clapped at bottom.

BENT #3 (18 piles):

- 7 center piles (#3, #5, #7, #9, #11, #13 & #15) are spliced in the top 1 m with flat bars.
- pile #1 - upper part has a thick shell.
- pile #11 - drilled E. face at 500mm above lower tie, OK.
- pile #2, #3, #12, #16 and #17 were spliced with a new pile respectively, clamped at top and splice at bottom.
- pile #13 top splice has a poor alignment.

BENT #4 (19 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #14 & #16) at tops.
- pile #3, a new pile was clamped at very bottom.
- pile #18 has a wide check full height in south east face.
- pile #19 has top rot.

BENT #5 (20 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #15 & #17) at tops.
- pile #2, #5, #6, #13 and #17 were replaced by new piles.
- pile #15, north face - 50mm shell then rot. Drilled at ~1.75 m. above lower horizontal bracing.
- pile #18, west face - drilled at 550mm under cap - OK.
- pile #19 - a wide check at top otherwise OK.

BENT #6 (20 piles):

- 8 piles (#3, #5, #7, #9, #15, #18, #19) have been spliced at top.
- pile #1 - a wide check on E. face.
- piles #9 & #10 - previously drilled in west face at about mid height.
- pile #15, east face - 65mm shell then rot. Drilled at 300mm under splice.
- pile #17 - OK. Drilled at 1.1 m. above the lower horizontal bracing.
 - one of splice vertical bars was not anchored due to bolt missing.
- pile #18 - top rot.
- pile #19 - a wide check (full height) in the south west face.
- pile #20 - center rot in the top half of the pile with grass growing in the top.

BENT #7 (20 piles):

- 6 piles (#5, #7, #9, #11, #13 & #15) have been spliced.
- pile #3, #7, #9, #12, #14 and #19 were replaced.
- pile #20 - top rot (~25mm shell) with grass growing.

ANCHOR PIER #1 (16 piles):

- pile # 1 and #2 - replaced.
- pile #13 - sound soft in east side.
- pile #16 - sounded soft near top. Drilled at 600mm under cap - OK.

BENT #8 (19 piles):

- pile #3 has a wide check in the south east face of upper section.
- pile #14 - past inspection indicated that interior rot in east face at lower bracing. Drilled in NE face in this inspection, condition of pile seems to be OK.

BENT #9 (19 piles):

- pile #13 - a wide check in mid section.
- piles #17 & #18 - a wide check in east face.

BENT #10 (19 piles):

- piles #1 and #3 not supporting caps.
- pile #2 & #19 - replaced.
- pile #4, north face - drilled at ~550mm under cap, OK.
- pile #18 - a wide check in the south face near the top.

ANCHOR PIER #2:

- top rot in 1st batter pile at N end.
- 1st pile from N on W side has 1" shell with interior rot, 12" diameter.
- 2nd batter pile from N has 1.5" shell, interior rot at lower bracing, 14" diameter.

BRIDGE MANAGEMENT INFORMATION SYSTEM

24 Sep 2015

s.15

Condition Inspection Report

Criteria: Structure No = 00596 - Include Inspection Condition Photos = N
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Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Detailed Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

9 . Footings/Piling

- 1st batter pile from S has interior rot at lower horizontal bracing, 12" diameter with 1.5" shell.
- 2nd pile from N on east side has 1.5" shell with interior rot at lower bracing, 13" diameter.
- bottom horizontal fence or braces were replaced while a few on upper part were replaced.

ANCHOR PIER #3:

- piles at west side #2,3,4,5,6,7 were replaced.

BENT #11(19 piles):

- pile #3, west face - 50mm shell then rot. Drilled west face at ~1.5 m. & 2 m. above lower horizontal bracing. A wide check near top of the pile.
- pile #18 and #19 were replaced.

Bent #12 (20 piles)

- pile #2 - interior rot.
- pile #19 - a wide check in the south face.

BENT #13 (19 piles):

- pile #7 has top rot.

BENT #14 (East abutment):

- 8 piles under cap plus 4 bracing piles at piles #2, #4, #6 & #8.
- a wide check in pile #8 south face.
- medium checking in piles. A wide split in front of pile #1 resulting from the embedding of the rail track spike to hold the steel cap.

11 . Bearings

- Thin plain elastomeric bearing pads were placed between bath tub girders and steel caps.
- pads were warped in areas.
- Lugs (for anchoring the girders) at ends of the girders are mostly with medium to heavy corrosion / some even popping out the surrounding concrete in the end diaphragms.
- West abutment with timber cap do not have bearing pads.
- East abutment drift pins at the ends of bath tub girders were exposed and have medium to heavy corrosion.

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Contract Area: 7 - Fraser Valley CA

Item Notes:

12 . Caps

- 255mm x 255mm steel caps were placed on east abutment and all piers & bents have medium to heavy (some with crevice) corrosion.

BENT #1 (West abutment):

- dirt against the ends of cap.

BENT #2:

- steel cap with light to medium corrosion tilts to the west by about 40mm and seems to be stabilized.

BENT #3:

- steel top cap - medium to heavy corrosion.
 - perforations below girder B on east and west face of cap
 - perforation below girder D on west face
 - 9th cross cap - end rot started at west end.
 - 11th cross cap - a wide vertical split in west end.
 - west timber cap is twisting & sagging slightly and has a shake at south end with light rot.

BENT #4:

- steel top cap has medium to heavy corrosion especially on underside.

BENT #5:

- steel top cap has medium to heavy corrosion.
 - large perforations below girder G
 - east cap has a wide vertical check (with grass growing in the check) in the south end.
 - west cap has a wide vertical checks in both north & south ends.

BENT #6:

- steel top cap has medium to heavy corrosion.
 - east cap - a wide check in top south end.
 - west cap - a check in bottom north end.

BENT #7:

- steel top cap has medium to heavy corrosion with some bulge below girder F.
 - a small perforation in underside of steel top cap at south of cross cap #6.
 - a large perforation in west side of steel top cap at north of cross cap #6.
 - 1st cross cap was replaced.
 - 2nd and 3rd cross caps - a wide vertical check at east end.
 - 4th cross cap has end rot in the west end (about 500mm in length).
 - 7th cross caps - end rot started at west end.
 - west cap at south end - a wide vertical split in the middle, about 600mm long end rot.

ANCHOR PIER #1:

- double steel caps with medium to heavy corrosion especially on underside.
 - top of cap is rust jacking see photo
 - rot in the 2nd cap spacer plank, west end.
 - 7th cross cap - wide checks in both ends.
 - cross cap above the outer north piles - west end seems to be rotten. Drilled & indicating soft & wet, rot in the west end 0.5m long.

BENT #8:

- steel top cap has medium to heavy corrosion.

BENT #9:

- steel top cap has medium to heavy corrosion.
 - medium checks in both timber caps.

BENT #10:

- steel top cap has medium to heavy corrosion.
 - cross cap #4 has a wide check at west side.
 - west cap - a wide horizontal check in the north half (west face). 40mm gap between underside of cap & top of pile #1.
 - east cap - a wide check (with minor grass growing) at top at south end.

ANCHOR PIER #2:**ANCHOR PIER #3:**

- #1 cross cap - end rot in both ends.

BENT #11:

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Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

12 . Caps

- steel top cap has medium to heavy corrosion.
- a wide check in top of west lower cap with grass growing in the S. end.

BENT #12:

- steel cap has medium corrosion with a small perforation on east side under girder G&H.
- east cap - medium checks between cross caps #4 & #5 and top check at south end..

BENT #13:

- steel top cap has medium to heavy corrosion.
- east cap has a wide check in the south end.

BENT #14 (East Abutment)

- Steel top cap has medium corrosion. timber cap over piles #4 to #6 have checks

14 . Dolphins/Fenders

- dolphins are in good condition except the one on the south side of pier 3, it has top rot, grass growing in south west pile & the metal covering on the top missed south half.

Anchor Pier #2:

- sheathing planks on east side of pier.
- new planks installed on lower half
- few planks have end rot.

Anchor Pier #3:

- sheathing planks on west side of pier.
- new planks installed on lower half
- a few planks have end rot.

16 . Stringers

7 steel stringers in span 12.

- Random light to medium corrosion on flanges and bottoms of webs.
- All stringers show medium to some heavy corrosion on the top flange. However, stringer G shows heavy corrosion at pier 3 (east end).
- Stringer 12B over pier 3 has heavy corrosion on the underside of bottom flange.

17 . Girders

- Twelve 420mm x 850mm concrete bath tub girders per span except span 12 (steel stringers).

- General condition: horizontal cracks / vertical cracks(some with eff.)
 /delaminations/extensive spalls / exposed main reinforcements with light to heavy corrosion on bottoms of legs, more under wheel paths with some full span spalls (i.e. girders C, D, K & L) and at bearing locations.

- Span 3 (between bents #3 & #4) - bathtub girders A & B are sitting partially on bent #4 cap (~100mm).

