Photo No.: Photos-20180515-175427.jpg
Description: Outlet

Photo No.: Photos-20180515-175445.jpg
Description: Downstream

Photo No.: Photos-20180515-175517.jpg
Description: Upstream

Photo No.: Photos-20180515-175536.jpg
Description: Inlet

Crossing ID: WC_0854

Inspection Date: May 15, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 303,522 | **Northing:** 5,930,908

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 3m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 1) 1.5 m
Erosion at Site: No
Structural Problems: None

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 100%
Culvert Slope: level and uniform
Outlet Gap: none **Embedded?:** no
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Low
Comments: Quad roads on either side of creek. This culvert is within an acreage community.

Crossing ID: WC_0866

Photo No.: Photos-20180515-171829.jpg
Description: Upstream

Photo No.: Photos-20180515-171852.jpg
Description: Inlet

Photo No.: Photos-20180515-171926.jpg
Description: Downstream

Photo No.: Photos-20180515-171945.jpg
Description: Outlet

Crossing ID: WC_0866

Inspection Date: May 09, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 635,312 | **Northing:** 5,931,396

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 2.5m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 5 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition but materials eroding from the side

Armour: Riprap
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Low
Comments: Area of secondary inflow has brought material to in front of wingwall.

Crossing ID: WC_0867

Photo No.: Photos-20180509-171805.jpg
Description: Upstream

Photo No.: Photos-20180509-171822.jpg
Description: Downstream

Photo No.: Photos-20180509-171900.jpg
Description: Outlet

Photo No.: Photos-20180509-171952.jpg
Description: Deck

Photo No.: Photos-20180509-172038.jpg
Description: Inlet

Photo No.: Photos-20180509-172106.jpg
Description: Secondary inflow

Crossing ID: WC_0867

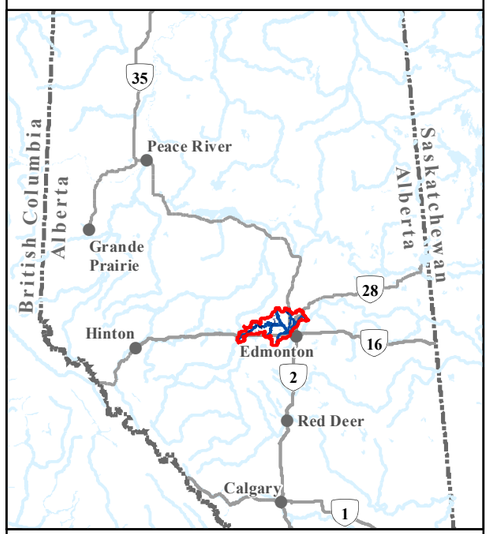
Appendix 4: Medium Risk Watercourse Crossing Overview Map and Field Sheets

NWSA
Sturgeon River Study

Water Course Crossing

Risk Assessment

- Medium



Source: Contains information licensed under the Open Government Licenses - Canada and Alberta, Parkland County, City of Edmonton, StonyPlain, Strathcona County and Leduc
Imagery acquisition date: 2001 - 2016
Coordinates system: NAD 1983 UTM Zone 11N

N W E S

1:400,000

0 5 10 15 20 km

Date: January 15, 2019

Prepared by: G. Couture

CPP ENVIRONMENTAL

Inspection Date: May 10, 2018
Watercourse Name: Riviere Qui Barre
GPS Co-ordinates:
UTM: 12 | **Easting:** 304,972 | **Northing:** 5,978,708

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 6m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 8 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Debris
Structural Problems: Yes- Road fill to bridge deck is lower than deck
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present
Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Fence in water at outlet, possibility to create blockage. This crossing was not part of the initial assessment, however it was included. Landowner near by mentioned the bridge and said it was upgraded winter 2017-2018. Capacity of bridge has been reached and difficult to determine structural integrity. Bridge deck is higher than road, causing a dangerous bump when driving over the bridge.

Crossing ID: WC_000a

Photo No.: Photos-20180508-182539.jpg
Description: Upstream

Photo No.: Photos-20180508-182524.jpg
Description: Inlet

Photo No.: Photos-20180508-182600.jpg
Description: Deck

Photo No.: Photos-20180508-182656.jpg
Description: Downstream

Photo No.: Photos-20180508-182809.jpg
Description: road and bridge deck not even

Photo No.: Photos-20180508-182614.jpg
Description:Outlet

Crossing ID: WC_000a

Inspection Date: May 07, 2018
Watercourse Name: Little Egg Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 320,136 | **Northing:** 5,981,337

Stream Classification: Non-Fluvial
Bankfull Width: 3m (Estimated to Nearest Metre)
Crossing Type: Culvert - Multiple
Culvert(s) Diameter: 1) 0.82 m
2) 0.74 m
Erosion at Site: No

Greater than 10% of the culvert diameter blocked by debris?: Yes
Substrate in Culvert?: Unknown **Substrate Type:** Unknown
For what length of culvert?: unknown
What proportion has backwater?: 25%
Culvert Slope: Level and uniform
Outlet Gap: None **Embedded?:** No
Pool Depth: 0.68m and 0.81m **Scour pool apparent?:** Yes

Structural Problems: Yes, culverts are undersized and damaged.

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: cultivated field "upstream" had serious flooding this year (as per land owner said). there was water vortices's trying to drain water from the area. landowner said a third or larger culverts should be there. 2/4 culverts damaged. Vegetation at inlet causing blockage. No defined channel upstream of culverts. Area seems more of a storm water catchment.

Crossing ID: WC_0001

Photo No.: Photos-20180507-154013.jpg
Description: Downstream

Photo No.: Photos-20180507-154110.jpg
Description: Outlet - West

Photo No.: Photos-20180507-154146.jpg
Description: Outlet East

Photo No.: Photos-20180507-154340.jpg
Description: Upstream

Photo No.: Photos-20180507-154401.jpg
Description: Inlet

Crossing ID: WC_0001

Inspection Date: May 08, 2018
Watercourse Name: Riviere Qui Barre
GPS Co-ordinates:
UTM: 12 | **Easting:** 304,018 | **Northing:** 5,981,940

Stream Classification: Non-Fluvial (Permanent - Small)
Bankfull Width: 1.5m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single **Culvert(s) Diameter:** 1.19 m
Erosion at Site Potential

Erosion Location (Inlet or Outlet): Both

Erosion Source: Bank Slump,Ditch Gully
Erosion Extent: Low **Total Erosion Area:** 3 m^2

Greater than 10% of the culvert diameter blocked by debris?: Yes
Substrate in Culvert?: Unknown
What proportion has backwater?: 25%
Culvert Slope: level and uniform
Outlet Gap: None **Embedded?:** No
Pool Depth: None **Scour pool apparent?:** No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: lots of slash in tributary channel. Blockage caused by organic debris.

Photo No.: Photos-20180508-162612.jpg
Description: Downstream

Photo No.: Photos-20180508-162630.jpg
Description: Outlet

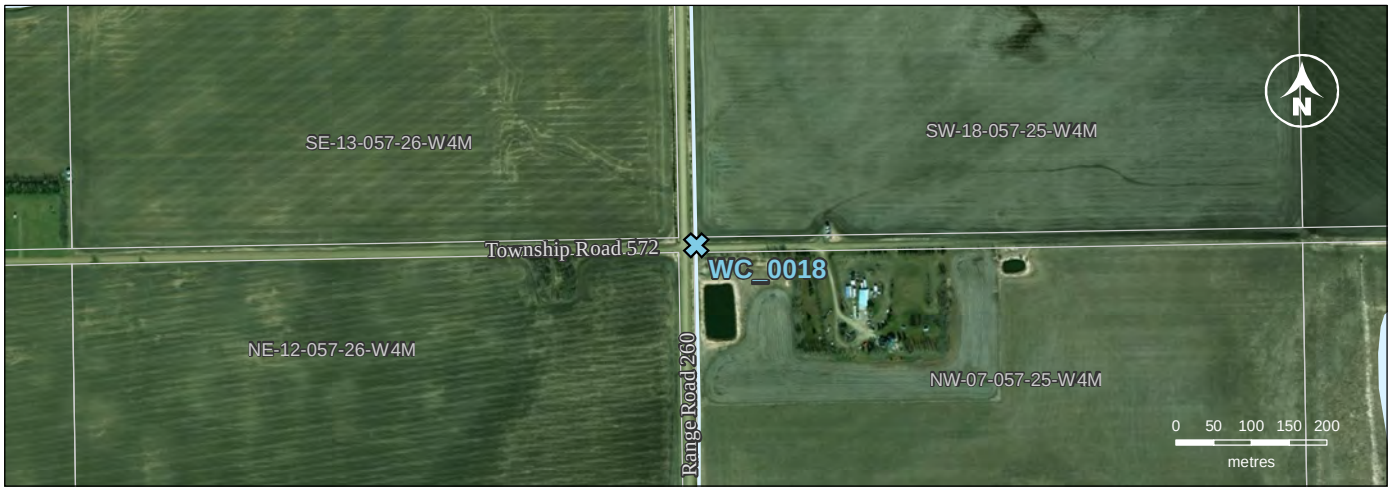
Photo No.: Photos-20180508-162642.jpg
Description: Erosion

Photo No.: Photos-20180508-162720.jpg
Description: Upstream

Photo No.: Photos-20180508-162755.jpg
Description: Inlet

Photo No.: Photos-20180508-162828.jpg
Description: Blockage

Crossing ID: WC_0002



Inspection Date: May 07, 2018
Watercourse Name: Little Egg
GPS Co-ordinates:
UTM: 12 | **Easting:** 321,443 | **Northing:** 5,978,042

Stream Classification: Non-Fluvial, small permanent
Bankfull Width: 4m (Estimated to Nearest Metre)
Crossing Type: Culvert - Multiple
Culvert(s) Diameter: 1) 1.15 m
2) 1.73 m
Erosion at Site: No
Structural Problems: Yes, damaged and undersized culvert

Greater than 10% of the culvert diameter blocked by debris?: Yes
Substrate in Culvert?: Yes **Substrate Type:** gravel and cement
For what length of culvert?: unknown
What proportion has backwater?: 25%
Culvert Slope: level and uniform
Outlet Gap: none **Embedded?:** No
Pool Depth: 0.39 m **Scour pool apparent?:** No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Culvert 1 (N/S along road): 10% blockage by fence post in water collecting veg, outlet pool 0.53m. Culvert 2 (diagonal): cement bottom at outlet, pool at outlet is formed by cement 0.25m. Damage on this culvert. Very close to gravel road. Average outlet pool depth: 0.39m.

Crossing ID: WC_0018

Photo No.: Photos-20180507-162505.jpg
Description: Culvert 2 - Downstream

Photo No.: Photos-20180507-162522.jpg
Description: Culvert 2 - Outlet

Photo No.: Photos-20180507-162552.jpg
Description: Culvert 2 - Cement bottom with pool

Photo No.: Photos-20180507-162701.jpg
Description: Culvert 1 - Downstream

Photo No.: Photos-20180507-162718.jpg
Description: Culvert 1 - Outlet

Photo No.: Photos-20180507-162809.jpg
Description: Culvert 1 and 2 - Upstream

Crossing ID: WC_0018

Photo No.: Photos-20180507-162857.jpg
Description: Culvert 1 - Inlet

Photo No.: Photos-20180507-162914.jpg
Description: Culvert 2 - Inlet

Photo No.: Photos-20180507-162947.jpg
Description: Culvert 1 - Blockage In

Inspection Date: May 04, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 348,794 | **Northing:** 5,969,157

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 18m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Potential **Erosion Location (Inlet or Outlet):** Outlet
Erosion Source: Other - cattle pen
Erosion Extent: Medium **Total Erosion Area:** 100 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 25 m
Deck Width (Number of Lanes): 1
Decking Material: Other - Steel with timber planks
Decking Pattern: Open
Curb Type: None - There is no curb, or the curb pattern has openings
Road Surface Material: Gravel
Abutment Type: Treated Lumber
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%

Structural Problems: None
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Cattle access created erosion along riparian area of river. This area is now non vegetated.

