Stoney Creek Watershed

Initial Assessment and Prescription for Project 3: CN Rail Crossing

Location

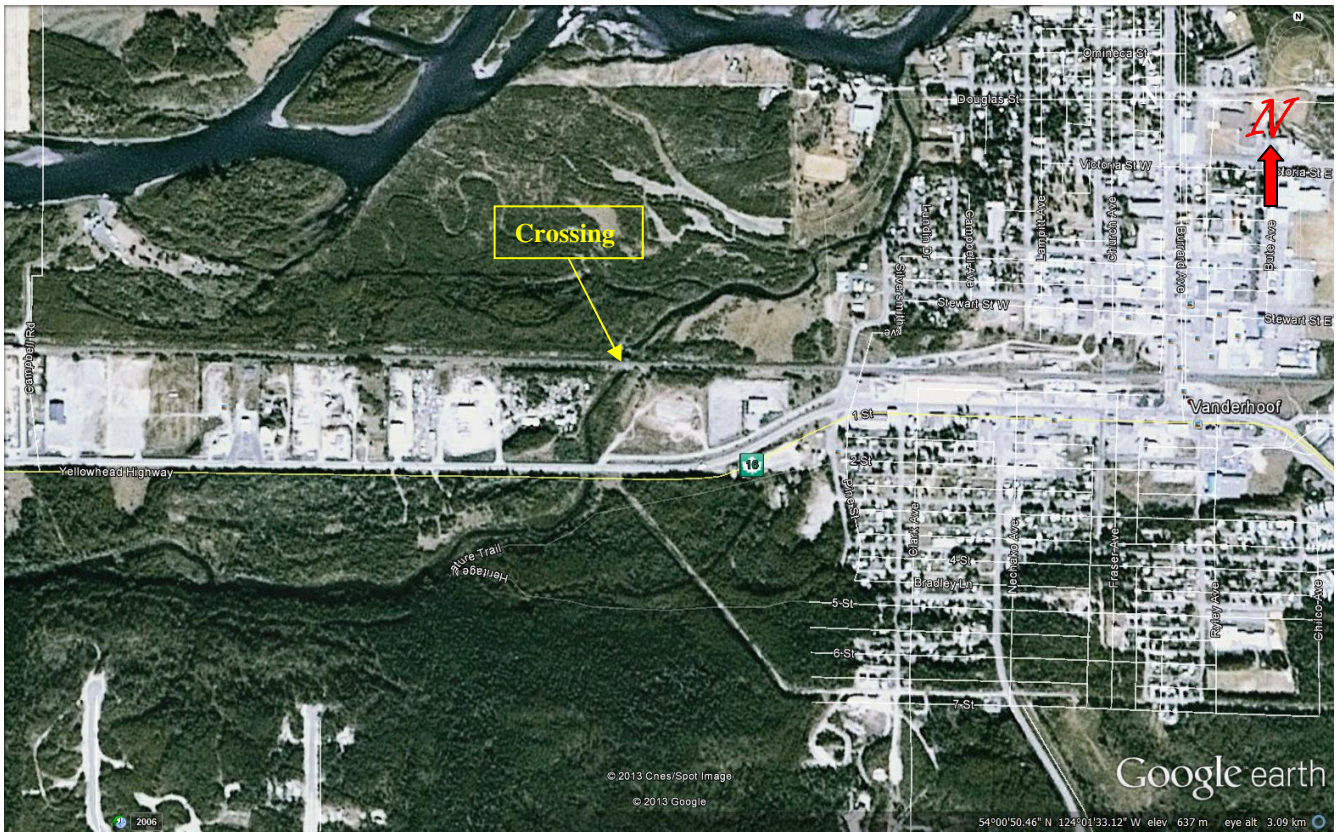
Legal Description of Property: NA

Property PID: NA

Location Description: Culvert crossing at Stoney Creek North and West of Fountain Tire in Vanderhoof, BC.

Site GPS Location: 10U 432720 5985658

Map:



Site Description and Issues

Background: A Canadian National Rail (CN) crossing exists across Stoney Creek at this site. The site is located on just North and West of Fountain Tire in Vanderhoof. There are three culverts at this crossing.

Qualitative Assessment:

There are three round closed bottom culverts at this site. There was is evidence of these culverts causing erosion on to the stream bank on the Northwest stream bank. All three culverts have a partial blockage inside the culverts caused by beavers. These blockages are causing the stream to be backed up upstream for several hundred meters. Even without these blockages, it appears the culverts inlets are raised to high, and water would be still be backed up upstream although at a lower water level. The lowest of the three culverts has a 15 cm outlet drop, and the other two culverts are higher and are likely fish impediments at low water and during spring freshet before the Nechako River water levels have risen. Fish passage may be possible when the Nechako River flows are high enough to back water up and slow velocities through the culverts. These culverts were assessed as barriers and are in definite need of replacement.

Location and Overview information

Assessment Date	Crossing ID	Crew	UTM	Road Name	Creek Name	Tenure
Nov 5, 2013	8	OA/CC	10U.432720.5985658	CN Rail Crossing	Stoney Creek	CN

Field Observations and Assessment Measurements

Crossing Type	Crossing Subtype	Diameter or Span (m)	Length or Width (meters)	Continuous Embeddedment? Yes/No	Average Depth Embededdment (meters)
CBS	RC	2.18	23.40	No	0

Resemble Channel? Yes / No	Backwatered? Yes / No	Percentage Backwatered	Fill Depth (meters)	Outlet Drop (meters)	Outlet Pool Depth (0.01m)	Inlet Drop? Yes / No	Culvert Slope (%)
No	No	0.00	4.10	0.15	0.94	No	2.00

Stream Information

Downstream Channel Width (m)	Stream Slope %	Beaver Activity? Yes / No	Fish Observed? Yes / No	Valley Fill	Habitat Value
17.02	1	Yes	Yes	Deep Fill	Medium

Scoring Data

Stream Width Ratio	Culvert Length Score	Embed Score	Outlet Drop Score	Culvert Slope Score	Stream Width Ratio Score	Final Score	Barrier Result
7.81	3	10	5	5	6	29	Barrier

Recommendations

Crossing Fix	Recommended Diameter or Span (meters)	Assessment Comment
Open Bottom Structure	25	Three culverts, all the same size. Beavers have dammed inside of the culvert. Water is backed up above the culverts

Initial Prescription

There are at least two options for this site.

1) Take out the culverts during low flow and replace them with a bridged.
2) Replace these culverts with a large diameter open bottom arch culvert that will handle freshet flows and will not impede fish passage.

Pictures:

Picture 1: Culvert Inlet

Picture 2: Culvert Outlet

Picture 3: Upstream View

Picture 4: Downstream View

Picture 5: Culvert Barrel

Picture 6: Down Stream Bank Erosion