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Contract Area: 7 - Fraser Valley CA

Item Notes:

- 19 . Bracing/Diaphragms
- BENT #2 - no pile bracing.
- BENT #3:
 - the diagonal brace on east side has end rot.
 - lateral bracing on west face at pile #1 has ~500mm rot at end.
 - rot in east face of lower tie at pile #7.
- BENT #4 - the diagonal brace on west side has end rot.
- BENT #5:
 - west side - the lower pile bracing is rotten in the north side and the lower end came apart from the connection.
- BENT #8 - rot in the ends of cross bracing for the lower ties between piles #3 and #4.
- ANCHOR PIER #1:
 - east side, upper pile bracing at south side - rot in south end (up side).
- BENT #9:
 - west side - top end of the top pile bracing is rotten at north end.
- ANCHOR PIER #2:
 - west side - a wide split in diagonal brace and held only by one bolt.
- SPAN 12:
 - at piers 2 and 3 - heavy corrosion on steel channel bracing. Rust through holes in some.
 - at 2 intermediate diaphragms - spot corrosion.
- BENT #12 - bottom diagonal braces on east side have end rot.
- 29 . Coating (Structure)
- paint generally faded on steel stringers in span 12 with areas of rust and light corrosion.
- 30 . Sub Deck/Cross Ties
- precast concrete panels in span 12
- leakage between stringers under curb.
 - Random delams in bays.
 - Bay 1: a light spall / exposed rebar near pier 3
 - Bay 2: a large spall / exposed rebar near pier 3
 - Bay4: a medium spall/exposed medium corroded rebar over pier 2 and near pier 3
 - Bay 6: a large spall / exposed rebar near pier 3.

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Item Notes:

31 . Wearing Surface

- concrete overlay with light scaling.
- medium transverse cracks in main span.

Span 1&2 - good condition

Span 3 - a fine longitudinal crack on W/B middle and south wheel path.

Span 4 - a fine longitudinal crack on W/B south wheel path.
 - fine transverse cracks in E/B at midspan

Span 5-9 - good condition

Span 10 - a fine longitudinal crack on W/B both wheel paths.

Span 11 - 10mm higher than span 12.
 - a fine longitudinal crack on W/B south wheel path.

Span 12 - uneven surface between span 12 and 13.
 - several medium transverse cracks across the deck at space of 2m.

Span 13 - a fine longitudinal crack on W/B south wheel path.

Spans 14 - a fine longitudinal crack on W/B south wheel path.

Span 15 - a full span long longitudinal fine crack on the middle of W/B.

Span 16 - several light spalls in the north wheel path of the east bound lane.

32 . Deck Joints

Bent #6 - random separation from armour. Completely filled with dirt.

Bent #7 - a narrow compression seal with random broken in the middle.

Anchor pier #1 - a narrow compression seal has random short cracks and was pulled
 away from armouring in sections.

Bent #9 - random separation from armour especially on E/B. Completely filled with dirt.

Bent #11 - random separation from armour.

Construction joints at remaining piers and abutments should be sealed

33 . Curbs/Wheelguards

- 220mm wide x 275mm high curb on roadway.
- general wear. Areas of light plow damage.
- small spalls / exposed rebars in random areas.

Span 16 - south curb at bent #13 - a medium spall in back face.

34 . Sidewalk(s)

Sidewalk width - 1550mm.

- asphalt overlay, light to medium scaling.
- wide gaps between spans over the bents (up to 100mm at bents #3 & #4, about 50 to 70mm at bent #10 with full of grass), random asphalt filler gone & grass growing in the gap.

- random wide longitudinal (e.g. spans 11 & 14) & transverse cracks.

Sidewalk approach at west end - settlement of about 40 to 60mm with grass growing
 along the deck end.

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Contract Area: 7 - Fraser Valley CA

Item Notes:

- 35 . Railings/Parapets
- 900mm high (above the concrete curb) timber railings - 2 side & 1 top rail.
 - 140mm x 140mm posts with 2 m. post spacing. Railing size - 190mm x 65mm.
 - areas of rot in rails - north side upper & lower railing in span 12 near mid span, north side top rail at east end and lower rail near mid span in span 13.
 - 1st post in span 15 (north side) at bent 12 - rot at curb level.
- 2009
- 2 posts were replaced on span 12, northside
 - top and bottom rails were replaced at east abutment, north side
- 2012
- 3 posts are rotten. #3, 4 & 6 on Northside from East abutment.
 - bottom rail at east abutment heavily rotten.
- 37 . Drains/Pipes
- all drains clear.
- 38 . Coating (Railings)
- new paint coating.
- 39 . Signing/Lighting
- Old standard W54's at all four corners.
 - SE W54 mostly hidden by new flare
- 40 . Roadway Approaches
- WEST APPROACH:
- gap of about 30~50mm along the ballast wall.
- East bound:
- slight bump at deck end.
 - wide transverse & map cracking.
- West bound:
- ~10 to 20mm settlement on north wheel paths & 20~30mm on south wheel path.
 - wide transverse & map cracking.
- EAST APPROACH:
- new pavement
- 41 . Roadway Flares
- West approach:
- south side - old 4 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - north side - none.
- East approach:
- south side - new 6 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - north side - new 8 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - 1st CBR at bridge end slight loss of bearing in front corner.

Inspection Notes:**Drainage Area Description**

BACKWATER SLOUGH SLOW MOVING FRESH WATER.

Rehab Work Notes

In 2009 a major rehab work was done for replacing rotted piles, timber caps and cross caps.

BLAST AND PAINT ALL STEEL CAPS BEFORE LOSS OF SECTION IS TOO EXTREME. - REHAB ALL STRINGERS THAT HAVE DETERIOATED.

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Structure No: 00596 - DEWDNEY**Status:** Open/In Use**Inspection Type:** Detailed Condition**Region:** 1 - South Coast Region**District:** 1 - Lower Mainland District**Contract Area:** 7 - Fraser Valley CA**Inspection Notes:****Maintenance Work Notes**

April 17, 2011

2. Banks - trim tree at northwest corner.

6. Wing Walls - replace rotten piles.

7. Piling - replace /rehab few rotten piles.

9. Bearings - Reinforcing the lugs and draft pin with heavy corroded.

10. Caps:

-replace corroded steel caps.

- clean dirt and material off caps.

14. Girders - need engineer's review before making the repair.

16. Bracing - replace split and rotten braces.

26. Coating (Structure) - sandblast and paint steel stringers.

27. Sub Deck - clean and patch spalled areas in span 12.

28. Wearing Surface - seal cracks.

29. Deck Joints

- repair seal at anchor pier #1 and bent 7

- seal construction joints.

31. Sidewalk - Seal cracks.

32. Railings - replace broken/ rotten rails and post.

37. Approaches - seal cracks. fill approaches to level with deck.

38. Flares - consider installing flares.

BRIDGE MANAGEMENT INFORMATION SYSTEM

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Inspection Type: Routine Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

RFI: 07-A-7-00007 - Rte 7 EB - Lougheed Highway - ON

Features Crossed: LOUGHEED/NICOMEN SLOUGH

Component Group/Component		E	G	F	P	V	X	N/A
HYDROTECHNICAL :								
1.	Debris Risk	100						N
2.	Channel	100						N
3.	Erosion Protection	100						N
4.	Substructure Scour	100						N
SUBSTRUCTURE :								
5.	Foundation Movement	100						N
6.	Abutments		100					N
7.	Wing/Retaining Walls		94	4	2			N
8.	Embankment		100					N
9.	Footings/Piling		75	23	1	1		N
11.	Bearings		50	40	10			N
12.	Caps	10	20	30	35	5		N
14.	Dolphins/Fenders		90	10				N
SUPERSTRUCTURE :								
16.	Stringers			60	35	5		N
17.	Girders		75	10	10	5		N
19.	Bracing/Diaphragms		95	5				N
26.	Pins/Bolts/Rivets		90	5	5			N
27.	Camber/Sag	99	1					N
28.	Live Load Vibration	100						N
29.	Coating (Structure)		80	5	15			N
DECK :								
30.	Sub Deck/Cross Ties		95	3	2			N
31.	Wearing Surface		93	7				N
32.	Deck Joints		20		80			N
33.	Curbs/Wheelguards		70	28	2			N
34.	Sidewalk(s)		70	28	2			N
35.	Railings/Parapets		95	3	2			N
37.	Drains/Pipes		100					N
38.	Coating (Railings)	95	4	1				N
APPROACHES :								
39.	Signing/Lighting		75		25			N
40.	Roadway Approaches	50	20	25	5			N
41.	Roadway Flares			75	25			N

1st Abutment Position: W

Year Built: 1958 Estimated? ☐

Length (m): 148.400

Note:

Main Span Length: 19.787

Main Span Type: STRINGER

Spans: 16

Urgency: 5

BCI Rating: 2.16

Adjusted BCI Rating: 2.33

Inspector/Inspected By: Doug Wilson

On 2013/10/29

Amendment/Partial Inspection?

Urgency Notes:

Urgency Rating Note: - Concrete bath tub girders - extensive heavy spalling / exposed main reinforcement with light to medium corrosion.
 - Steel caps -extensive heavy corrosion and some perforations.

Item Notes:

- 1 . Debris Risk - heavy debris at north side (downstream) of the bridge.
 - 2009: debris mostly removed, but a few trees remain
- 4 . Substructure Scour - fill slowly sloughing away from both abutments.
 - fill sloughing around and away from all wing walls.