Photo No.: Photos-20180504-163047.jpg
Description: Deck

Photo No.: Photos-20180504-163114.jpg
Description: Downstream

Photo No.: Photos-20180504-163203.jpg
Description: Upstream

Photo No.: Photos-20180504-164218.jpg
Description: Inlet

Photo No.: Photos-20180504-164511.jpg
Description: Outlet

Photo No.: Photos-20180504-164539.jpg
Description: Erosion (Cattle Pen)

Crossing ID: WC_0075

Inspection Date: May 04, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 347,232 | **Northing:** 5,968,217

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 17m (Estimated to Nearest Metre)
Crossing Type: Other - concrete culvert - outlet
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Outlet
Erosion Source: Fill Slope
Erosion Extent: Low **Total Erosion Area:** 400 m^2

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 100%
Culvert Slope: level and uniform
Outlet Gap: none
Pool Depth: none
Embedded?: Unknown
Scour pool apparent?: No

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Fill slope erosion is high.

Crossing ID: WC_0078

Photo No.: Photos-20180504-170033.jpg
Description: Outlet

Photo No.: Photos-20180504-170257.jpg
Description: Downstream

Photo No.: Photos-20180504-170322.jpg
Description: Erosion

Crossing ID: WC_0078

Inspection Date: May 04, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 347,216 | **Northing:** 5,968,207

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 12m (Estimated to Nearest Metre)
Crossing Type: Other - concrete culvert
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Inlet
Erosion Source: Bank Slump,Fill Slope
Erosion Extent: Low **Total Erosion Area:** 15 m^2

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 100%
Culvert Slope: Level and uniform
Outlet Gap: none **Embedded?:** Unknown
Pool Depth: none **Scour pool apparent?:** none

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments:

Crossing ID: WC_0083

Photo No.: Photos-20180504-171438.jpg
Description: Inlet

Photo No.: Photos-20180504-171521.jpg
Description: Upstream

Photo No.: Photos-20180504-171604.jpg
Description: Erosion Bank Slump

Crossing ID: WC_0083

Inspection Date: May 08, 2018
Watercourse Name: Riviere Qui Barre
GPS Co-ordinates:
UTM: 12 | **Easting:** 306,503 | **Northing:** 5,971,467

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Active **Erosion Location (Inlet or Outlet):** Both

Erosion Source: Ditch Gully,Other (cattle access)
Erosion Extent: High **Total Erosion Area:** 8 m^2

Most Common Bridge Substructure Material: Concrete
Total Deck Length: 6 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: None
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: No- in good condition but materials eroding from the side
Armour: None
Opening Blockage: 0%
Cause of blockage: Debris
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: bridge is at its capacity. Structural integrity is hard to determine. There is a fence in the water. Biggest concern is the unrestricted access that cattle have to the water. The channel banks are eroded and flattened out cattle prints. Erosional evidence of soil creating a peninsula in water.

Crossing ID: WC_0082

Photo No.: Photos-20180508-184817.jpg
Description: Inlet

Photo No.: Photos-20180508-184838.jpg
Description: Upstream

Photo No.: Photos-20180508-184851.jpg
Description: Erosion Ditch Slumping

Photo No.: Photos-20180508-184908.jpg
Description: Deck

Photo No.: Photos-20180508-184926.jpg
Description: Downstream

Photo No.: Photos-20180508-184958.jpg
Description: Outlet

Crossing ID: WC_0082

Photo No.: Photos-20180508-185041.jpg
Description: Erosion - Cattle Access

Inspection Date: May 07, 2018
Watercourse Name: Little Egg Creek
GPS Co-ordinates:

UTM: 12 | **Easting:** 327,044 | **Northing:** 5,968,112

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 8m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single **Culvert(s) Diameter:** 2.29m
Erosion at Site: No
Structural Problems: Yes, undersized culvert

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 75%
Culvert Slope: Level and Uniform
Outlet Gap: None **Embedded?:** No
Pool Depth: None **Scour pool apparent?:** No

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Inlet bankfull width > culvert inlet, thereby creating back pooling.

Crossing ID: WC_0091

Photo No.: Photos-20180507-181535.jpg
Description: Downstream

Photo No.: Photos-20180507-181553.jpg
Description: Outlet

Photo No.: Photos-20180507-181637.jpg
Description: Upstream

Photo No.: Photos-20180507-181730.jpg
Description: Inlet

Crossing ID: WC_0091

Inspection Date: May 08, 2018
Watercourse Name: Riviere Qui Barre
GPS Co-ordinates:
UTM: 12 | **Easting:** 306,065 | **Northing:** 5,968,897

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 7m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Potential **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Bank Slump,Other (wing wall collapsing
Erosion Extent: Low **Total Erosion Area:** 2 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 5 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: No, missing abutment
Wingwall Functioning?: No, damage to wingwall
Armour: None

Structural Problems: Damaged Guardrail, Other - large spaces between pavement deck slates, missing abutment piling, wingwall not secure
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Damaged, sign is either down or needs to be replaced
Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Capacity of bridge has been reached and difficult to determine integrity.

Crossing ID: WC_0110

NSWA Sturgeon River Watercourse Assessment

Photo No.: Photos-20180508-190411.jpg
Description: Outlet

Photo No.: Photos-20180508-190423.jpg
Description: Downstream

Photo No.: Photos-20180508-190503.jpg
Description: Deck

Photo No.: Photos-20180508-190519.jpg
Description: Upstream

Photo No.: Photos-20180508-190540.jpg
Description: Inlet

Photo No.: Photos-20180508-190608.jpg
Description: Wing Wall Damage

Crossing ID: WC_0110

Photo No.: Photos-20180508-190647.jpg
Description: abutment Wall Damage

Crossing ID: WC_0110

Inspection Date: May 04, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 344,138 | **Northing:** 5,965,865

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 15m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope
Erosion Extent: medium **Total Erosion Area:** 10 m^2

Most Common Bridge Substructure Material: Concrete

Total Deck Length: 18 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Concrete Blocks
Abutment Functioning?: No - falling apart and/or materials eroding from underneath
Wingwall Functioning?: None
Armour: Other - concrete blocks with some large bouldered riprap
Opening Blockage: 0%

Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: No, sign is not present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: concrete armour blocks are only on one side. Very large boulders used for rip rap.

Crossing ID: WC_0111

NSWA Sturgeon River Watercourse Assessment

Photo No.: Photos-20180504-175134.jpg
Description: Deck

Photo No.: Photos-20180504-175857.jpg
Description: Downstream

Photo No.: Photos-20180504-175921.jpg
Description: Outlet

Photo No.: Photos-20180504-180042.jpg
Description: Inlet

Photo No.: Photos-20180504-180118.jpg
Description: Upstream

Photo No.: Photos-20180504-180131.jpg
Description: Erosion

Crossing ID: WC_0111

Photo No.: Photos-20180504-180156.jpg
Description: Erosion

Inspection Date: May 07, 2018
Watercourse Name: Little Egg Creek
GPS Co-ordinates:

UTM: 12 | **Easting:** 327,492 | **Northing:** 5,965,561

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 10m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 4 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: No - falling apart and/or materials eroding from underneath
Armour: None
Opening Blockage: 0%

Structural Problems: V -Vegetation protruding
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Bridge is as wide as stream. Stream is in contact with treated lumber abutments and treated lumber wingwalls.

Photo No.: Photos-20180507-191723.jpg
Description: Upstream

Photo No.: Photos-20180507-191740.jpg
Description: Inlet

Photo No.: Photos-20180507-191846.jpg
Description: Downstream

Photo No.: Photos-20180507-191928.jpg Description: Outlet & Wingwall condition-materials falling

Photo No.: Photos-20180507-192347.jpg
Description: City Drainage

Crossing ID: WC_0119

Inspection Date: May 07, 2018
Watercourse Name: Little Egg Creek
GPS Cordinates:

UTM: 12 | **Easting:** 329,119 | **Northing:** 5,965,205

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 14m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single **Culvert diameter:** 1.75m
Erosion at Site: Yes
Erosion Location (Inlet or Outlet): Inlet
Erosion Extent: Low
Erosion Source: Bank Slump **Total Erosion Area:** 20 m^2
Structural Problems: Yes, undersized culvert

Greater than 10% of the culvert diameter blocked by debris?: No

Substrate in Culvert?: unknown
Substrate Type: unknown
For what length of culvert?: unknown
What proportion has backwater?: 75%
Culvert Slope: Level and Uniform
Embedded?: no
Outlet Gap: none
Scour pool apparent?: No
Pool Depth: none
Other: Inlet bankfull width > culvert inlet.

Fish Passage Assessment: No Concerns

Emergency Repair Required?: No

Overall Risk: Medium

Comments: Erosion is biggest concern

Crossing ID: WC_0130

Photo No.: Photos-20180507-193305.jpg
Description: Downstream

Photo No.: Photos-20180507-193318.jpg
Description: Outlet

Photo No.: Photos-20180507-193555.jpg
Description: Upstream

Photo No.: Photos-20180507-193625.jpg
Description: Inlet

Crossing ID: WC_0130

Inspection Date: May 04, 2018
Watercourse Name: Sturgeon River
GPS Cordinates:
UTM: 12 | **Easting:** 353,533 | **Northing:** 5,962,137

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 14m (Measured)
Crossing Type: Bridge - Permanent
Erosion at Site: Active **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Ditch Gully,Bank Slump
Erosion Extent: High **Total Erosion Area:** 10 m^2

Most Common Bridge Substructure Material: Concrete
Total Deck Length: 20 m
Deck Width (Number of Lanes): 2
Decking Material: Other - pavement
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Concrete Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Other - concrete
Opening Blockage: 0%

Structural Problems: Yes, DG
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Heavy Erosion

Crossing ID: WC_0132

Photo No.: Photos-20180504-152758.jpg
Description: Downstream

Photo No.: Photos-20180504-152905.jpg
Description: Outlet

Photo No.: Photos-20180504-153124.jpg
Description: Erosion

Photo No.: Photos-20180504-153148.jpg
Description: Erosion

Photo No.: Photos-20180504-153310.jpg
Description: Upstream

Photo No.: Photos-20180504-153340.jpg
Description: Inlet

Crossing ID: WC_0132

Inspection Date: May 07, 2018
Watercourse Name: Little Egg Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 329,749 | **Northing:** 5,964,774

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 12m (Estimated to Nearest Metre)
Crossing Type: Culvert - Multiple
Culvert(s) Diameter: 1) 4.6 m
2) 4.6 m
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Inlet
Erosion Source: Bank Slump
Erosion Extent: High **Total Erosion Area:** 5 m^2

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: No **Substrate Type:** None
For what length of culvert?: None
What proportion has backwater?: 100%
Culvert Slope: Level and Uniform
Embedded?: No
Outlet Gap: none
Pool Depth: none **Scour pool apparent?:** No
Structural Problems: No

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: beaver footprints in mud.

Crossing ID: WC_0140

Photo No.: Photos-20180507-194508.jpg
Description: Bank slump in culvert

Photo No.: Photos-20180507-194845.jpg
Description: Upstream

Photo No.: Photos-20180507-194910.jpg
Description: Inlet

Photo No.: Photos-20180507-194934.jpg
Description: Sediment in

Photo No.: Photos-20180507-195113.jpg
Description: Downstream

Photo No.: Photos-20180507-195146.jpg
Description: Outlet

Crossing ID: WC_0140

Inspection Date: May 07, 2018
Watercourse Name: Little Egg Creek
GPS Co-ordinates:

UTM: 12 | **Easting:** 330,726 | **Northing:** 5,964,712

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 10m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 7 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - but one piling (middle south) is pulling away from abutment wall
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 25% **Cause of Blockage:** Gabions placed in stream

Structural Problems: one piling (middle south) is pulling away from abutment wall
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Gabions located approximately 10m upstream of bridge is causing the stream to bottleneck creating higher velocity of water and blockage concerns for fish to travel upstream. The middle log piling along the southern abutment wall is pulling away from the wall.

