

# Boutot Brook Crossing

Prepared by **Hydronix Engineering:**

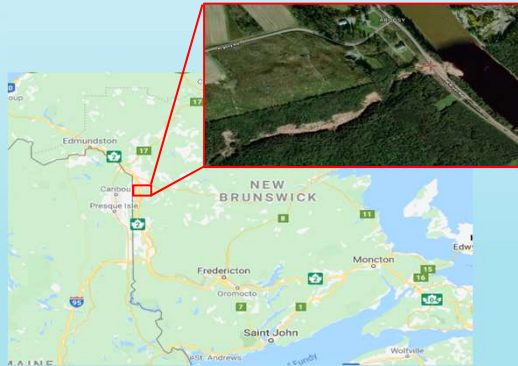
Ethan Fletcher, Josiah Gosman, Vinh Le, Trevor Tabor & Ian Verschoor

## Background Information

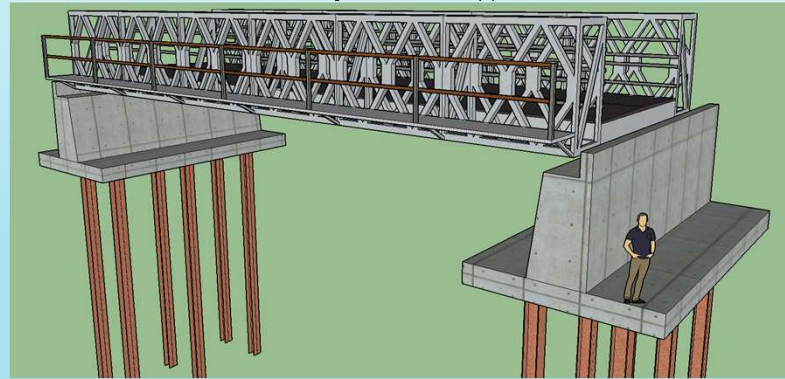
**Client:** Lindon Miller (NB DTI)

**Problem:** Buildup of sediment in the existing twin culverts at the Boutot Brook crossing.

**Location:** 1080 West River Road, Grand Falls Parish



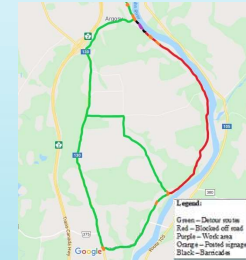
## Proposed Design



## Water Diversion Path



## Traffic Detour Plan



## Design Objectives

- Develop a solution to mitigate the sediment buildup in the twin culverts
- Satisfy the traffic and load demands of the existing roadway
- Maintain accessibility to the existing walking trail
- Create a design that will satisfy fish passage requirements
- Minimize traffic disruptions

## Design Information

- **Bridge Type:** Two-lane steel modular bridge with an attached pedestrian walkway
- **Foundation type:** steel H-piles
- **Cost estimate:** \$1.3 M - \$1.7 M
- **Bridge design length:** 18.5 m
- **Design flowrate:** 69,300 L/s

## Scope of Work

1. Hydraulic analysis
2. Modular bridge design
3. Foundation design
4. Construction traffic control plan
5. Sustainability assessment
6. Basic environmental impact assessment
7. Cost analysis
8. Safety analysis

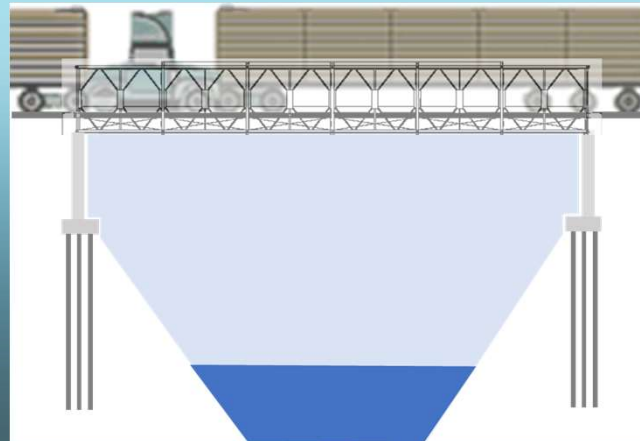


## Design Alternatives

- Do nothing
- Systematic maintenance Plan
- Rerouting the brook
- Retaining wall
- Lifting the culvert
- **Steel modular bridge\***



## Load Analysis



\*Visual representation of the worst ULS load case on the bridge structure with two CL-625 tractor trailers

## Envision Assessment