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Item Notes:

6 . Abutments

First abutment - WEST (bent 1).

West abutment (bent 1):

- ballast planks were rotten on north end.

East abutment (bent 14):

- 5 treated ballast planks in good condition.

- damp, leakage from deck.

7 . Wing/Retaining Walls

WEST ABUTMENT:

- extension of ballast planks on south side.

- south wing wall pile has top rot.

- no wing wall on north side.

EAST ABUTMENT:

- extension of ballast planks.

- south wing wall pile has rot in top 0.5m.

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Item Notes:

9 . Footings/Piling

Snooper inspection April 17, 2012

most of previous rot piles were replaced with new piles clamped on sound bottom piles.
 A few short horizontal braces were replaced on each bent.

BENT #1 (West abutment)**BENT #2:**

- piles #1,#3,#4,#13,#15,#16 top part of piles were replaced and clapped at bottom.

BENT #3 (18 piles):

- 7 center piles (#3, #5, #7, #9, #11, #13 & #15) are spliced in the top 1 m with flat bars.
- pile #1 - upper part has a thick shell.
- pile #11 - drilled E. face at 500mm above lower tie, OK.
- pile #2, #3, #12, #16 and #17 were spliced with a new pile respectively, clamped at top and splice at bottom.
- pile #13 top splice has a poor alignment.

BENT #4 (19 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #14 & #16) at tops.
- pile #3, a new pile was clamped at very bottom.
- pile #18 has a wide check full height in south east face.
- pile #19 has top rot.

BENT #5 (20 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #15 & #17) at tops.
- pile #2, #5, #6, #13 and #17 were replaced by new piles.
- pile #15, north face - 50mm shell then rot. Drilled at ~1.75 m. above lower horizontal bracing.
- pile #18, west face - drilled at 550mm under cap - OK.
- pile #19 - a wide check at top otherwise OK.

BENT #6 (20 piles):

- 8 piles (#3, #5, #7, #9, #15, #18, #19) have been spliced at top.
- pile #1 - a wide check on E. face.
- piles #9 & #10 - previously drilled in west face at about mid height.
- pile #15, east face - 65mm shell then rot. Drilled at 300mm under splice.
- pile #17 - OK. Drilled at 1.1 m. above the lower horizontal bracing.
 - one of splice vertical bars was not anchored due to bolt missing.
- pile #18 - top rot.
- pile #19 - a wide check (full height) in the south west face.
- pile #20 - center rot in the top half of the pile with grass growing in the top.

BENT #7 (20 piles):

- 6 piles (#5, #7, #9, #11, #13 & #15) have been spliced.
- pile #3, #7, #9, #12, #14 and #19 were replaced.
- pile #20 - top rot (~25mm shell) with grass growing.

ANCHOR PIER #1 (16 piles):

- pile # 1 and #2 - replaced.
- pile #13 - sound soft in east side.
- pile #16 - sounded soft near top. Drilled at 600mm under cap - OK.

BENT #8 (19 piles):

- pile #3 has a wide check in the south east face of upper section.
- pile #14 - past inspection indicated that interior rot in east face at lower bracing. Drilled in NE face in this inspection, condition of pile seems to be OK.

BENT #9 (19 piles):

- pile #13 - a wide check in mid section.
- piles #17 & #18 - a wide check in east face.

BENT #10 (19 piles):

- piles #1 and #3 not supporting caps.
- pile #2 & #19 - replaced.
- pile #4, north face - drilled at ~550mm under cap, OK.
- pile #18 - a wide check in the south face near the top.

ANCHOR PIER #2:

- top rot in 1st batter pile at N end.
- 1st pile from N on W side has 1" shell with interior rot, 12" diameter.
- 2nd batter pile from N has 1.5" shell, interior rot at lower bracing, 14" diameter.

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Item Notes:

9 . Footings/Piling

- 1st batter pile from S has interior rot at lower horizontal bracing, 12" diameter with 1.5" shell.
- 2nd pile from N on east side has 1.5" shell with interior rot at lower bracing, 13" diameter.
- bottom horizontal fence or braces were replaced while a few on upper part were replaced.

ANCHOR PIER #3:

- piles at west side #2,3,4,5,6,7 were replaced.

BENT #11(19 piles):

- pile #3, west face - 50mm shell then rot. Drilled west face at ~1.5 m. & 2 m. above lower horizontal bracing. A wide check near top of the pile.
- pile #18 and #19 were replaced.

Bent #12 (20 piles)

- pile #2 - interior rot.
- pile #19 - a wide check in the south face.

BENT #13 (19 piles):

- pile #7 has top rot.

BENT #14 (East abutment):

- 8 piles under cap plus 4 bracing piles at piles #2, #4, #6 & #8.
- a wide check in pile #8 south face.
- medium checking in piles. A wide split in front of pile #1 resulting from the embedding of the rail track spike to hold the steel cap.

11 . Bearings

- Thin plain elastomeric bearing pads were placed between bath tub girders and steel caps.
- pads were warped in areas.
- Lugs (for anchoring the girders) at ends of the girders are mostly with medium to heavy corrosion / some even popping out the surrounding concrete in the end diaphragms.
- West abutment with timber cap do not have bearing pads.
- East abutment drift pins at the ends of bath tub girders were exposed and have medium to heavy corrosion.

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Contract Area: 7 - Fraser Valley CA

Item Notes:

12 . Caps

- 255mm x 255mm steel caps were placed on east abutment and all piers & bents have medium to heavy (some with crevice) corrosion.

BENT #1 (West abutment):

- dirt against the ends of cap.

BENT #2:

- steel cap with light to medium corrosion tilts to the west by about 40mm and seems to be stabilized.

BENT #3:

- steel top cap - medium to heavy corrosion.
 - perforations below girder B on east and west face of cap
 - perforation below girder D on west face
 - 9th cross cap - end rot started at west end.
 - 11th cross cap - a wide vertical split in west end.
 - west timber cap is twisting & sagging slightly and has a shake at south end with light rot.

BENT #4:

- steel top cap has medium to heavy corrosion especially on underside.

BENT #5:

- steel top cap has medium to heavy corrosion.
 - large perforations below girder G
 - east cap has a wide vertical check (with grass growing in the check) in the south end.
 - west cap has a wide vertical checks in both north & south ends.

BENT #6:

- steel top cap has medium to heavy corrosion.
 - east cap - a wide check in top south end.
 - west cap - a check in bottom north end.

BENT #7:

- steel top cap has medium to heavy corrosion with some bulge below girder F.
 - a small perforation in underside of steel top cap at south of cross cap #6.
 - a large perforation in west side of steel top cap at north of cross cap #6.
 - 1st cross cap was replaced.
 - 2nd and 3rd cross caps - a wide vertical check at east end.
 - 4th cross cap has end rot in the west end (about 500mm in length).
 - 7th cross caps - end rot started at west end.
 - west cap at south end - a wide vertical split in the middle, about 600mm long end rot.

ANCHOR PIER #1:

- double steel caps with medium to heavy corrosion especially on underside.
 - top of cap is rust jacking see photo
 - rot in the 2nd cap spacer plank, west end.
 - 7th cross cap - wide checks in both ends.
 - cross cap above the outer north piles - west end seems to be rotten. Drilled & indicating soft & wet, rot in the west end 0.5m long.

BENT #8:

- steel top cap has medium to heavy corrosion.

BENT #9:

- steel top cap has medium to heavy corrosion.
 - medium checks in both timber caps.

BENT #10:

- steel top cap has medium to heavy corrosion.
 - cross cap #4 has a wide check at west side.
 - west cap - a wide horizontal check in the north half (west face). 40mm gap between underside of cap & top of pile #1.
 - east cap - a wide check (with minor grass growing) at top at south end.

ANCHOR PIER #2:**ANCHOR PIER #3:**

- #1 cross cap - end rot in both ends.

BENT #11:

BRIDGE MANAGEMENT INFORMATION SYSTEM

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Condition Inspection Report

Criteria: Structure No = 00596 - Include Inspection Condition Photos = N
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Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Routine Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

12 . Caps

- steel top cap has medium to heavy corrosion.
- a wide check in top of west lower cap with grass growing in the S. end.

BENT #12:

- steel cap has medium corrosion with a small perforation on east side under girder G&H.
- east cap - medium checks between cross caps #4 & #5 and top check at south end..

BENT #13:

- steel top cap has medium to heavy corrosion.
- east cap has a wide check in the south end.

BENT #14 (East Abutment)

- Steel top cap has medium corrosion. timber cap over piles #4 to #6 have checks

14 . Dolphins/Fenders

- dolphins are in good condition except the one on the south side of pier 3, it has top rot, grass growing in south west pile & the metal covering on the top missed south half.

Anchor Pier #2:

- sheathing planks on east side of pier.
- new planks installed on lower half
- few planks have end rot.

Anchor Pier #3:

- sheathing planks on west side of pier.
- new planks installed on lower half
- a few planks have end rot.

16 . Stringers

7 steel stringers in span 12.