Crossing ID: WC_0141

Photo No.: Photos-20180507-200512.jpg
Description: Upstream

Photo No.: Photos-20180507-200523.jpg
Description: Gabion

Photo No.: Photos-20180507-200601.jpg
Description: Gabion

Photo No.: Photos-20180507-200610.jpg
Description: Inlet

Photo No.: Photos-20180507-200632.jpg
Description: Downstream

Photo No.: Photos-20180507-200715.jpg
Description: Outlet

Crossing ID: WC_0141

Inspection Date: May 04, 2018
Watercourse Name: Sturgeon River

UTM: 12 | **Easting:** 340,450 | **Northing:** 5,961,909

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 18m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope
Erosion Extent: Low **Total Erosion Area:** 20 m^2

Most Common Bridge Substructure Material: Concrete
Total Deck Length: 21 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Concrete Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%

Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: No Armour to mitigate fill slope erosion.

Crossing ID: WC_0165

Photo No.: Photos-20180504-182125.jpg
Description: Deck

Photo No.: Photos-20180504-182803.jpg
Description: Upstream

Photo No.: Photos-20180504-182820.jpg
Description: Inlet

Photo No.: Photos-20180504-182858.jpg
Description: Downstream

Photo No.: Photos-20180504-182950.jpg
Description: Outlet

Crossing ID: WC_0165

Inspection Date: May 07, 2018
Watercourse Name: Carrot Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 326,176 | **Northing:** 5,961,665

Stream Classification: Fluvial (Intermittent)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Erosion at Site: Potential **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Ditch Gully
Erosion Extent: Low **Total Erosion Area:** 10 m^2

Culvert(s) Diameter: 0.9 m

Greater than 10% of the culvert diameter blocked by debris?: No
Structural Problems: None

Substrate in Culvert?: Yes **Substrate Type:** Gravel,Sand,Other
For what length of culvert?: 25%
What proportion has backwater?: 0%
Culvert Slope: Level and Uniform
Outlet Gap: None
Pool Depth: None

Embedded?: No
Scour pool apparent?: No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Culvert directly south of South Glenn sub development. Man made storm water pond directly north through a fence. 2 other points located within housing development wc_0181 and wc_0181. There was no water and houses in area. Fault on old data. Area is headwaters for Carrot Creek. Channel has been dried up.

Crossing ID: WC_0184

Photo No.: Photos-20180507-211244.jpg
Description: Upstream

Photo No.: Photos-20180507-211324.jpg
Description: Inlet

Photo No.: Photos-20180507-211348.jpg
Description: Outlet

Photo No.: Photos-20180507-211359.jpg
Description: Downstream

Photo No.: Photos-20180507-211515.jpg
Description: 32m from culvert is defined channel

Crossing ID: WC_0184

Inspection Date: May 08, 2018
Watercourse Name: Riviere Qui Barre
GPS Co-ordinates:
UTM: 12 | **Easting:** 308,607 | **Northing:** 5,962,319

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 6m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 11 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: No - not good condition and but no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Riprap
Opening Blockage: 10%
Cause of blockage: Debris
Structural Problems: Yes, abutments are rotting
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present
Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: The abutments are looking like they need to be replaced. Looks like some work has been done but nothing thats meant to last for a long time. Since the abutments pilings are in the water, there are logs starting to collect creating blockages.

Photo No.: Photos-20180508-201729.jpg
Description: Inlet

Photo No.: Photos-20180508-201808.jpg
Description: Upstream

Photo No.: Photos-20180508-201834.jpg
Description: Deck

Photo No.: Photos-20180508-201846.jpg
Description: Downstream

Photo No.: Photos-20180508-201911.jpg
Description: Outlet

Crossing ID: WC_0199

Inspection Date: May 14, 2018
Watercourse Name: Toad Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 684,519 | **Northing:** 5,961,499

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 10m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 7 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - but stream is in contact

Armour: None
Opening Blockage: 0%

Structural Problems: Yes, wingwall function

Other: Wetted width flooding slightly past wingwall, potential safety issues.
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Wetted width is wider than bridge and is past the wingwalls. Deceased beaver near bridge, no visible dam or lodge.

Crossing ID: WC_0201

Photo No.: Photos-20180514-181259.jpg
Description: Upstream

Photo No.: Photos-20180514-181339.jpg
Description: Inlet

Photo No.: Photos-20180514-181412.jpg
Description: Deck

Photo No.: Photos-20180514-181439.jpg
Description: Downstream

Photo No.: Photos-20180514-181537.jpg
Description: Outlet

Crossing ID: WC_0201

Inspection Date: May 04, 2018
Watercourse Name: Little Egg Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 333,618 | **Northing:** 5,958,308

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 1.5m (Measured)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 3m
Erosion at Site: No
Structural Problems: None

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown
Substrate Type: Unknown
For what length of culvert?: Unknown
What proportion has backwater?: 100%
Culvert Slope: Level and uniform
Outlet Gap: None
Embedded?: No
Pool Depth: None
Scour pool apparent?: None

Fish Passage Assessment: Some Concerns

Emergency Repair Required?: No

Overall Risk: Medium
Comments:

Fish passage has some concerns upstream due to the steep grade caused by instream rip rap, which creates turbulence and difficulties for weak swimmers. Maintenance is recommended to remove the instream rip rap to the channel bank.

Crossing ID: WC_0218

Photo No.: Photos-20180504-203044.jpg
Description: Upstream

Photo No.: Photos-20180504-203131.jpg
Description: Inlet

Photo No.: Photos-20180504-203452.jpg
Description: Downstream

Photo No.: Photos-20180504-203645.jpg
Description: Outlet

Crossing ID: WC_0218

Inspection Date: May 04, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 337,417 | **Northing:** 5,958,021

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 15m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope
Erosion Extent: High **Total Erosion Area:** 8 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 16 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Damaged, sign is either down or needs to be replaced
Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: No armour present. High erosion on west fill slope. Abutment wall piling appearing. No materials eroding from under abutment wall but fill slope is eroding into stream. Abutment pilings in water with treated lumber walls are in stream.

Crossing ID: WC_0226

Photo No.: Photos-20180504-192500.jpg
Description: Downstream

Photo No.: Photos-20180504-192539.jpg
Description: Deck

Photo No.: Photos-20180504-192613.jpg
Description: Outlet

Photo No.: Photos-20180504-192735.jpg
Description: Inlet

Photo No.: Photos-20180504-192759.jpg
Description: Upstream

Photo No.: Photos-20180504-193350.jpg
Description: Erosion West

Crossing ID: WC_0226

Inspection Date: May 18, 2018
Watercourse Name: Carrot Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 325,748 | **Northing:** 5,958,431

Stream Classification: Fluvial (Permanent - Small)
Bankful Width: 4m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Road Surface,Bridge Deck
Erosion Extent: High **Total Erosion Area:** 4 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 4 m
Deck Width (Number of Lanes): 1
Decking Material: Wood
Decking Pattern: Open
Curb Type: None - There is no curb, or the curb pattern has openings
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present
Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Abutment pilings and walls are in contact with the stream. No armour present. Road surface is collecting in piling instream. On the north side of the bridge, a small drainage ditch has been dug to channelize ditch water. There is no armour to protect stream from earth movement from dug channel.

Crossing ID: WC_0231

Photo No.: Photos-20180518-151328.jpg
Description: Deck

Photo No.: Photos-20180518-151350.jpg
Description: Upstream

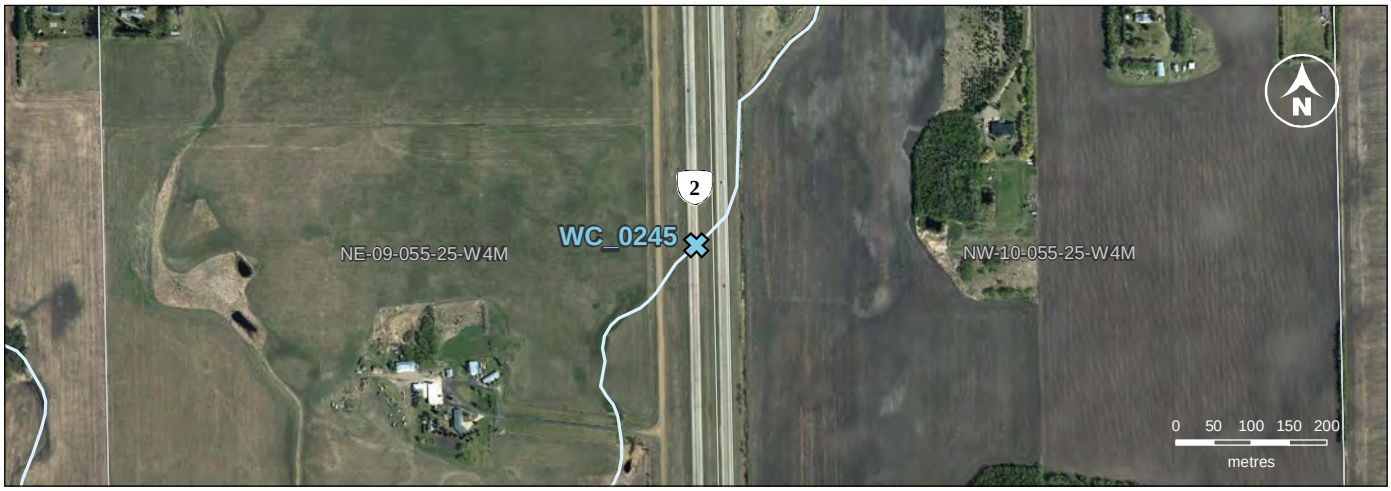
Photo No.: Photos-20180518-151411.jpg
Description: Downstream

Photo No.: Photos-20180518-151506.jpg
Description: Outlet

Photo No.: Photos-20180518-151547.jpg
Description: Sediment buildup

Photo No.: Photos-20180518-151658.jpg
Description: Ditch drainage

Crossing ID: WC_0231



Inspection Date: May 18, 2018
Watercourse Name: Carrot Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 325,544 | **Northing:** 5,958,025

Stream Classification: Ephemeral
Bankfull Width: 1m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single **Culvert(s) Diameter:** 1) 0.5 m
Erosion at Site: No
Structural Problems: Others- culvert not utilized for stream connectivity.

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:**unknown
For what length of culvert?: unknown
What proportion has backwater?: 0%
Culvert Slope: Level and Uniform
Outlet Gap: none **Embedded?:** No
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Unsure if this is a true Carrot Creek crossing. This culvert is on the west side of highway 2 between the southbound lane and a side road. Carrot Creek ran along the side of the northbound lane. This could of been the historical route. Hard to determine is this is true. It is believed this culvert is utilized for minimal storm water passage under the road. No water at time of assessment. Last years cattails still standing, no signs of regeneration. Ground is soft. Couple of cement slabs on top of culvert. Some fish passage concerns due to the lack of connectivity of stream to culvert. Unable to safely view the culverts inlet, which was between northbound and southbound lanes of Highway 2.

