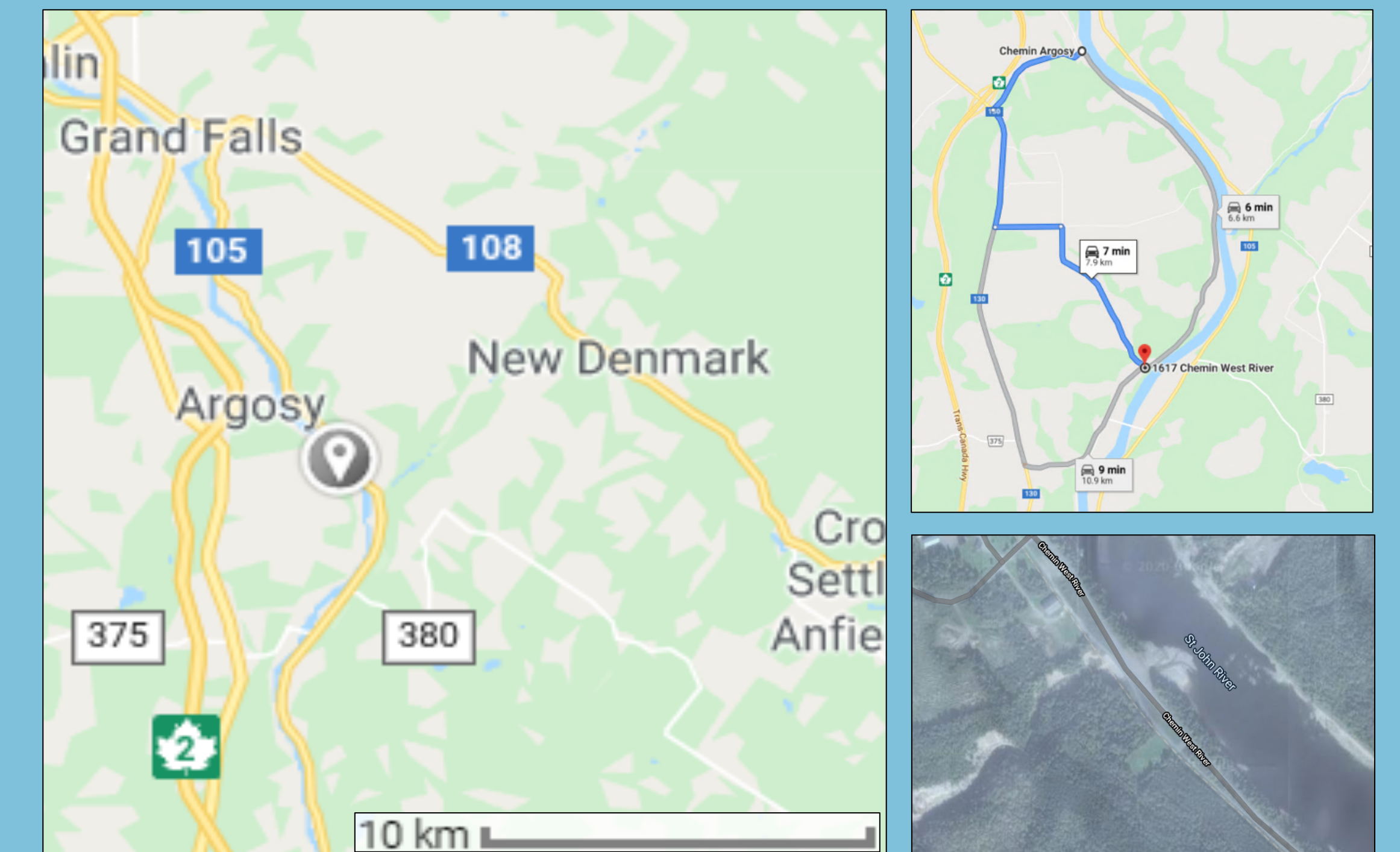