- Random light to medium corrosion on flanges and bottoms of webs.
- All stringers show medium to some heavy corrosion on the top flange. However, stringer G shows heavy corrosion at pier 3 (east end).
- Stringer 12B over pier 3 has heavy corrosion on the underside of bottom flange.

17 . Girders

- Twelve 420mm x 850mm concrete bath tub girders per span except span 12 (steel stringers).

- General condition: horizontal cracks / vertical cracks(some with eff.)
 /delaminations/extensive spalls / exposed main reinforcements with light to heavy corrosion on bottoms of legs, more under wheel paths with some full span spalls (i.e. girders C, D, K & L) and at bearing locations.

- Span 3 (between bents #3 & #4) - bathtub girders A & B are sitting partially on bent #4 cap (~100mm).

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Contract Area: 7 - Fraser Valley CA

Item Notes:

- 19 . Bracing/Diaphragms
- BENT #2 - no pile bracing.
- BENT #3:
 - the diagonal brace on east side has end rot.
 - lateral bracing on west face at pile #1 has ~500mm rot at end.
 - rot in east face of lower tie at pile #7.
- BENT #4 - the diagonal brace on west side has end rot.
- BENT #5:
 - west side - the lower pile bracing is rotten in the north side and the lower end came apart from the connection.
- BENT #8 - rot in the ends of cross bracing for the lower ties between piles #3 and #4.
- ANCHOR PIER #1:
 - east side, upper pile bracing at south side - rot in south end (up side).
- BENT #9:
 - west side - top end of the top pile bracing is rotten at north end.
- ANCHOR PIER #2:
 - west side - a wide split in diagonal brace and held only by one bolt.
- SPAN 12:
 - at piers 2 and 3 - heavy corrosion on steel channel bracing. Rust through holes in some.
 - at 2 intermediate diaphragms - spot corrosion.
- BENT #12 - bottom diagonal braces on east side have end rot.
- 29 . Coating (Structure)
- paint generally faded on steel stringers in span 12 with areas of rust and light corrosion.
- 30 . Sub Deck/Cross Ties
- precast concrete panels in span 12
- leakage between stringers under curb.
 - Random delams in bays.
 - Bay 1: a light spall / exposed rebar near pier 3
 - Bay 2: a large spall / exposed rebar near pier 3
 - Bay4: a medium spall/exposed medium corroded rebar over pier 2 and near pier 3
 - Bay 6: a large spall / exposed rebar near pier 3.

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Item Notes:

31 . Wearing Surface

- concrete overlay with light scaling.
- medium transverse cracks in main span.

Span 1&2 - good condition

Span 3 - a fine longitudinal crack on W/B middle and south wheel path.

Span 4 - a fine longitudinal crack on W/B south wheel path.
 - fine transverse cracks in E/B at midspan

Span 5-9 - good condition

Span 10 - a fine longitudinal crack on W/B both wheel paths.

Span 11 - 10mm higher than span 12.
 - a fine longitudinal crack on W/B south wheel path.

Span 12 - uneven surface between span 12 and 13.
 - several medium transverse cracks across the deck at space of 2m.

Span 13 - a fine longitudinal crack on W/B south wheel path.

Spans 14 - a fine longitudinal crack on W/B south wheel path.

Span 15 - a full span long longitudinal fine crack on the middle of W/B.

Span 16 - several light spalls in the north wheel path of the east bound lane.

32 . Deck Joints

Bent #6 - random separation from armour. Completely filled with dirt.

Bent #7 - a narrow compression seal with random broken in the middle.

Anchor pier #1 - a narrow compression seal has random short cracks and was pulled
 away from armouring in sections.

Bent #9 - random separation from armour especially on E/B. Completely filled with dirt.

Bent #11 - random separation from armour.

Construction joints at remaining piers and abutments should be sealed

33 . Curbs/Wheelguards

- 220mm wide x 275mm high curb on roadway.
- general wear. Areas of light plow damage.
- small spalls / exposed rebars in random areas.

Span 16 - south curb at bent #13 - a medium spall in back face.

34 . Sidewalk(s)

Sidewalk width - 1550mm.

- asphalt overlay, light to medium scaling.
- wide gaps between spans over the bents (up to 100mm at bents #3 & #4, about 50 to 70mm at bent #10 with full of grass), random asphalt filler gone & grass growing in the gap.

- random wide longitudinal (e.g. spans 11 & 14) & transverse cracks.

Sidewalk approach at west end - settlement of about 40 to 60mm with grass growing
 along the deck end.

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Item Notes:

- 35 . Railings/Parapets
- 900mm high (above the concrete curb) timber railings - 2 side & 1 top rail.
 - 140mm x 140mm posts with 2 m. post spacing. Railing size - 190mm x 65mm.
 - areas of rot in rails - north side upper & lower railing in span 12 near mid span, north side top rail at east end and lower rail near mid span in span 13.
 - 1st post in span 15 (north side) at bent 12 - rot at curb level.
- 2009
- 2 posts were replaced on span 12, northside
 - top and bottom rails were replaced at east abutment, north side
- 2012
- 3 posts are rotten. #3, 4 & 6 on Northside from East abutment.
 - bottom rail at east abutment heavily rotten.
- 37 . Drains/Pipes
- all drains clear.
- 38 . Coating (Railings)
- new paint coating.
- 39 . Signing/Lighting
- Old standard W54's at all four corners.
 - SE W54 mostly hidden by new flare
- 40 . Roadway Approaches
- WEST APPROACH:
- gap of about 30~50mm along the ballast wall.
- East bound:
- slight bump at deck end.
 - wide transverse & map cracking.
- West bound:
- ~10 to 20mm settlement on north wheel paths & 20~30mm on south wheel path.
 - wide transverse & map cracking.
- EAST APPROACH:
- new pavement
- 41 . Roadway Flares
- West approach:
- south side - old 4 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 north side - none.
- East approach:
- south side - new 6 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 north side - new 8 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - 1st CBR at bridge end slight loss of bearing in front corner.

Inspection Notes:**Drainage Area Description**

BACKWATER SLOUGH SLOW MOVING FRESH WATER.

Rehab Work Notes

In 2009 a major rehab work was done for replacing rotted piles, timber caps and cross caps.

BLAST AND PAINT ALL STEEL CAPS BEFORE LOSS OF SECTION IS TOO EXTREME. - REHAB ALL STRINGERS THAT HAVE DETERIOATED.

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Structure No: 00596 - DEWDNEY**Status:** Open/In Use**Inspection Type:** Routine Condition**Region:** 1 - South Coast Region**District:** 1 - Lower Mainland District**Contract Area:** 7 - Fraser Valley CA**Inspection Notes:****Maintenance Work Notes**

Oct.29,2013

2. Banks - trim tree at northwest corner.

6. Wing Walls - replace rotten piles.

7. Piling - replace /rehab few rotten piles.

9. Bearings - Reinforcing the lugs and draft pin with heavy corroded.

10. Caps:

-replace corroded steel caps.

- clean dirt and material off caps.

14. Girders - need engineer's review before making the repair.

16. Bracing - replace split and rotten braces.

26. Coating (Structure) - sandblast and paint steel stringers.

27. Sub Deck - clean and patch spalled areas in span 12.

28. Wearing Surface - seal cracks.

29. Deck Joints

- repair seal at anchor pier #1 and bent 7

- seal construction joints.

31. Sidewalk - Seal cracks.

32. Railings - replace broken/ rotten rails and post.

37. Approaches - seal cracks. fill approaches to level with deck.

38. Flares - consider installing flares.

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District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

RFI: 07-A-7-00007 - Rte 7 EB - Lougheed Highway - ON

Features Crossed: LOUGHEED/NICOMEN SLOUGH

Component Group/Component		E	G	F	P	V	X	N/A
HYDROTECHNICAL :								
1.	Debris Risk	100						N
2.	Channel	100						N
3.	Erosion Protection	100						N
4.	Substructure Scour	100						N
SUBSTRUCTURE :								
5.	Foundation Movement	100						N
6.	Abutments		100					N
7.	Wing/Retaining Walls		94	4	2			N
8.	Embankment		100					N
9.	Footings/Piling		75	23	1	1		N
11.	Bearings		50	40	10			N
12.	Caps	10	20	10	25	35		N
14.	Dolphins/Fenders		90	10				N
SUPERSTRUCTURE :								
16.	Stringers			60	35	5		N
17.	Girders		75	10	10	5		N
19.	Bracing/Diaphragms		95	5				N
26.	Pins/Bolts/Rivets		90	5	5			N
27.	Camber/Sag	99	1					N
28.	Live Load Vibration	100						N
29.	Coating (Structure)		80	5	15			N
DECK :								
30.	Sub Deck/Cross Ties		95	3	2			N
31.	Wearing Surface		93	7				N
32.	Deck Joints		20		80			N
33.	Curbs/Wheelguards		70	28	2			N
34.	Sidewalk(s)		70	28	2			N
35.	Railings/Parapets		95	3	2			N
37.	Drains/Pipes		100					N
38.	Coating (Railings)	95	4	1				N
APPROACHES :								
39.	Signing/Lighting		75		25			N
40.	Roadway Approaches	50	20	25	5			N
41.	Roadway Flares			75	25			N

1st Abutment Position: W

Year Built: 1958 Estimated? ☐

Length (m): 148.400

Note:

Main Span Length: 19.787

Main Span Type: STRINGER

Spans: 16

Urgency: 5

BCI Rating: 2.18

Adjusted BCI Rating: 2.35

Inspector/Inspected By: Doug Wilson

On 2014/10/28

Amendment/Partial Inspection?