Crossing ID: WC_0245

Photo No.: Photos-20180518-153036.jpg
Description: Downstream

Photo No.: Photos-20180518-153051.jpg
Description: Outlet

Photo No.: Photos-20180518-153329.jpg
Description: Outlet

Crossing ID: WC_0245

Inspection Date: May 08, 2018
Watercourse Name: Riviere Qui Barre
GPS Co-ordinates:
UTM: 12 | **Easting:** 310,688 | **Northing:** 5,958,998

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Concrete
Total Deck Length: 12 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: None
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Riprap
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Damaged, sign is either down or needs to be replaced

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: 1 of 4 grader markers are present

Crossing ID: WC_0256

Photo No.: Photos-20180508-205510.jpg
Description: Upstream

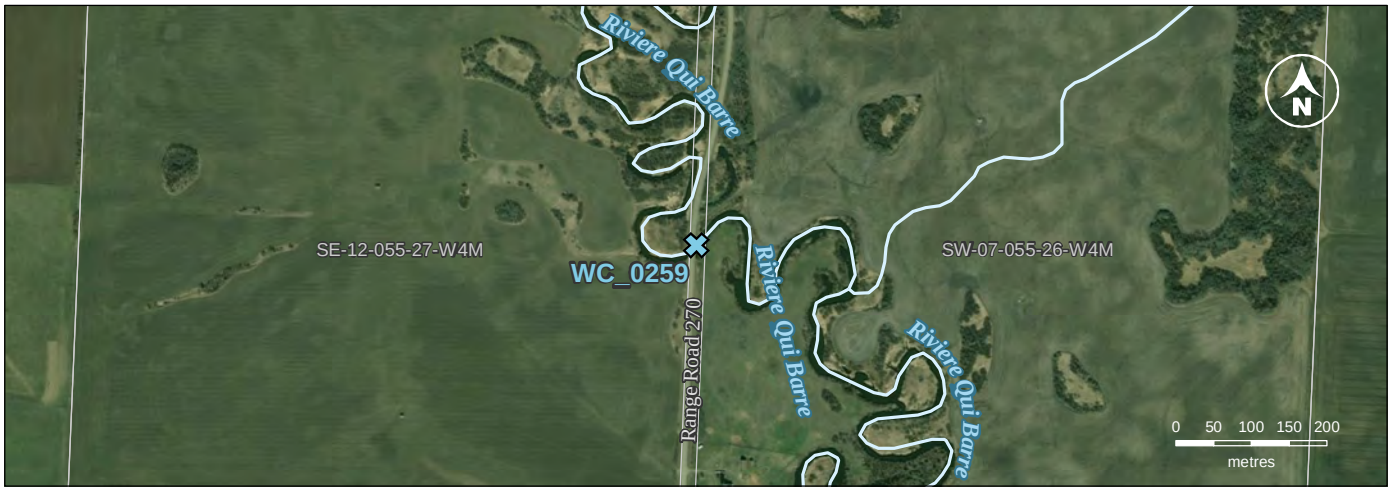
Photo No.: Photos-20180508-205555.jpg
Description: Inlet

Photo No.: Photos-20180508-205629.jpg
Description: Deck

Photo No.: Photos-20180508-205700.jpg
Description: Outlet

Photo No.: Photos-20180508-205734.jpg
Description: Downstream

Crossing ID: WC_0256



Inspection Date: May 08, 2018
Watercourse Name: Riviere Qui Barre
GPS Co-ordinates:
UTM: 12 | **Easting:** 310,820 | **Northing:** 5,957,722

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 8m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 7 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: None, no pilings only timber planks on walls
Abutment Functioning?: Yes
Wingwall Functioning?: Yes, but vegetation is moving around the wingwall
Armour: None
Opening Blockage: 0%

Structural Problems: Yes, wingwalls are not containing vegetation and the abutment walls are in contact with the stream, leaving integrity unknown
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Larger wingwalls present, however stream angles to flow under bridge. The south eastern wingwall will see the most pressure from this. Vegetation is encroaching around this wall.

Photo No.: Photos-20180508-210709.jpg
Description: Outlet

Photo No.: Photos-20180508-210730.jpg
Description: Deck

Photo No.: Photos-20180508-210757.jpg
Description: Downstream

Photo No.: Photos-20180508-210817.jpg
Description: Upstream

Photo No.: Photos-20180508-210839.jpg
Description: Inlet

Crossing ID: WC_0259

Inspection Date: May 14, 2018
Watercourse Name: Toad Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 687,862 | **Northing:** 5,959,626

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 6m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 1) 1.9 m
Erosion at Site: No
Structural Problems: Yes, undersized culvert.

Greater than 10% of the culvert diameter blocked by debris?: Yes
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: <25%
Culvert Slope: Level and Uniform
Outlet Gap: 0.1 m **Embedded?:** no
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: Serious Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: There is a beaver dam blocking 95% of water at the inlet. Large back pool formed. Pool is stilling 0.5 meters higher than culvert. Serious fish passage concerns due to the lack of water downstream and through the culvert. Risk of flooding downstream and along road if the dam breaks.

Crossing ID: WC_0260

Photo No.: Photos-20180514-184735.jpg
Description: Upstream

Photo No.: Photos-20180514-184820.jpg
Description: Inlet

Photo No.: Photos-20180514-184947.jpg
Description: Beaver dam

Photo No.: Photos-20180514-185019.jpg
Description: Downstream

Photo No.: Photos-20180514-185103.jpg
Description: Outlet

Crossing ID: WC_0260

Inspection Date: May 14, 2018
Watercourse Name: Toad Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 690,534 | **Northing:** 5,958,992

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 9 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Steel Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: No - falling apart

Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: Yes, wingwalls are falling apart and allowing vegetation to protrude
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: steel abutments redone, with lumber behind for abutment walls. Wingwalls have vegetation wrapping around. Fence in stream could create blockage issues in future. Capacity of bridge has been reached and difficult to determine integrity.

Crossing ID: WC_0265

NSWA Sturgeon River Watercourse Assessment

Photo No.: Photos-20180514-191537.jpg
Description: Downstream

Photo No.: Photos-20180514-191550.jpg
Description: Upstream

Photo No.: Photos-20180514-191655.jpg
Description: Inlet

Photo No.: Photos-20180514-191736.jpg
Description: Deck

Photo No.: Photos-20180514-191757.jpg
Description: Outlet

Crossing ID: WC_0265

Inspection Date: May 14, 2018
Watercourse Name: Toad Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 690,531 | **Northing:** 5,958,888

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single **Culvert(s) Diameter:** 1) 0.5 m
Erosion at Site: No
Structural Problems: Yes, culvert is undersized.

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 100%
Culvert Slope: Level and Uniform
Outlet Gap: none **Embedded?:** unknown
Pool Depth: none **Scour pool apparent?:** unknown

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Low laying area with flooding, riparian areas and large grassy wetlands. Road where culvert was, very low. Road is probably at risk for flooding. Could not find the outlet of culvert, completely submerged. Trumpeter swans noted utilizing habitat. GPS location was incorrect, actually location was 25m south.

Crossing ID: WC_0276

Photo No.: Photos-20180514-193339.jpg
Description: Upstream

Photo No.: Photos-20180514-193351.jpg
Description: Inlet

Photo No.: Photos-20180514-193407.jpg
Description: Outlet / Downstream

Photo No.: Photos-20180514-193507.jpg
Description: Swans

Inspection Date: May 14, 2018
Watercourse Name: Toad Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 690,554 | **Northing:** 5,958,824

Stream Classification: Non-Fluvial
Bankfull Width: 1m (Measured)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 1) 0.5 m
Erosion at Site: No
Structural Problems: None

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 0%
Culvert Slope: Level and Uniform
Outlet Gap: none **Embedded?:** No
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: Serious Concerns
Emergency Repair Required?: No

Overall Risk: Medium
Comments: Greater area resembles a flood plain. Large wetland area near by. Crossing is 100m southeast of GPS location initially provided. Has the area changed or directly of flow changed?

Crossing ID: WC_0278

Photo No.: Photos-20180514-192807.jpg
Description: Upstream

Photo No.: Photos-20180514-192827.jpg
Description: Inlet

Photo No.: Photos-20180514-192850.jpg
Description: Downstream

Photo No.: Photos-20180514-192901.jpg
Description: Outlet

Crossing ID: WC_0278

Inspection Date: May 14, 2018
Watercourse Name: Toad Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 690,983 | **Northing:** 5,957,546

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 6m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope
Erosion Extent: Low **Total Erosion Area:** 16 m^2

Most Common Bridge Substructure Material: Steel
Total Deck Length: 17 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Non vegetated fill slopes. Erosional concern.

Crossing ID: WC_0307

Photo No.: Photos-20180514-195247.jpg
Description: Upstream

Photo No.: Photos-20180514-195302.jpg
Description: Inlet

Photo No.: Photos-20180514-195523.jpg
Description: Erosion

Photo No.: Photos-20180514-195542.jpg
Description: Downstream

Photo No.: Photos-20180514-195555.jpg
Description: Outlet

Crossing ID: WC_0307

Inspection Date: May 11, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:

UTM: 11 | **Easting:** 679,784 | **Northing:** 5,957,391

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 8m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Potential **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope
Erosion Extent: Low **Total Erosion Area:** 6 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 12 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: Yes, northern abutment wall looks like its angling inwards
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Damaged, sign is either down or needs to be replaced

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Erosional concerns with fill slope. Abutment wall on the north side looks like its angling in.

Photo No.: Photos-20180511-192209.jpg
Description: Deck

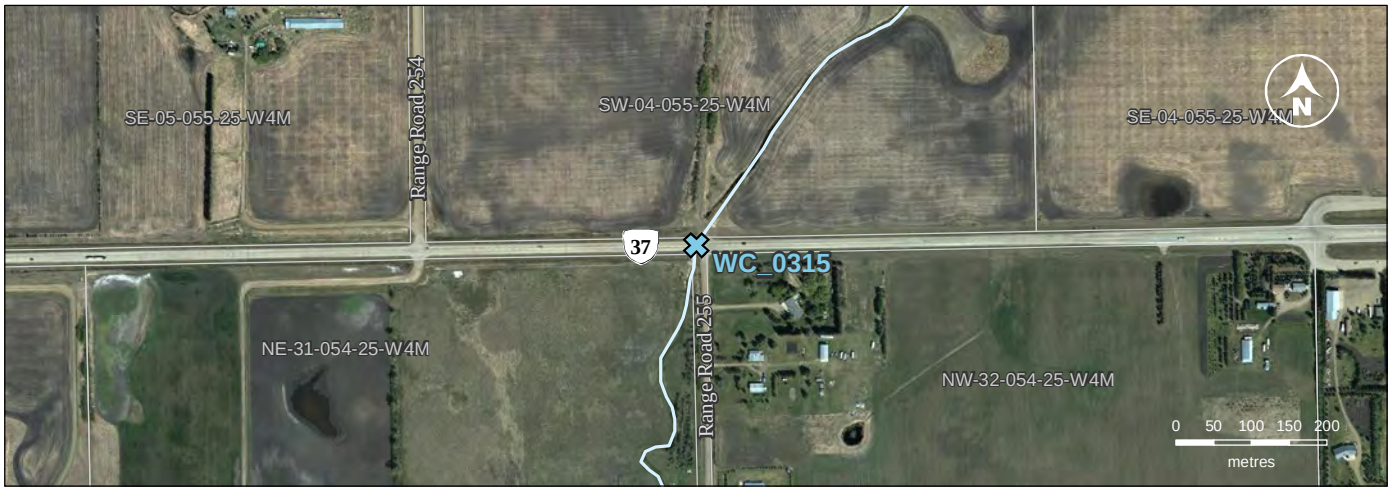
Photo No.: Photos-20180511-192239.jpg
Description: Upstream

Photo No.: Photos-20180511-192300.jpg
Description: Downstream

Photo No.: Photos-20180511-192346.jpg
Description: Outlet

Photo No.: Photos-20180511-192514.jpg
Description: Inlet

Crossing ID: WC_0309



Inspection Date: May 18, 2018
Watercourse Name: Carrot Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 324,201 | **Northing:** 5,955,245

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 4m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 1) 1.6 m
Erosion at Site: No
Structural Problems: None

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 25%
Culvert Slope: Level and Uniform
Outlet Gap: none **Embedded?:** no
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Smaller culvert is converging to inlet of Carrot Creek and has an outlet gap of 0.45m, however it has no water at time. Second smaller culvert is ditch drainage from east side of road which collects runoff from manicured lawn and drains into Carrot Creek. Area near water smells.

Crossing ID: WC_0315

Photo No.: Photos-20180518-163313.jpg
Description: Upstream

Photo No.: Photos-20180518-163336.jpg
Description: Inlet - larger culvert

Photo No.: Photos-20180518-163415.jpg
Description: Outlet smaller culvert is ditch drainage

Photo No.: Photos-20180518-163618.jpg
Description: Smaller culvert inlet

Photo No.: Photos-20180518-163641.jpg
Description: Smaller culvert Upstream

Photo No.: Photos-20180518-163923.jpg
Description: Outlet

Crossing ID: WC_0315

Photo No.: Photos-20180518-163943.jpg
Description: Downstream

Photo No.: Photos-20180518-164044.jpg
Description: Drainage ditch culvert 10m from outlet which flows from a manicured lawn

Inspection Date: May 07, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 331,511 | **Northing:** 5,954,935

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 18m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope
Erosion Extent: Low **Total Erosion Area:** 4 m^2

Most Common Bridge Substructure Material: Steel
Total Deck Length: 22 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Steel Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: Yes, Damaged guardrail
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Damaged, sign is either down or needs to be replaced

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Wingwall on east outlet is exposed from erosion. Fill slope erosion due to no armour.

Crossing ID: WC_0316

Photo No.: Photos-20180507-213649.jpg
Description: Downstream

Photo No.: Photos-20180507-213705.jpg
Description: Outlet

Photo No.: Photos-20180507-213746.jpg
Description: Inlet

Photo No.: Photos-20180507-213756.jpg
Description: Upstream

Photo No.: Photos-20180507-213848.jpg
Description: Erosion

Crossing ID: WC_0316

Inspection Date: May 11, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 684,702 | **Northing:** 5,956,967

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 9m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 12 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Other - log piling with 3 steel beams reinforcing
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: <10%
Cause of blockage: Beaver
Structural Problems: yes, other- curb is crumbling
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Curb on southwestern side is starting to crumble. There is an old beaver dam present at inlet. It has partially broke. Creates fish passage concerns.

Photo No.: Photos-20180511-202414.jpg
Description: Deck

Photo No.: Photos-20180511-202503.jpg
Description: Inlet

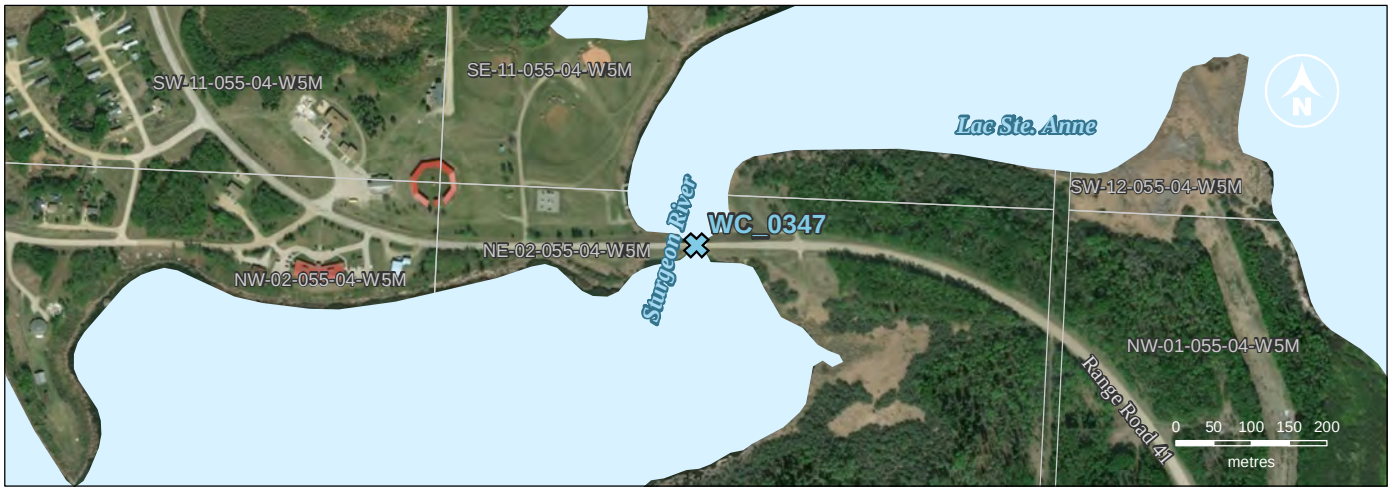
Photo No.: Photos-20180511-202526.jpg
Description: Upstream

Photo No.: Photos-20180511-202557.jpg
Description: Downstream

Photo No.: Photos-20180511-202633.jpg
Description: Outlet

Photo No.: Photos-20180511-203039.jpg
Description: Beaver Dam

Crossing ID: WC_0339



Inspection Date: May 11, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 666,259 | **Northing:** 5,956,365

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 40m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both **Erosion Extent:** Low
Erosion Source: Bank Slump,Ditch Gully **Total Erosion Area:** 6 m^2

Most Common Bridge Substructure Material: Concrete
Total Deck Length: 25 m
Deck Width (Number of Lanes): 1
Decking Material: Wood
Decking Pattern: Open
Curb Type: None - There is no curb, or the curb pattern has openings
Road Surface Material: Other - pavement
Abutment Type: Concrete Blocks
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: No, slats within walls allowing materials to fall though
Armour: Other - cement slabs
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Area around bridge seems to be well used (paths down to rivers edge, chairs, garbage). Bank slumping occurring hear edges as well as road material gathering off road. Water level is at concrete abutment height, unable to determine if materials could be eroding from under (lower water levels could show this).

Photo No.: Photos-20180511-171727.jpg
Description: Upstream

Photo No.: Photos-20180511-171738.jpg
Description: Inlet

Photo No.: Photos-20180511-171930.jpg
Description: Erosion under abutment

Photo No.: Photos-20180511-171957.jpg
Description: Downstream

Photo No.: Photos-20180511-172007.jpg
Description: Outlet

Photo No.: Photos-20180511-172039.jpg
Description: Slumping

Crossing ID: WC_0347

Photo No.: Photos-20180511-172301.jpg
Description: Ditch gully / road materials

Photo No.: Photos-20180511-172359.jpg
Description: Deck

Crossing ID: WC_0347

Inspection Date: May 11, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 688,152 | **Northing:** 5,955,787

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 6m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent

Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope,Bank Slump **Erosion Extent:** High **Total Erosion Area:** 32 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 22 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition but materials moving around walls

Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Material moving around wingwall. Abutments are in stream with lumber surrounding it and against fill slope. Water can get between fill slope and abutment lumber wall causing fill slope erosion to occur.

Photo No.: Photos-20180511-210337.jpg
Description: Downstream

Photo No.: Photos-20180511-210354.jpg
Description: Outlet

Photo No.: Photos-20180511-210530.jpg
Description: Inlet

Photo No.: Photos-20180511-210546.jpg
Description: Upstream

Photo No.: Photos-20180511-210602.jpg
Description: Old beaver dam

Crossing ID: WC_0353

Inspection Date: May 11, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 689,647 | **Northing:** 5,956,031

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 6m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 16 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: Yes, damaged guardrail
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Low
Comments: Bridge is at capacity for water level, hard to determine integrity of structure.
Noted to find 2 dead adult foxes near waters edge

Crossing ID: WC_0357

Photo No.: Photos-20180511-211227.jpg
Description: Downstream

Photo No.: Photos-20180511-211255.jpg
Description: Upstream

Photo No.: Photos-20180511-211314.jpg
Description: Deck

Photo No.: Photos-20180511-211351.jpg
Description: Inlet

Photo No.: Photos-20180511-211457.jpg
Description: Outlet

Crossing ID: WC_0357

Inspection Date: May 16, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 317,514 | **Northing:** 5,948,995

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 6m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Bank Slump,Fill Slope
Erosion Extent: High **Total Erosion Area:** 8 m^2

Most Common Bridge Substructure Material: Steel
Total Deck Length: 25 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Steel Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Other - abutment steel wall on one side
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: No
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Damaged, sign is either down or needs to be replaced

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Heavy slumping into river on fill slope on east side of river. No steel abutment wall on the erosion side like the other. Train bridge directly downstream.

Crossing ID: WC_0530

Photo No.: Photos-20180516-210322.jpg
Description: Outlet

Photo No.: Photos-20180516-210445.jpg
Description: Downstream

Photo No.: Photos-20180516-210502.jpg
Description: Erosion

Photo No.: Photos-20180516-210557.jpg
Description: Inlet

Photo No.: Photos-20180516-210609.jpg
Description: Upstream

Crossing ID: WC_0530

Inspection Date: May 14, 2018
Watercourse Name: Kilini Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 688,883 | **Northing:** 5,949,217

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 3m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 5 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: No - in good condition but materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: Yes, Abutment wall
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Materials eroding from under abutment wall. Small beaver dam noted approximately 25m upstream. This crossing is downstream of a gravel wash pit.

Photo No.: Photos-20180514-165644.jpg
Description: Upstream

Photo No.: Photos-20180514-165709.jpg
Description: Downstream

Photo No.: Photos-20180514-165811.jpg
Description: Inlet

Photo No.: Photos-20180514-165924.jpg
Description: Outlet

Photo No.: Photos-20180514-165952.jpg
Description: Fencing downstream

Photo No.: Photos-20180514-170011.jpg
Description: Under abutment showing

Crossing ID: WC_0569

Photo No.: Photos-20180514-170100.jpg
Description: Deck

Inspection Date: May 18, 2018
Watercourse Name: Carrot Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 321,080 | **Northing:** 5,946,530
Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 4 m
Deck Width (Number of Lanes): 1
Decking Material: Wood
Decking Pattern: Open
Curb Type: None - There is no curb, or the curb pattern has openings
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: No materials eroding from underneath

Armour: Riprap
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Stream outlet has multiple channels. Some areas with pooled water within a channel, might be caused by old beaver dams. Wingwalls have materials coming around from the side. Road materials in stream bed.

Photo No.: Photos-20180518-173110.jpg
Description: Deck

Photo No.: Photos-20180518-173213.jpg
Description: Inlet

Photo No.: Photos-20180518-173303.jpg
Description: Upstream

Photo No.: Photos-20180518-173318.jpg
Description: Downstream

Photo No.: Photos-20180518-173355.jpg
Description: Outlet

Photo No.: Photos-20180518-173436.jpg
Description: Old beaver dam?

Crossing ID: WC_0577

Photo No.: Photos-20180518-173452.jpg
Description: Old beaver dam?

Inspection Date: May 18, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 326,522 | **Northing:** 5,946,318

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 12m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Concrete
Total Deck Length: 30 m
Deck Width (Number of Lanes): 4
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Concrete Blocks
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Other - concrete blocks/slabs
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: No, sign is not present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Bankfull width and wetted width are very similar. Water level could rise and flood sidewalks and enter stormwater drainage.