Urgency Notes:

Urgency Rating Note: - Concrete bath tub girders - extensive heavy spalling / exposed main reinforcement with light to medium corrosion.
 - Steel caps -extensive heavy corrosion and some perforations.

Item Notes:

- 1 . Debris Risk - heavy debris at north side (downstream) of the bridge.
 - 2009: debris mostly removed, but a few trees remain
- 4 . Substructure Scour - fill slowly sloughing away from both abutments.
 - fill sloughing around and away from all wing walls.

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Item Notes:

6 . Abutments

First abutment - WEST (bent 1).

West abutment (bent 1):

- ballast planks were rotten on north end.

East abutment (bent 14):

- 5 treated ballast planks in good condition.
- damp, leakage from deck.

7 . Wing/Retaining Walls

WEST ABUTMENT:

- extension of ballast planks on south side.
- south wing wall pile has top rot.
- no wing wall on north side.

EAST ABUTMENT:

- extension of ballast planks.
- south wing wall pile has rot in top 0.5m.

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Item Notes:

9 . Footings/Piling

Snooper inspection April 17, 2012

most of previous rot piles were replaced with new piles clamped on sound bottom piles.
 A few short horizontal braces were replaced on each bent.

BENT #1 (West abutment)**BENT #2:**

- piles #1,#3,#4,#13,#15,#16 top part of piles were replaced and clapped at bottom.

BENT #3 (18 piles):

- 7 center piles (#3, #5, #7, #9, #11, #13 & #15) are spliced in the top 1 m with flat bars.
- pile #1 - upper part has a thick shell.
- pile #11 - drilled E. face at 500mm above lower tie, OK.
- pile #2, #3, #12, #16 and #17 were spliced with a new pile respectively, clamped at top and splice at bottom.
- pile #13 top splice has a poor alignment.

BENT #4 (19 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #14 & #16) at tops.
- pile #3, a new pile was clamped at very bottom.
- pile #18 has a wide check full height in south east face.
- pile #19 has top rot.

BENT #5 (20 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #15 & #17) at tops.
- pile #2, #5, #6, #13 and #17 were replaced by new piles.
- pile #15, north face - 50mm shell then rot. Drilled at ~1.75 m. above lower horizontal bracing.
- pile #18, west face - drilled at 550mm under cap - OK.
- pile #19 - a wide check at top otherwise OK.

BENT #6 (20 piles):

- 8 piles (#3, #5, #7, #9, #15, #18, #19) have been spliced at top.
- pile #1 - a wide check on E. face.
- piles #9 & #10 - previously drilled in west face at about mid height.
- pile #15, east face - 65mm shell then rot. Drilled at 300mm under splice.
- pile #17 - OK. Drilled at 1.1 m. above the lower horizontal bracing.
 - one of splice vertical bars was not anchored due to bolt missing.
- pile #18 - top rot.
- pile #19 - a wide check (full height) in the south west face.
- pile #20 - center rot in the top half of the pile with grass growing in the top.

BENT #7 (20 piles):

- 6 piles (#5, #7, #9, #11, #13 & #15) have been spliced.
- pile #3, #7, #9, #12, #14 and #19 were replaced.
- pile #20 - top rot (~25mm shell) with grass growing.

ANCHOR PIER #1 (16 piles):

- pile # 1 and #2 - replaced.
- pile #13 - sound soft in east side.
- pile #16 - sounded soft near top. Drilled at 600mm under cap - OK.

BENT #8 (19 piles):

- pile #3 has a wide check in the south east face of upper section.
- pile #14 - past inspection indicated that interior rot in east face at lower bracing. Drilled in NE face in this inspection, condition of pile seems to be OK.

BENT #9 (19 piles):

- pile #13 - a wide check in mid section.
- piles #17 & #18 - a wide check in east face.

BENT #10 (19 piles):

- piles #1 and #3 not supporting caps.
- pile #2 & #19 - replaced.
- pile #4, north face - drilled at ~550mm under cap, OK.
- pile #18 - a wide check in the south face near the top.

ANCHOR PIER #2:

- top rot in 1st batter pile at N end.
- 1st pile from N on W side has 1" shell with interior rot, 12" diameter.
- 2nd batter pile from N has 1.5" shell, interior rot at lower bracing, 14" diameter.

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Item Notes:

9 . Footings/Piling

- 1st batter pile from S has interior rot at lower horizontal bracing, 12" diameter with 1.5" shell.
- 2nd pile from N on east side has 1.5" shell with interior rot at lower bracing, 13" diameter.
- bottom horizontal fence or braces were replaced while a few on upper part were replaced.

ANCHOR PIER #3:

- piles at west side #2,3,4,5,6,7 were replaced.

BENT #11(19 piles):

- pile #3, west face - 50mm shell then rot. Drilled west face at ~1.5 m. & 2 m. above lower horizontal bracing. A wide check near top of the pile.
- pile #18 and #19 were replaced.

Bent #12 (20 piles)

- pile #2 - interior rot.
- pile #19 - a wide check in the south face.

BENT #13 (19 piles):

- pile #7 has top rot.

BENT #14 (East abutment):

- 8 piles under cap plus 4 bracing piles at piles #2, #4, #6 & #8.
- a wide check in pile #8 south face.
- medium checking in piles. A wide split in front of pile #1 resulting from the embedding of the rail track spike to hold the steel cap.

11 . Bearings

- Thin plain elastomeric bearing pads were placed between bath tub girders and steel caps.
- pads were warped in areas.
- Lugs (for anchoring the girders) at ends of the girders are mostly with medium to heavy corrosion / some even popping out the surrounding concrete in the end diaphragms.
- West abutment with timber cap do not have bearing pads.
- East abutment drift pins at the ends of bath tub girders were exposed and have medium to heavy corrosion.

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Item Notes:

12 . Caps

- 255mm x 255mm steel caps were placed on east abutment and all piers & bents have medium to heavy (some with crevice) corrosion.

BENT #1 (West abutment):

- dirt against the ends of cap.

BENT #2:

- steel cap with light to medium corrosion tilts to the west by about 40mm and seems to be stabilized.

BENT #3:

- steel top cap - medium to heavy corrosion.
 - perforations below girder B on east and west face of cap
 - perforation below girder D on west face
 - 9th cross cap - end rot started at west end.
 - 11th cross cap - a wide vertical split in west end.
 - west timber cap is twisting & sagging slightly and has a shake at south end with light rot.

BENT #4:

- steel top cap has medium to heavy corrosion especially on underside.

BENT #5:

- steel top cap has medium to heavy corrosion.
 - large perforations below girder G
 - east cap has a wide vertical check (with grass growing in the check) in the south end.
 - west cap has a wide vertical checks in both north & south ends.

BENT #6:

- steel top cap has medium to heavy corrosion.
 - east cap - a wide check in top south end.
 - west cap - a check in bottom north end.

BENT #7:

- steel top cap has medium to heavy corrosion with some bulge below girder F.
 - a small perforation in underside of steel top cap at south of cross cap #6.
 - a large perforation in west side of steel top cap at north of cross cap #6.
 - 1st cross cap was replaced.
 - 2nd and 3rd cross caps - a wide vertical check at east end.
 - 4th cross cap has end rot in the west end (about 500mm in length).
 - 7th cross caps - end rot started at west end.
 - west cap at south end - a wide vertical split in the middle, about 600mm long end rot.

ANCHOR PIER #1:

- double steel caps with medium to heavy corrosion especially on underside.
 - top of cap is rust jacking see photo
 - rot in the 2nd cap spacer plank, west end.
 - 7th cross cap - wide checks in both ends.
 - cross cap above the outer north piles - west end seems to be rotten. Drilled & indicating soft & wet, rot in the west end 0.5m long.

BENT #8:

- steel top cap has medium to heavy corrosion.

BENT #9:

- steel top cap has medium to heavy corrosion.
 - medium checks in both timber caps.

BENT #10:

- steel top cap has medium to heavy corrosion.
 - cross cap #4 has a wide check at west side.
 - west cap - a wide horizontal check in the north half (west face). 40mm gap between underside of cap & top of pile #1.
 - east cap - a wide check (with minor grass growing) at top at south end.

ANCHOR PIER #2:**ANCHOR PIER #3:**

- #1 cross cap - end rot in both ends.

BENT #11:

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Item Notes:

12 . Caps

- steel top cap has medium to heavy corrosion.
- a wide check in top of west lower cap with grass growing in the S. end.

BENT #12:

- steel cap has medium corrosion with a small perforation on east side under girder G&H.
- east cap - medium checks between cross caps #4 & #5 and top check at south end..

BENT #13:

- steel top cap has medium to heavy corrosion.
- east cap has a wide check in the south end.

BENT #14 (East Abutment)

- Steel top cap has medium corrosion. timber cap over piles #4 to #6 have checks

14 . Dolphins/Fenders

- dolphins are in good condition except the one on the south side of pier 3, it has top rot, grass growing in south west pile & the metal covering on the top missed south half.