Crossing ID: WC_0579

Photo No.: Photos-20180518-200509.jpg
Description: Inlet

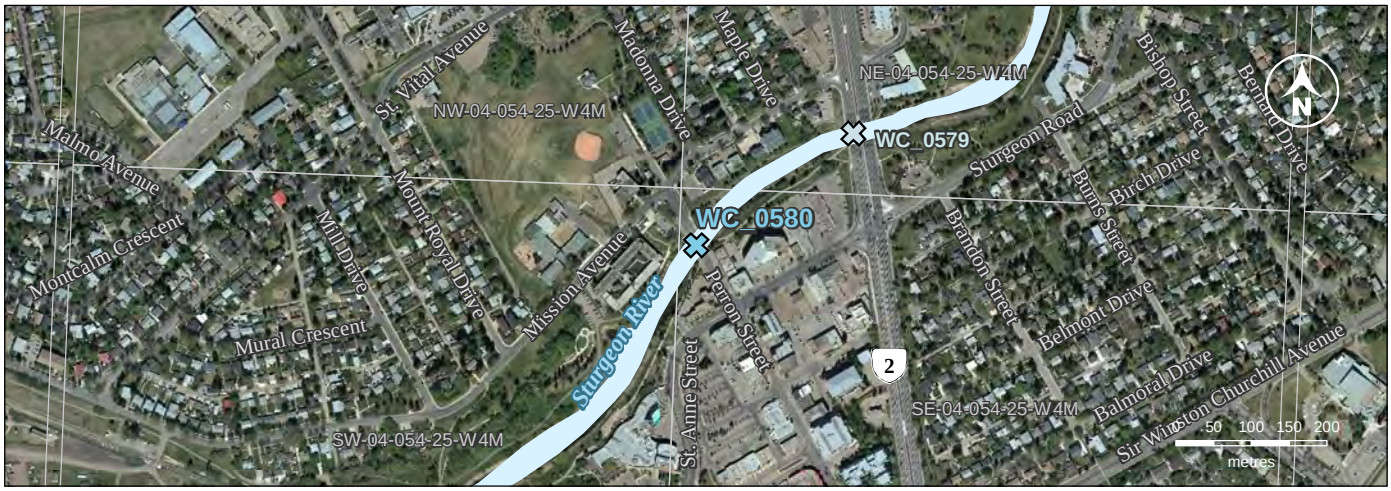
Photo No.: Photos-20180518-200539.jpg
Description: Storm water drainage

Photo No.: Photos-20180518-200601.jpg
Description: Upstream

Photo No.: Photos-20180518-200738.jpg
Description: Downstream

Photo No.: Photos-20180518-200751.jpg
Description: Outlet

Crossing ID: WC_0579



Inspection Date: May 18, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 12 | **Easting:** 326,313 | **Northing:** 5,946,170

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 13m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Concrete
Total Deck Length: 35 m
Deck Width (Number of Lanes): 4
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Concrete Blocks
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath **Wingwall Functioning?:** Yes - in good condition and no materials eroding from underneath **Armour:** Other - cement blocks
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: O - cement armour is separated from abutment wall on north side
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: No, sign is not present
Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: low laying area. River exceeding its banks. Flooding onto sidewalk. There seems to be some separation of the cement abutment wall to the cement armour. There is no grader markers or bridge reflectors.

Crossing ID: WC_0580

Photo No.: Photos-20180518-195437.jpg
Description: Downstream

Photo No.: Photos-20180518-195452.jpg
Description: Outlet

Photo No.: Photos-20180518-195719.jpg
Description: Upstream

Photo No.: Photos-20180518-195736.jpg
Description: Storm water discharge

Photo No.: Photos-20180518-195757.jpg
Description: Inlet

Photo No.: Photos-20180518-195819.jpg
Description: Flooding

Crossing ID: WC_0580

Inspection Date: May 18, 2018
Watercourse Name: Carrot Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 321,680 | **Northing:** 5,945,062

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 10m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No
Most Common Bridge Substructure Material: Steel
Total Deck Length: 5 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Open
Curb Type: None - There is no curb, or the curb pattern has openings
Road Surface Material: Other - pavement
Abutment Type: Steel Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath **Wingwall Functioning?:** Yes - in good condition and no materials eroding from underneath **Armour:** Riprap
Opening Blockage: 25%
Cause of blockage: Beaver
Structural Problems: None
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present
Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Happy beaver in area. Dam approx 5 meters downstream from bridge at outlet. Looks to be about 10% of water able to get through. Water is back pooling to the point of exceeding its bankfull width around bridge. Water is moving behind wingwalls.

Crossing ID: WC_0598

Photo No.: Photos-20180518-183705.jpg
Description: Deck

Photo No.: Photos-20180518-183853.jpg
Description: Downstream

Photo No.: Photos-20180518-183914.jpg
Description: Outlet

Photo No.: Photos-20180518-183940.jpg
Description: Beaver dam downstream

Photo No.: Photos-20180518-184109.jpg
Description: Upstream

Photo No.: Photos-20180518-184123.jpg
Description: Inlet

Crossing ID: WC_0598

Inspection Date: May 16, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 309,036 | **Northing:** 5,941,805

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 3m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Potential **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope
Erosion Extent: Low **Total Erosion Area:** 5 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 6 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Steel Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Riprap
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: beaver dam leading to fish passage concerns. Ripple up and downstream of bridge caused by larger rocks in water (unsure if natural or not). Rip rap on southside of bridge and not northside.

Crossing ID: WC_0681

Photo No.: Photos-20180516-171528.jpg
Description: Inlet

Photo No.: Photos-20180516-171548.jpg
Description: Beaver dam

Photo No.: Photos-20180516-171708.jpg
Description: Upstream

Photo No.: Photos-20180516-171726.jpg
Description: Downstream

Photo No.: Photos-20180516-171806.jpg
Description: Outlet

Crossing ID: WC_0681

Inspection Date: May 16, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 306,059 | **Northing:** 5,940,239

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 1) 3.5 m
Erosion at Site: No

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 75%
Culvert Slope: level and uniform
Outlet Gap: none **Embedded?:** Yes
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Beaver dam upstream approx 25m. water has diverted around or a split channel was historically there. Beaver dam down stream is small, approx 30m from culvert

Crossing ID: WC_0725

Photo No.: Photos-20180516-163005.jpg
Description: Upstream

Photo No.: Photos-20180516-163039.jpg
Description: Upstream

Photo No.: Photos-20180516-163144.jpg
Description: Inlet

Photo No.: Photos-20180516-163212.jpg
Description: Beaver dam upstream

Photo No.: Photos-20180516-163332.jpg
Description: Downstream south

Photo No.: Photos-20180516-163347.jpg
Description: Downstream north

Crossing ID: WC_0725

Photo No.: Photos-20180516-163410.jpg
Description: Downstream from culvert

Photo No.: Photos-20180516-163501.jpg
Description: Outlet

Photo No.: Photos-20180516-163530.jpg
Description: Beaver dam downstreams

Crossing ID: WC_0725

Inspection Date: May 09, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 641,626 | **Northing:** 5,940,192

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 20 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Riprap
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present
Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Deeper stream channel (>1 meter) directly up and downstream of bridge. Directly under the bridge only had a depth of water to be 0.1-0.2 meters with small boulders assumed to be rip rap placed there for bridge erosion control. White suckers were present at the time of assessment and were demonstrating difficulties trying to pass the rip rap. The stream over the rip rap was rapid and moving quickly. Alternatively, the area provides suitable substrate for laying eggs and could be spawning habitat. Recommend further investigation prior to commencing any instream activities.

Crossing ID: WC_0758

Photo No.: Photos-20180509-194900.jpg
Description: Deck

Photo No.: Photos-20180509-195108.jpg
Description: Downstream

Photo No.: Photos-20180509-195408.jpg
Description: White suckers in Ripple

Photo No.: Photos-20180509-201037.jpg
Description: Upstream

Photo No.: Photos-20180509-201101.jpg
Description: Inlet

Photo No.: Photos-20180509-202243.jpg
Description: Outlet

Crossing ID: WC_0758

Inspection Date: May 15, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 303,983 | **Northing:** 5,938,005

Stream Classification: Non-Fluvial
Bankfull Width: 2m (Estimated to Nearest Metre) **Crossing Type:** Culvert - Multiple
Erosion at Site: No
Structural Problems: None

Culvert(s) Diameter: 1) 1 m
2) 1 m

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown
Substrate Type: none
For what length of culvert?: unknown
What proportion has backwater?: 50%
Culvert Slope: Level and Uniform
Outlet Gap: 0.4 m
Embedded?: no
Pool Depth: none
Scour pool apparent?: No

Fish Passage Assessment: Serious Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Unidentified minnows were noted downstream of culvert 2. There is an outlet gap of 0.4 meters at these culvert. These minnows could not utilize this culvert for habitat connectivity.

Crossing ID: WC_0784

Photo No.: Photos-20180515-202707.jpg
Description: Culvert 1 - Inlet

Photo No.: Photos-20180515-202832.jpg
Description: Culvert 1 - Upstream

Photo No.: Photos-20180515-202856.jpg
Description: Culvert 2 - Inlet

Photo No.: Photos-20180515-202947.jpg
Description: Culvert 2 - Upstream

Photo No.: Photos-20180515-203006.jpg
Description: Culvert 2 - Downstream

Photo No.: Photos-20180515-203052.jpg
Description: Culvert 2 - Outlet

Crossing ID: WC_0784

Photo No.: Photos-20180515-203101.jpg
Description: Culvert 1 - Downstream

Crossing ID: WC_0784

Inspection Date: May 09, 2018
Watercourse Name: Kilini Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 683,851 | **Northing:** 5,939,586

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 2m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 1) 2.7 m
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Inlet
Erosion Source: Other (rip rap slipped)
Erosion Extent: Low **Total Erosion Area:** 2 m^2
Structural Problems: None

Greater than 10% of the culvert diameter blocked by debris?: Yes
Substrate in Culvert?: unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 50%
Culvert Slope: level and uniform
Outlet Gap: none **Embedded?:** unknown
Pool Depth: none **Scour pool apparent?:** No

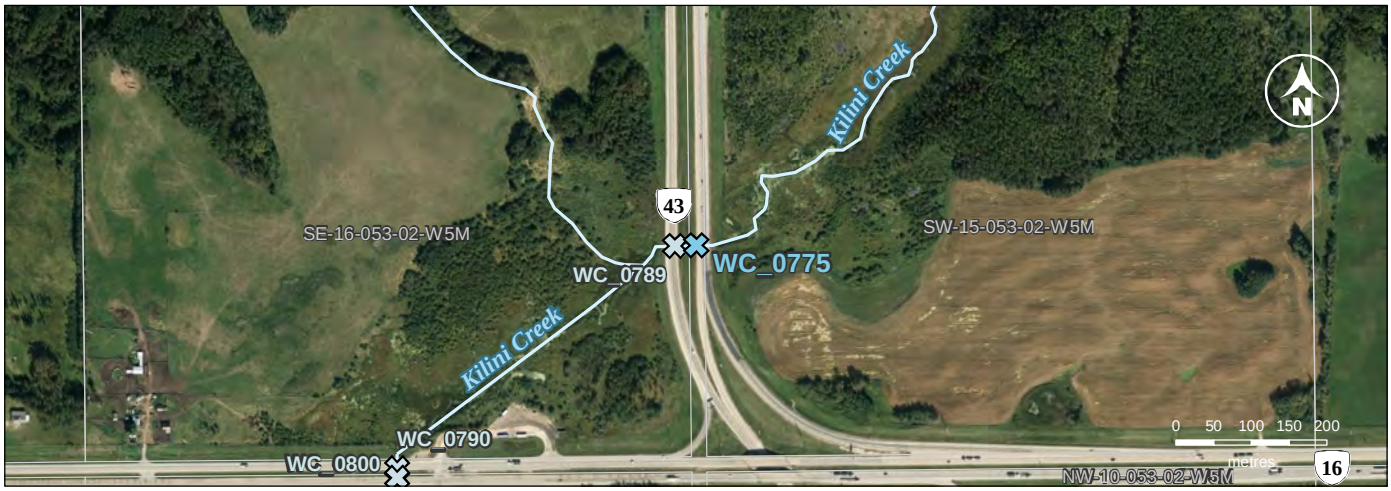
Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Inlet of WC_0775. Wetlands upstream, hard to determine channel. Riprap has slipped into water and is causing some concerns for fish passage with low water levels and/or low flow. No way to determine if culvert is embedded or not.