Anchor Pier #2:

- sheathing planks on east side of pier.
- new planks installed on lower half
- few planks have end rot.

Anchor Pier #3:

- sheathing planks on west side of pier.
- new planks installed on lower half
- a few planks have end rot.

16 . Stringers

7 steel stringers in span 12.

- Random light to medium corrosion on flanges and bottoms of webs.
- All stringers show medium to some heavy corrosion on the top flange. However, stringer G shows heavy corrosion at pier 3 (east end).
- Stringer 12B over pier 3 has heavy corrosion on the underside of bottom flange.

17 . Girders

- Twelve 420mm x 850mm concrete bath tub girders per span except span 12 (steel stringers).

- General condition: horizontal cracks / vertical cracks(some with eff.)
 /delaminations/extensive spalls / exposed main reinforcements with light to heavy corrosion on bottoms of legs, more under wheel paths with some full span spalls (i.e. girders C, D, K & L) and at bearing locations.

- Span 3 (between bents #3 & #4) - bathtub girders A & B are sitting partially on bent #4 cap (~100mm).

BRIDGE MANAGEMENT INFORMATION SYSTEM

24 Sep 2015

Condition Inspection Report

s.15

Criteria: Structure No = 00596 - Include Inspection Condition Photos = N
 - Include Additional Blank Lines for Notes = N - Show Not Applicable Components = N

Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Routine Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

- 19 . Bracing/Diaphragms
- BENT #2 - no pile bracing.
- BENT #3:
 - the diagonal brace on east side has end rot.
 - lateral bracing on west face at pile #1 has ~500mm rot at end.
 - rot in east face of lower tie at pile #7.
- BENT #4 - the diagonal brace on west side has end rot.
- BENT #5:
 - west side - the lower pile bracing is rotten in the north side and the lower end came apart from the connection.
- BENT #8 - rot in the ends of cross bracing for the lower ties between piles #3 and #4.
- ANCHOR PIER #1:
 - east side, upper pile bracing at south side - rot in south end (up side).
- BENT #9:
 - west side - top end of the top pile bracing is rotten at north end.
- ANCHOR PIER #2:
 - west side - a wide split in diagonal brace and held only by one bolt.
- SPAN 12:
 - at piers 2 and 3 - heavy corrosion on steel channel bracing. Rust through holes in some.
 - at 2 intermediate diaphragms - spot corrosion.
- BENT #12 - bottom diagonal braces on east side have end rot.
- 29 . Coating (Structure)
- paint generally faded on steel stringers in span 12 with areas of rust and light corrosion.
- 30 . Sub Deck/Cross Ties
- precast concrete panels in span 12
- leakage between stringers under curb.
 - Random delams in bays.
 - Bay 1: a light spall / exposed rebar near pier 3
 - Bay 2: a large spall / exposed rebar near pier 3
 - Bay 4: a medium spall/exposed medium corroded rebar over pier 2 and near pier 3
 - Bay 6: a large spall / exposed rebar near pier 3.

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Contract Area: 7 - Fraser Valley CA

Item Notes:

31 . Wearing Surface

- concrete overlay with light scaling.
- medium transverse cracks in main span.

Span 1&2 - good condition

Span 3 - a fine longitudinal crack on W/B middle and south wheel path.

Span 4 - a fine longitudinal crack on W/B south wheel path.
 - fine transverse cracks in E/B at midspan

Span 5-9 - good condition

Span 10 - a fine longitudinal crack on W/B both wheel paths.

Span 11 - 10mm higher than span 12.
 - a fine longitudinal crack on W/B south wheel path.

Span 12 - uneven surface between span 12 and 13.
 - several medium transverse cracks across the deck at space of 2m.

Span 13 - a fine longitudinal crack on W/B south wheel path.

Spans 14 - a fine longitudinal crack on W/B south wheel path.

Span 15 - a full span long longitudinal fine crack on the middle of W/B.

Span 16 - several light spalls in the north wheel path of the east bound lane.

32 . Deck Joints

Bent #6 - random separation from armour. Completely filled with dirt.

Bent #7 - a narrow compression seal with random broken in the middle.

Anchor pier #1 - a narrow compression seal has random short cracks and was pulled
 away from armouring in sections.

Bent #9 - random separation from armour especially on E/B. Completely filled with dirt.

Bent #11 - random separation from armour.

Construction joints at remaining piers and abutments should be sealed

33 . Curbs/Wheelguards

- 220mm wide x 275mm high curb on roadway.
- general wear. Areas of light plow damage.
- small spalls / exposed rebars in random areas.

Span 16 - south curb at bent #13 - a medium spall in back face.

34 . Sidewalk(s)

Sidewalk width - 1550mm.

- asphalt overlay, light to medium scaling.
- wide gaps between spans over the bents (up to 100mm at bents #3 & #4, about 50 to 70mm at bent #10 with full of grass), random asphalt filler gone & grass growing in the gap.

- random wide longitudinal (e.g. spans 11 & 14) & transverse cracks.

Sidewalk approach at west end - settlement of about 40 to 60mm with grass growing
 along the deck end.

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Item Notes:

- 35 . Railings/Parapets
- 900mm high (above the concrete curb) timber railings - 2 side & 1 top rail.
 - 140mm x 140mm posts with 2 m. post spacing. Railing size - 190mm x 65mm.
 - areas of rot in rails - north side upper & lower railing in span 12 near mid span, north side top rail at east end and lower rail near mid span in span 13.
 - 1st post in span 15 (north side) at bent 12 - rot at curb level.
- 2009
- 2 posts were replaced on span 12, northside
 - top and bottom rails were replaced at east abutment, north side
- 2012
- 3 posts are rotten. #3, 4 & 6 on Northside from East abutment.
 - bottom rail at east abutment heavily rotten.
- 37 . Drains/Pipes
- all drains clear.
- 38 . Coating (Railings)
- new paint coating.
- 39 . Signing/Lighting
- Old standard W54's at all four corners.
 - SE W54 mostly hidden by new flare
- 40 . Roadway Approaches
- WEST APPROACH:
- gap of about 30~50mm along the ballast wall.
- East bound:
- slight bump at deck end.
 - wide transverse & map cracking.
- West bound:
- ~10 to 20mm settlement on north wheel paths & 20~30mm on south wheel path.
 - wide transverse & map cracking.
- EAST APPROACH:
- new pavement
- 41 . Roadway Flares
- West approach:
- south side - old 4 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - north side - none.
- East approach:
- south side - new 6 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - north side - new 8 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - 1st CBR at bridge end slight loss of bearing in front corner.

Inspection Notes:**Drainage Area Description**

BACKWATER SLOUGH SLOW MOVING FRESH WATER.

Rehab Work Notes

In 2009 a major rehab work was done for replacing rotted piles, timber caps and cross caps.

BLAST AND PAINT ALL STEEL CAPS BEFORE LOSS OF SECTION IS TOO EXTREME. - REHAB ALL STRINGERS THAT HAVE DETERIOATED.

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Inspection Notes:**Maintenance Work Notes**

Oct.28,2014

2. Banks - trim tree at northwest corner.

6. Wing Walls - replace rotten piles.

7. Piling - replace /rehab few rotten piles.

9. Bearings - Reinforcing the lugs and draft pin with heavy corroded.

10. Caps:

-replace corroded steel caps.

- clean dirt and material off caps.

14. Girders - need engineer's review before making the repair.

16. Bracing - replace split and rotten braces.

26. Coating (Structure) - sandblast and paint steel stringers.

27. Sub Deck - clean and patch spalled areas in span 12.

28. Wearing Surface - seal cracks.

29. Deck Joints

- repair seal at anchor pier #1 and bent 7

- seal construction joints.

31. Sidewalk - Seal cracks.

32. Railings - replace broken/ rotten rails and post.

37. Approaches - seal cracks. fill approaches to level with deck.

38. Flares - consider installing flares.

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RFI: 07-A-7-00007 - Rte 7 EB - Lougheed Highway - ON

Features Crossed: LOUGHEED/NICOMEN SLOUGH

Component Group/Component		E	G	F	P	V	X	N/A
HYDROTECHNICAL :								
1.	Debris Risk	100						N
2.	Channel	100						N
3.	Erosion Protection	100						N
4.	Substructure Scour	100						N
SUBSTRUCTURE :								
5.	Foundation Movement	100						N
6.	Abutments		100					N
7.	Wing/Retaining Walls		94	4	2			N
8.	Embankment		100					N
9.	Footings/Piling		75	23	1	1		N
11.	Bearings		50	40	10			N
12.	Caps		30	10	25	35		N
14.	Dolphins/Fenders		90	10				N
SUPERSTRUCTURE :								
16.	Stringers			60	35	5		N
17.	Girders		75	10	10	5		N
19.	Bracing/Diaphragms		95	5				N
26.	Pins/Bolts/Rivets		90	5	5			N
27.	Camber/Sag	99	1					N
28.	Live Load Vibration	100						N
29.	Coating (Structure)		80	5	15			N
DECK :								
30.	Sub Deck/Cross Ties		95	3	2			N
31.	Wearing Surface		93	7				N
32.	Deck Joints		20		80			N
33.	Curbs/Wheelguards		70	28	2			N
34.	Sidewalk(s)		70	28	2			N
35.	Railings/Parapets		95	3	2			N
37.	Drains/Pipes		100					N
38.	Coating (Railings)	95	4	1				N
APPROACHES :								
39.	Signing/Lighting		75		25			N
40.	Roadway Approaches	50	20	25	5			N
41.	Roadway Flares			75	25			N

1st Abutment Position: W

Year Built: 1958 Estimated? ☐

Length (m): 148.400

Note:

Main Span Length: 19.787

Main Span Type: STRINGER

Spans: 16

Urgency: 5

BCI Rating: 2.19

Adjusted BCI Rating: 2.35

Inspector/Inspected By: Doug Wilson

On 2015/04/28

Amendment/Partial Inspection?