Crossing ID: WC_0789

Photo No.: Photos-20180509-213309.jpg
Description: Inlet / Erosion

Photo No.: Photos-20180509-213347.jpg
Description: Upstream

Crossing ID: WC_0789



Inspection Date: May 09, 2018
Watercourse Name: Killini Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 683,878 | **Northing:** 5,939,587

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 2m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 1) 2.7 m
Erosion at Site: No
Structural Problems: None

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 50%
Culvert Slope: level and uniform
Outlet Gap: none **Embedded?:** unknown
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: No Concerns

Emergency Repair Required?: No
Overall Risk: Medium
Comments: Inlet of WC_0789. wetland surrounding area hard to define channel. Construction occurred in this area recently, believe the culvert was replaced here when the highway was redone. Culvert is sticking out into water 2 feet past riprap. water is now along the outside of the culvert.

Crossing ID: WC_0775

NSWA Sturgeon River Watercourse Assessment

Photo No.: Photos-20180509-212037.jpg
Description: Outlet

Photo No.: Photos-20180509-212204.jpg
Description: Downstream Area

Photo No.: Photos-20180509-212433.jpg
Description: Wetland Downstream

Inspection Date: May 09, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 639,959 | **Northing:** 5,938,896

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 7m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Bank Slump,Fill Slope
Erosion Extent: High **Total Erosion Area:** 8 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 16 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Log Pilings
Abutment Functioning?: No, Materials eroding from under due to erosion

Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Vegetation
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: Yes, damaged guardrail
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Slumping and fill slope erosion is exposing abutment walls

Crossing ID: WC_0798

Photo No.: Photos-20180509-190359.jpg
Description: Upstream

Photo No.: Photos-20180509-190431.jpg
Description: Inlet

Photo No.: Photos-20180509-190525.jpg
Description: Slumping

Photo No.: Photos-20180509-190701.jpg
Description: Downstream

Photo No.: Photos-20180509-190741.jpg
Description: Outlet

Photo No.: Photos-20180509-191039.jpg
Description: Deck

Crossing ID: WC_0798

Inspection Date: May 14, 2018
Watercourse Name: Kilini Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 683,491 | **Northing:** 5,939,269

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 8m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Culvert(s) Diameter: 1) 2.2 m
Erosion at Site: No
Structural Problems: Other - Rusting & undersized culvert

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: No **Substrate Type:** None
For what length of culvert?: unknown
What proportion has backwater?: 25%
Culvert Slope: Level and Uniform
Outlet Gap: n/a **Embedded?:** no
Pool Depth: 0.4 m **Scour pool apparent?:** No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Inlet of culvert, outlet is WC_0790. Upstream and downstream is a wetland area. Highway 770 just redone. Silt fencing from the start of construction still present, not in great shape.

Crossing ID: WC_0800

Photo No.: Photos-20180514-153206.jpg
Description: Upstream

Photo No.: Photos-20180514-153253.jpg
Description: Inlet

Crossing ID: WC_0800

Inspection Date: May 14, 2018
Watercourse Name: Kilini Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 683,491 | **Northing:** 5,939,281

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 4m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Outlet
Erosion Source: Bank Slump **Erosion Extent:** Low
Structural Problems: Yes - undersized culvert.

Culvert(s) Diameter: 1) 2.2 m

Total Erosion Area: 2 m^2

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 100%
Culvert Slope: Level and Uniform
Outlet Gap: none **Embedded?:** no
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Outlet of WC_0800. opens into a wetland. lots of veg on top of culvert. vehicle tracks on fill slope,

Crossing ID: WC_0790

Photo No.: Photos-20180514-152222.jpg
Description: Downstream

Photo No.: Photos-20180514-152244.jpg
Description: Outlet

Photo No.: Photos-20180514-152308.jpg
Description: Erosion

Inspection Date: May 15, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 303,580 | **Northing:** 5,936,582

Stream Classification: Non-Fluvial
Bankfull Width: 2m (Estimated to Nearest Metre) **Crossing Type:** Culvert - Single
Culvert(s) Diameter: 1) 3 m
Erosion at Site: No
Structural Problems: None

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: <25%
Culvert Slope: Level and Uniform
Outlet Gap: none **Embedded?:** No
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Outlet of WC_0836. Unable to see into culvert due to fencing. Inlet has cement structure surrounding culvert while the outlet does not. Concerns with backwater. Erosion control is good.

Crossing ID: WC_0817

Photo No.: Photos-20180515-195432.jpg
Description: Smaller culvert

Photo No.: Photos-20180515-195511.jpg
Description: Downstream

Photo No.: Photos-20180515-195528.jpg
Description: Outlet

Crossing ID: WC_0817

Inspection Date: May 15, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 303,578 | **Northing:** 5,936,567

Stream Classification: Non-Fluvial
Bankfull Width: 2m (Estimated to Nearest Metre) **Crossing Type:** Culvert - Single
Culvert(s) Diameter: 1) 3 m
Erosion at Site: No
Structural Problems: None

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Some
Substrate Type: stream bed
For what length of culvert?: 1m
What proportion has backwater?: <25%
Culvert Slope: Level and Uniform
Embedded?: No, not purposefully
Outlet Gap: none
Pool Depth: none
Scour pool apparent?: No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No

Overall Risk: Medium
Comments: Inlet for WC_0817. Movement of stream bed into culvert. Material moved there has grown some vegetation. Low water levels, low backwater.

Crossing ID: WC_0836

Photo No.: Photos-20180515-194548.jpg
Description: Upstream

Photo No.: Photos-20180515-194614.jpg
Description: Inlet

Inspection Date: May 09, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 638,994 | **Northing:** 5,937,784

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Potential **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Other (sedimentation around wing walls)
Erosion Extent: Low **Total Erosion Area:** 8 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 6 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: No, materials moving around walls
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: Yes, wingwall functioning
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Unable to determine structural integrity of bridge due to capacity of water to bridge. Water is in contact with treated wood abutment and wing walls.

Photo No.: Photos-20180509-181815.jpg
Description: Upstream

Photo No.: Photos-20180509-181823.jpg
Description: Inlet

Photo No.: Photos-20180509-181905.jpg
Description: Downstream

Photo No.: Photos-20180509-181930.jpg
Description: Outlet

Photo No.: Photos-20180509-182019.jpg
Description: Deck

Photo No.: Photos-20180509-182050.jpg
Description: Increasing sedimentation around wing walls

Crossing ID: WC_0819

Photo No.: Photos-20180509-182126.jpg
Description: Golf course bridge 5m south of road bridge

Inspection Date: May 09, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 635,249 | **Northing:** 5,932,493

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 4m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Potential **Erosion Location (Inlet or Outlet):** Inlet
Erosion Source: Other (missing wingwall)
Erosion Extent: Low **Total Erosion Area:** 3 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 4 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: No - falling apart and/or materials eroding from underneath
Wingwall Functioning?: No - falling apart and/or materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: Yes, BA,RA,V
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Hoople Lake approx 500m east of bridge with connecting ditch channel on inlet side. Bridge looks very old.

Crossing ID: WC_0865

Photo No.: Photos-20180509-173138.jpg
Description: Upstream

Photo No.: Photos-20180509-173200.jpg
Description: Downstream

Photo No.: Photos-20180509-173220.jpg
Description: Deck

Photo No.: Photos-20180509-173355.jpg
Description: Inlet

Photo No.: Photos-20180509-173431.jpg
Description: Wing wall damage and lack there of wingwall as well rotting on east side top

Photo No.: Photos-20180509-173527.jpg
Description: Outlet

Crossing ID: WC_0865

Inspection Date: May 09, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 635,683 | **Northing:** 5,931,220

Stream Classification: Non-Fluvial
Bankfull Width: 1.6m (Measured)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes
Erosion Location (Inlet or Outlet): Both
Erosion Source: Bridge deck
Total Erosion Area: 3m^2
Erosion Extent: low

Most Common Bridge Substructure Material: Timber
Total Deck Length: 6 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: No - falling apart and/or materials eroding from underneath
Armour: Riprap
Opening Blockage: 10%
Cause of blockage: Other - rip rap
Structural Problems: Yes, Other - Wingwall separating from bridge
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present
Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Large rocks in stream channel at inlet and outlet. Rocks were strategically placed there in the form of rip rap. Water is passing though, however this is a fish passage concern, since larger fish will not be able to get though the holes between rocks. 2/4 grader markers have damage (bullet holes). Open decking pattern has resulted in road surface material entering the stream under the bridge.

Crossing ID: WC_0868

Photo No.: Photos-20180509-170018.jpg
Description: Upstream

Photo No.: Photos-20180509-170113.jpg
Description: Inlet

Photo No.: Photos-20180509-170157.jpg
Description: Downstream

Photo No.: Photos-20180509-170243.jpg
Description: Outlet

Photo No.: Photos-20180509-170616.jpg
Description: Wing wall SE slanting

Photo No.: Photos-20180509-170754.jpg
Description: 10% blockage inlet concerns

Crossing ID: WC_0868

Photo No.: Photos-20180509-171026.jpg
Description: Deck

Inspection Date: May 15, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 303,005 | **Northing:** 5,930,098

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 2m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single **Culvert(s) Diameter:** 1) 1.5 m
Erosion at Site: No
Structural Problems: Yes, undersized culvert

Greater than 10% of the culvert diameter blocked by debris?: Yes
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 100%
Culvert Slope: Level and Uniform
Outlet Gap: none **Embedded?:** no
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Grate placed on inlet of culvert. Organic debris accumulating. Grate mesh is small and will not allow for larger fish to pass through.

Crossing ID: WC_0871

Photo No.: Photos-20180515-170534.jpg
Description: Upstream

Photo No.: Photos-20180515-170602.jpg
Description: Inlet

Photo No.: Photos-20180515-170633.jpg
Description: Downstream

Photo No.: Photos-20180515-170701.jpg
Description: Outlet

Photo No.: Photos-20180515-171112.jpg
Description: Grate

Crossing ID: WC_0871

Inspection Date: May 15, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 302,004 | **Northing:** 5,929,365

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 5m (Estimated to Nearest Metre)
Crossing Type: Culvert - Single **Culvert(s) Diameter:** 1) 1.5 m
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Outlet
Erosion Source: Ditch Gully
Erosion Extent: Low **Total Erosion Area:** 2 m^2

Greater than 10% of the culvert diameter blocked by debris?: Yes
Substrate in Culvert?: Unknown **Substrate Type:** Unknown
For what length of culvert?: Unknown
What proportion has backwater?: 50%
Culvert Slope: level and uniform
Outlet Gap: none **Embedded?:** No
Pool Depth: none **Scour pool apparent?:** No
Structural Problems: None

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Grate on inlet of culvert. Organic debris built up on grate causing fish passage concerns.

Crossing ID: WC_0872

Photo No.: Photos-20180515-164842.jpg
Description: Upstream

Photo No.: Photos-20180515-164942.jpg
Description: Inlet / waffle style grate

Photo No.: Photos-20180515-165031.jpg
Description: Downstream

Photo No.: Photos-20180515-165056.jpg
Description: Outlet

Photo No.: Photos-20180515-165231.jpg
Description: Erosion

Crossing ID: WC_0872

Inspection Date: May 15, 2018
Watercourse Name: Atim Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 699,009 | **Northing:** 5,928,264

Stream Classification: Non-Fluvial
Bankfull Width: 1m (Estimated to Nearest Metre) **Crossing Type:** Bridge - Permanent
Erosion at Site: No

Most Common Bridge Substructure Material: Timber
Total Deck Length: 3 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: Other - planks of lumber
Opening Blockage: 0%
Cause of blockage: Other - steel wall from culverts beside
Structural Problems: None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Damaged, sign is either down or needs to be replaced

Fish Passage Assessment: Some Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: down stream from 2 culverts and a steel wall holding water back upstream. Low flow

Crossing ID: WC_0875

NSWA Sturgeon River Watercourse Assessment

Photo No.: Photos-20180515-162301.jpg
Description: Upstream

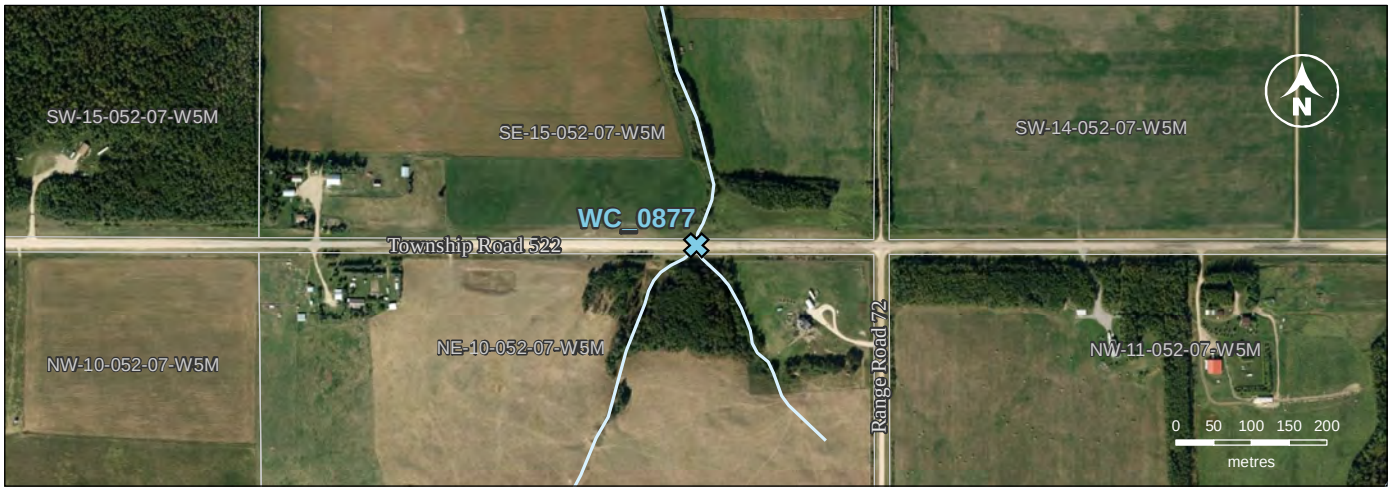
Photo No.: Photos-20180515-162320.jpg
Description: Inlet

Photo No.: Photos-20180515-162514.jpg
Description: Downstream

Photo No.: Photos-20180515-162544.jpg
Description: Outlet

Photo No.: Photos-20180515-163027.jpg
Description: Lumber amour

Crossing ID: WC_0875



Inspection Date: May 09, 2018
Watercourse Name: Sturgeon River
GPS Co-ordinates:
UTM: 11 | **Easting:** 636,760 | **Northing:** 5,928,008

Stream Classification: Non-Fluvial
Bankfull Width: 1m (Measured)
Crossing Type: Culvert - Multiple
Culvert(s) Diameter: 1) 0.8 m
2) 0.8 m
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Outlet
Erosion Source: Bank Slump
Erosion Extent: Low **Total Erosion Area:** 3 m^2
Structural Problems: None
Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: <25%
Culvert Slope: Sloped and not uniform
Outlet Gap: none **Embedded?:** No
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: Serious Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Inlets are about 30 meters apart but the outlets are within a meter of each other. Erosion is caused by slumping around outlets. Inlet gap noted at the east inlet. There is some blockage on the west inlet with large rocks. Outlet east has an accumulation of organic debris causing some blockage.

Crossing ID: WC_0877

Photo No.: Photos-20180509-163349.jpg
Description: Outlets

Photo No.: Photos-20180509-163404.jpg
Description: Downstream

Photo No.: Photos-20180509-163731.jpg
Description: Upstream west

Photo No.: Photos-20180509-163844.jpg
Description: Inlet west

Photo No.: Photos-20180509-164137.jpg
Description: Upstream east

Photo No.: Photos-20180509-164214.jpg
Description: Inlet east

Crossing ID: WC_0877

Inspection Date: May 08, 2018
Watercourse Name: Riviere Qui Barre
GPS Co-ordinates:
UTM: 12 | **Easting:** 304,103 | **Northing:** 5,975,450

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 7m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Outlet
Erosion Source: Ditch Gully **Total Erosion Area:** 1 m^2
Erosion Extent: Low
Most Common Bridge Substructure Material: Timber
Total Deck Length: 7 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath

Wingwall Functioning?: Yes - but earth moving around the walls

Armour: None
Opening Blockage: 0% **Structural Problems:** None
Bridge Signs: No, sign is not present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Tributary water height is touching the wooden abutments, no amour protecting wood and earth from movement into stream. Fence crossing creek could lead to blockage of opening. Earth is moving around the outer portion of the inlet wingwalls. Treated timber within aquatic habitat.

Crossing ID: WC_0053

Photo No.: Photos-20180508-172849.jpg
Description: Upstream

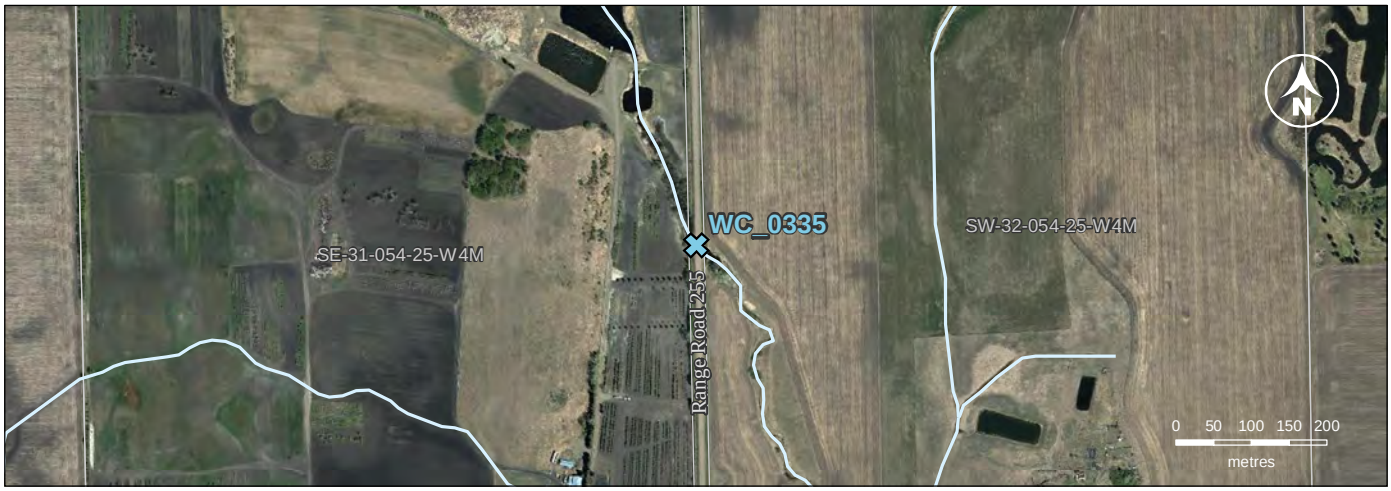
Photo No.: Photos-20180508-173006.jpg
Description: Inlet

Photo No.: Photos-20180508-173323.jpg
Description: Downstream

Photo No.: Photos-20180508-173422.jpg
Description: Outlet

Photo No.: Photos-20180508-173516.jpg
Description: Deck

Crossing ID: WC_0053



Inspection Date: May 18, 2018
Watercourse Name: Carrot Creek
GPS Co-ordinates:
UTM: 12 | **Easting:** 324,165 | **Northing:** 5,954,070

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 3m (Estimated to Nearest Metre)
Crossing Type: Culvert - Multiple
Erosion at Site: No
Structural Problems: Yes, undersized culverts

Culvert(s) Diameter: 1) 1.25 m
2) 1.25 m

Greater than 10% of the culvert diameter blocked by debris?: No
Substrate in Culvert?: Unknown **Substrate Type:** unknown
For what length of culvert?: unknown
What proportion has backwater?: 75%
Culvert Slope: Level and Uniform
Outlet Gap: none **Embedded?:** no
Pool Depth: none **Scour pool apparent?:** No

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Downstream channel is hard to determine (dissipates into wetland?). Pooling occurring near culverts, possibly due to undersized culverts and low flow.

Crossing ID: WC_0335

Photo No.: Photos-20180518-164812.jpg
Description: Downstream

Photo No.: Photos-20180518-164848.jpg
Description: Downstream

Photo No.: Photos-20180518-164958.jpg
Description: Ditch gully flows into Downstream

Photo No.: Photos-20180518-165022.jpg
Description: Outlet

Photo No.: Photos-20180518-165044.jpg
Description: Upstream

Photo No.: Photos-20180518-165100.jpg
Description: Inlet

Crossing ID: WC_0335

Photo No.: Photos-20180518-165117.jpg
Description: Inlet

Inspection Date: May 11, 2018
Watercourse Name: **Sturgeon River**
GPD Co-ordinates:
UTM: 11 | **Easting:** 657,729 | **Northing:** 5,949,149

Stream Classification: Fluvial (Permanent - Large)
Bankfull Width: 20m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Both
Erosion Source: Fill Slope
Erosion Extent: Low **Total Erosion Area:** 36 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 16 m
Deck Width (Number of Lanes): 2
Decking Material: Concrete
Decking Pattern: Closed
Curb Type: Concrete
Road Surface Material: Other - pavement
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Other - none
Structural Problems: None
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Steep fill slope gradient is resulting in erosion. Small hole noted in bridge deck.

Photo No.: Photos-20180511-163052.jpg
Description: Deck

Photo No.: Photos-20180511-163136.jpg
Description: Upstream

Photo No.: Photos-20180511-163226.jpg
Description: Inlet

Photo No.: Photos-20180511-163455.jpg
Description: Downstream

Photo No.: Photos-20180511-163508.jpg
Description: Outlet

Photo No.: Photos-20180511-163730.jpg
Description: Erosion

Crossing ID: WC_0540

Photo No.: Photos-20180511-163750.jpg
Description: Erosion

Inspection Date: May 14, 2018
Watercourse Name: Kilini Creek
GPS Co-ordinates:
UTM: 11 | **Easting:** 689,040 | **Northing:** 5,945,983

Stream Classification: Fluvial (Permanent - Small)
Bankfull Width: 10m (Estimated to Nearest Metre)
Crossing Type: Bridge - Permanent **Culvert(s) Diameter:** n/a
Erosion at Site: Yes **Erosion Location (Inlet or Outlet):** Outlet
Erosion Source: Bridge Deck,Other (lots of gravel from roads creating a mound under the bridge)
Erosion Extent: Low **Total Erosion Area:** 2 m^2

Most Common Bridge Substructure Material: Timber
Total Deck Length: 5 m
Deck Width (Number of Lanes): 1
Decking Material: Concrete
Decking Pattern: Open
Curb Type: Concrete
Road Surface Material: Gravel
Abutment Type: Log Pilings
Abutment Functioning?: Yes - in good condition and no materials eroding from underneath
Wingwall Functioning?: Yes - in good condition and no materials eroding from underneath
Armour: None
Opening Blockage: 0%
Cause of blockage: Road Material
Structural Problems: None
Bridge Signs: Yes, sign is present
Grader markers or bridge reflectors?: Yes, sign is present

Fish Passage Assessment: No Concerns
Emergency Repair Required?: No
Overall Risk: Medium
Comments: Bridge is at water capacity and the integrity of structure is unknown. Road material is in streambed.

Crossing ID: WC_0611