Urgency Notes:

Urgency Rating Note: - Concrete bath tub girders - extensive heavy spalling / exposed main reinforcement with light to medium corrosion.
 - Steel caps -extensive heavy corrosion and some perforations.

Item Notes:

- 1 . Debris Risk - heavy debris at north side (downstream) of the bridge.
 - 2009: debris mostly removed, but a few trees remain
- 4 . Substructure Scour - fill slowly sloughing away from both abutments.
 - fill sloughing around and away from all wing walls.

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Item Notes:

6 . Abutments

First abutment - WEST (bent 1).

West abutment (bent 1):

- ballast planks were rotten on north end.

East abutment (bent 14):

- 5 treated ballast planks in good condition.

- damp, leakage from deck.

7 . Wing/Retaining Walls

WEST ABUTMENT:

- extension of ballast planks on south side.

- south wing wall pile has top rot.

- no wing wall on north side.

EAST ABUTMENT:

- extension of ballast planks.

- south wing wall pile has rot in top 0.5m.

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Item Notes:

9 . Footings/Piling

Snooper inspection April 17, 2012

most of previous rot piles were replaced with new piles clamped on sound bottom piles.
 A few short horizontal braces were replaced on each bent.

BENT #1 (West abutment)**BENT #2:**

- piles #1,#3,#4,#13,#15,#16 top part of piles were replaced and clapped at bottom.

BENT #3 (18 piles):

- 7 center piles (#3, #5, #7, #9, #11, #13 & #15) are spliced in the top 1 m with flat bars.
- pile #1 - upper part has a thick shell.
- pile #11 - drilled E. face at 500mm above lower tie, OK.
- pile #2, #3, #12, #16 and #17 were spliced with a new pile respectively, clamped at top and splice at bottom.
- pile #13 top splice has a poor alignment.

BENT #4 (19 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #14 & #16) at tops.
- pile #3, a new pile was clamped at very bottom.
- pile #18 has a wide check full height in south east face.
- pile #19 has top rot.

BENT #5 (20 piles):

- 8 spliced piles (#3, #5, #7, #9, #11, #13, #15 & #17) at tops.
- pile #2, #5, #6, #13 and #17 were replaced by new piles.
- pile #15, north face - 50mm shell then rot. Drilled at ~1.75 m. above lower horizontal bracing.
- pile #18, west face - drilled at 550mm under cap - OK.
- pile #19 - a wide check at top otherwise OK.

BENT #6 (20 piles):

- 8 piles (#3, #5, #7, #9, #15, #18, #19) have been spliced at top.
- pile #1 - a wide check on E. face.
- piles #9 & #10 - previously drilled in west face at about mid height.
- pile #15, east face - 65mm shell then rot. Drilled at 300mm under splice.
- pile #17 - OK. Drilled at 1.1 m. above the lower horizontal bracing.
 - one of splice vertical bars was not anchored due to bolt missing.
- pile #18 - top rot.
- pile #19 - a wide check (full height) in the south west face.
- pile #20 - center rot in the top half of the pile with grass growing in the top.

BENT #7 (20 piles):

- 6 piles (#5, #7, #9, #11, #13 & #15) have been spliced.
- pile #3, #7, #9, #12, #14 and #19 were replaced.
- pile #20 - top rot (~25mm shell) with grass growing.

ANCHOR PIER #1 (16 piles):

- pile # 1 and #2 - replaced.
- pile #13 - sound soft in east side.
- pile #16 - sounded soft near top. Drilled at 600mm under cap - OK.

BENT #8 (19 piles):

- pile #3 has a wide check in the south east face of upper section.
- pile #14 - past inspection indicated that interior rot in east face at lower bracing. Drilled in NE face in this inspection, condition of pile seems to be OK.

BENT #9 (19 piles):

- pile #13 - a wide check in mid section.
- piles #17 & #18 - a wide check in east face.

BENT #10 (19 piles):

- piles #1 and #3 not supporting caps.
- pile #2 & #19 - replaced.
- pile #4, north face - drilled at ~550mm under cap, OK.
- pile #18 - a wide check in the south face near the top.

ANCHOR PIER #2:

- top rot in 1st batter pile at N end.
- 1st pile from N on W side has 1" shell with interior rot, 12" diameter.
- 2nd batter pile from N has 1.5" shell, interior rot at lower bracing, 14" diameter.

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Item Notes:

9 . Footings/Piling

- 1st batter pile from S has interior rot at lower horizontal bracing, 12" diameter with 1.5" shell.
- 2nd pile from N on east side has 1.5" shell with interior rot at lower bracing, 13" diameter.
- bottom horizontal fence or braces were replaced while a few on upper part were replaced.

ANCHOR PIER #3:

- piles at west side #2,3,4,5,6,7 were replaced.

BENT #11(19 piles):

- pile #3, west face - 50mm shell then rot. Drilled west face at ~1.5 m. & 2 m. above lower horizontal bracing. A wide check near top of the pile.
- pile #18 and #19 were replaced.

Bent #12 (20 piles)

- pile #2 - interior rot.
- pile #19 - a wide check in the south face.

BENT #13 (19 piles):

- pile #7 has top rot.

BENT #14 (East abutment):

- 8 piles under cap plus 4 bracing piles at piles #2, #4, #6 & #8.
- a wide check in pile #8 south face.
- medium checking in piles. A wide split in front of pile #1 resulting from the embedding of the rail track spike to hold the steel cap.

11 . Bearings

- Thin plain elastomeric bearing pads were placed between bath tub girders and steel caps.
- pads were warped in areas.
- Lugs (for anchoring the girders) at ends of the girders are mostly with medium to heavy corrosion / some even popping out the surrounding concrete in the end diaphragms.
- West abutment with timber cap do not have bearing pads.
- East abutment drift pins at the ends of bath tub girders were exposed and have medium to heavy corrosion.

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Item Notes:

12 . Caps

- 255mm x 255mm steel caps were placed on east abutment and all piers & bents have medium to heavy (some with crevice) corrosion.

BENT #1 (West abutment):

- dirt against the ends of cap.

BENT #2:

- steel cap with light to medium corrosion tilts to the west by about 40mm and seems to be stabilized.

BENT #3:

- steel top cap - medium to heavy corrosion.
- perforations below girder B on east and west face of cap
- perforation below girder D on west face
- 9th cross cap - end rot started at west end.
- 11th cross cap - a wide vertical split in west end.
- west timber cap is twisting & sagging slightly and has a shake at south end with light rot.

BENT #4:

- steel top cap has medium to heavy corrosion especially on underside.

BENT #5:

- steel top cap has medium to heavy corrosion.
- large perforations below girder G
- east cap has a wide vertical check (with grass growing in the check) in the south end.
- west cap has a wide vertical checks in both north & south ends.

BENT #6:

- steel top cap has medium to heavy corrosion.
- east cap - a wide check in top south end.
- west cap - a check in bottom north end.

BENT #7:

- steel top cap has medium to heavy corrosion with some bulge below girder F.
- a small perforation in underside of steel top cap at south of cross cap #6.
- a large perforation in west side of steel top cap at north of cross cap #6.
- 1st cross cap was replaced.
- 2nd and 3rd cross caps - a wide vertical check at east end.
- 4th cross cap has end rot in the west end (about 500mm in length).
- 7th cross caps - end rot started at west end.
- west cap at south end - a wide vertical split in the middle, about 600mm long end rot.

ANCHOR PIER #1:

- double steel caps with medium to heavy corrosion especially on underside.
- top of cap is rust jacking see photo
- rot in the 2nd cap spacer plank, west end.
- 7th cross cap - wide checks in both ends.
- cross cap above the outer north piles - west end seems to be rotten. Drilled & indicating soft & wet, rot in the west end 0.5m long.

BENT #8:

- steel top cap has medium to heavy corrosion.

BENT #9:

- steel top cap has medium to heavy corrosion.
- medium checks in both timber caps.

BENT #10:

- steel top cap has medium to heavy corrosion.
- cross cap #4 has a wide check at west side.
- west cap - a wide horizontal check in the north half (west face). 40mm gap between underside of cap & top of pile #1.
- east cap - a wide check (with minor grass growing) at top at south end.

ANCHOR PIER #2:**ANCHOR PIER #3:**

- #1 cross cap - end rot in both ends.

BENT #11:

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Item Notes:

12 . Caps

- steel top cap has medium to heavy corrosion.
- a wide check in top of west lower cap with grass growing in the S. end.

BENT #12:

- steel cap has medium corrosion with a small perforation on east side under girder G&H.
- east cap - medium checks between cross caps #4 & #5 and top check at south end..

BENT #13:

- steel top cap has medium to heavy corrosion.
- east cap has a wide check in the south end.

BENT #14 (East Abutment)

- Steel top cap has medium corrosion. timber cap over piles #4 to #6 have checks

14 . Dolphins/Fenders

- dolphins are in good condition except the one on the south side of pier 3, it has top rot, grass growing in south west pile & the metal covering on the top missed south half.

Anchor Pier #2:

- sheathing planks on east side of pier.
- new planks installed on lower half
- few planks have end rot.

Anchor Pier #3:

- sheathing planks on west side of pier.
- new planks installed on lower half
- a few planks have end rot.

16 . Stringers

7 steel stringers in span 12.

- Random light to medium corrosion on flanges and bottoms of webs.
- All stringers show medium to some heavy corrosion on the top flange. However, stringer G shows heavy corrosion at pier 3 (east end).
- Stringer 12B over pier 3 has heavy corrosion on the underside of bottom flange.

17 . Girders

- Twelve 420mm x 850mm concrete bath tub girders per span except span 12 (steel stringers).

- General condition: horizontal cracks / vertical cracks(some with eff.)
 /delaminations/extensive spalls / exposed main reinforcements with light to heavy corrosion on bottoms of legs, more under wheel paths with some full span spalls (i.e. girders C, D, K & L) and at bearing locations.

- Span 3 (between bents #3 & #4) - bathtub girders A & B are sitting partially on bent #4 cap (~100mm).

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Item Notes:

- 19 . Bracing/Diaphragms
- BENT #2 - no pile bracing.
- BENT #3:
 - the diagonal brace on east side has end rot.
 - lateral bracing on west face at pile #1 has ~500mm rot at end.
 - rot in east face of lower tie at pile #7.
- BENT #4 - the diagonal brace on west side has end rot.
- BENT #5:
 - west side - the lower pile bracing is rotten in the north side and the lower end came apart from the connection.
- BENT #8 - rot in the ends of cross bracing for the lower ties between piles #3 and #4.
- ANCHOR PIER #1:
 - east side, upper pile bracing at south side - rot in south end (up side).
- BENT #9:
 - west side - top end of the top pile bracing is rotten at north end.
- ANCHOR PIER #2:
 - west side - a wide split in diagonal brace and held only by one bolt.
- SPAN 12:
 - at piers 2 and 3 - heavy corrosion on steel channel bracing. Rust through holes in some.
 - at 2 intermediate diaphragms - spot corrosion.
- BENT #12 - bottom diagonal braces on east side have end rot.
- 29 . Coating (Structure)
- paint generally faded on steel stringers in span 12 with areas of rust and light corrosion.
- 30 . Sub Deck/Cross Ties
- precast concrete panels in span 12
- leakage between stringers under curb.
 - Random delams in bays.
 - Bay 1: a light spall / exposed rebar near pier 3
 - Bay 2: a large spall / exposed rebar near pier 3
 - Bay4: a medium spall/exposed medium corroded rebar over pier 2 and near pier 3
 - Bay 6: a large spall / exposed rebar near pier 3.

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Item Notes:

31 . Wearing Surface

- concrete overlay with light scaling.
- medium transverse cracks in main span.

Span 1&2 - good condition

Span 3 - a fine longitudinal crack on W/B middle and south wheel path.

- Span 4 - a fine longitudinal crack on W/B south wheel path.
- fine transverse cracks in E/B at midspan

Span 5-9 - good condition

Span 10 - a fine longitudinal crack on W/B both wheel paths.

- Span 11 - 10mm higher than span 12.
- a fine longitudinal crack on W/B south wheel path.

- Span 12 - uneven surface between span 12 and 13.
- several medium transverse cracks across the deck at space of 2m.

Span 13 - a fine longitudinal crack on W/B south wheel path.

Spans 14 - a fine longitudinal crack on W/B south wheel path.

Span 15 - a full span long longitudinal fine crack on the middle of W/B.

Span 16 - several light spalls in the north wheel path of the east bound lane.

32 . Deck Joints

Bent #6 - random separation from armour. Completely filled with dirt.

Bent #7 - a narrow compression seal with random broken in the middle.

Anchor pier #1 - a narrow compression seal has random short cracks and was pulled away from armouring in sections.

Bent #9 - random separation from armour especially on E/B. Completely filled with dirt.

Bent #11 - random separation from armour.

Construction joints at remaining piers and abutments should be sealed

33 . Curbs/Wheelguards

- 220mm wide x 275mm high curb on roadway.
- general wear. Areas of light plow damage.
- small spalls / exposed rebars in random areas.

Span 16 - south curb at bent #13 - a medium spall in back face.

34 . Sidewalk(s)

Sidewalk width - 1550mm.

- asphalt overlay, light to medium scaling.
- wide gaps between spans over the bents (up to 100mm at bents #3 & #4, about 50 to 70mm at bent #10 with full of grass), random asphalt filler gone & grass growing in the gap.

- random wide longitudinal (e.g. spans 11 & 14) & transverse cracks.

Sidewalk approach at west end - settlement of about 40 to 60mm with grass growing along the deck end.

BRIDGE MANAGEMENT INFORMATION SYSTEM

24 Sep 2015

s.15

Condition Inspection Report

Criteria: Structure No = 00596 - Include Inspection Condition Photos = N
 - Include Additional Blank Lines for Notes = N - Show Not Applicable Components = N

Structure No: 00596 - DEWDNEY

Status: Open/In Use

Inspection Type: Routine Condition

Region: 1 - South Coast Region

District: 1 - Lower Mainland District

Contract Area: 7 - Fraser Valley CA

Item Notes:

- 35 . Railings/Parapets
- 900mm high (above the concrete curb) timber railings - 2 side & 1 top rail.
 - 140mm x 140mm posts with 2 m. post spacing. Railing size - 190mm x 65mm.
 - areas of rot in rails - north side upper & lower railing in span 12 near mid span, north side top rail at east end and lower rail near mid span in span 13.
 - 1st post in span 15 (north side) at bent 12 - rot at curb level.
- 2009
- 2 posts were replaced on span 12, northside
 - top and bottom rails were replaced at east abutment, north side
- 2012
- 3 posts are rotten. #3, 4 & 6 on Northside from East abutment.
 - bottom rail at east abutment heavily rotten.
- 37 . Drains/Pipes
- all drains clear.
- 38 . Coating (Railings)
- new paint coating.
- 39 . Signing/Lighting
- Old standard W54's at all four corners.
 - SE W54 mostly hidden by new flare
- 40 . Roadway Approaches
- WEST APPROACH:
- gap of about 30~50mm along the ballast wall.
- East bound:
- slight bump at deck end.
 - wide transverse & map cracking.
- West bound:
- ~10 to 20mm settlement on north wheel paths & 20~30mm on south wheel path.
 - wide transverse & map cracking.
- EAST APPROACH:
- new pavement
- 41 . Roadway Flares
- West approach:
- south side - old 4 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - north side - none.
- East approach:
- south side - new 6 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - north side - new 8 x 690mm CRB, with transition & bull nose. Not connected to bridge rail.
 - 1st CBR at bridge end slight loss of bearing in front corner.

Inspection Notes:**Drainage Area Description**

BACKWATER SLOUGH SLOW MOVING FRESH WATER.

Rehab Work Notes

In 2009 a major rehab work was done for replacing rotted piles, timber caps and cross caps.

BLAST AND PAINT ALL STEEL CAPS BEFORE LOSS OF SECTION IS TOO EXTREME. - REHAB ALL STRINGERS THAT HAVE DETERIOATED.

Condition Inspection Report

Criteria: Structure No = 00596 - Include Inspection Condition Photos = N
- Include Additional Blank Lines for Notes = N - Show Not Applicable Components = N

Structure No: 00596 - DEWDNEY**Status:** Open/In Use**Inspection Type:** Routine Condition**Region:** 1 - South Coast Region**District:** 1 - Lower Mainland District**Contract Area:** 7 - Fraser Valley CA**Inspection Notes:****Maintenance Work Notes**

April 28, 2015

2. Banks - trim tree at northwest corner.

6. Wing Walls - replace rotten piles.

7. Piling - replace /rehab few rotten piles.

9. Bearings - Reinforcing the lugs and draft pin with heavy corroded.

10. Caps:

-replace corroded steel caps.

- clean dirt and material off caps.

14. Girders - need engineer's review before making the repair.

16. Bracing - replace split and rotten braces.

26. Coating (Structure) - sandblast and paint steel stringers.

27. Sub Deck - clean and patch spalled areas in span 12.

28. Wearing Surface - seal cracks.

29. Deck Joints

- repair seal at anchor pier #1 and bent 7

- seal construction joints.

31. Sidewalk - Seal cracks.

32. Railings - replace broken/ rotten rails and post.

37. Approaches - seal cracks. fill approaches to level with deck.

38. Flares - consider installing flares.