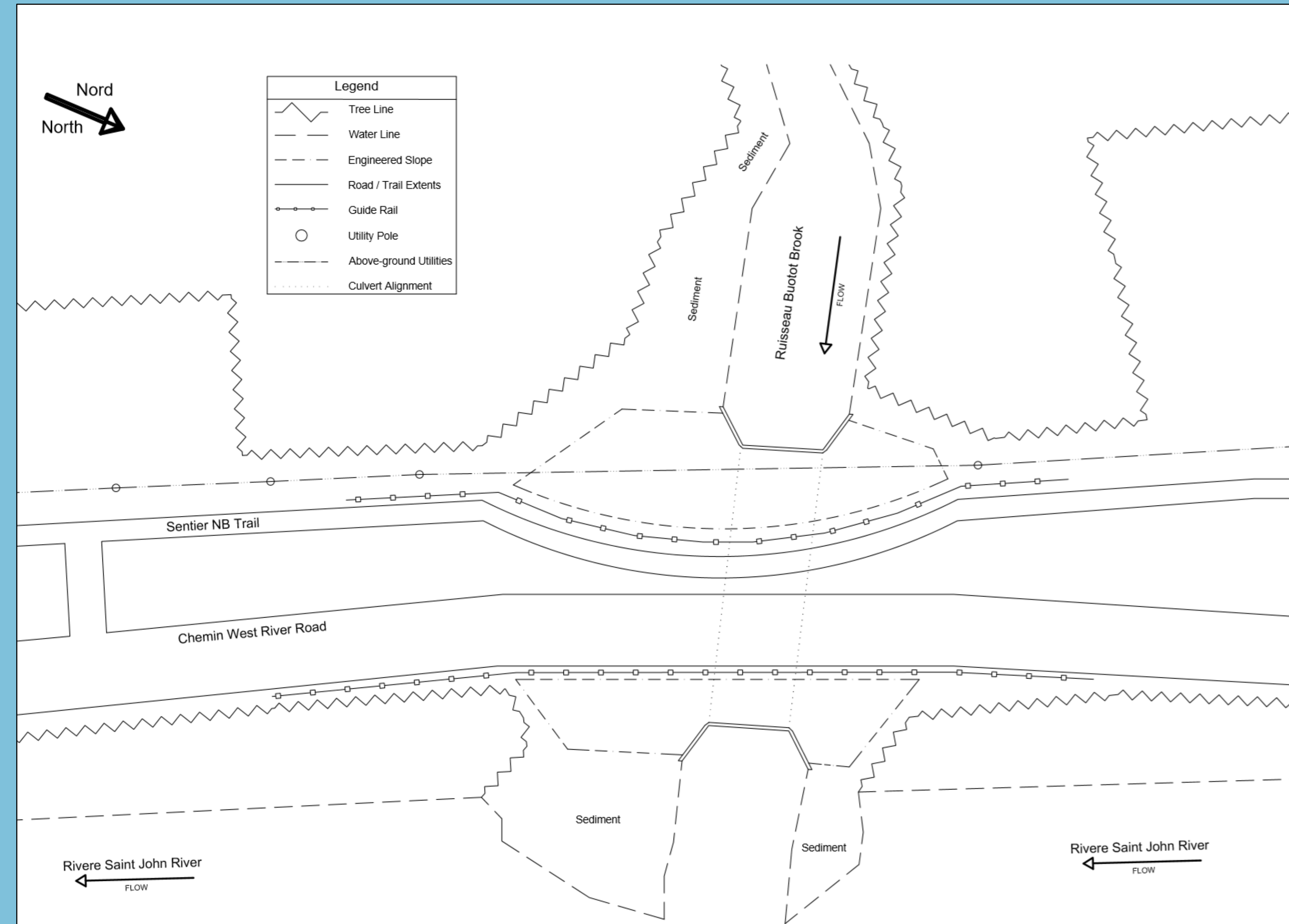


Boutot Brook Culvert Replacement

BDLTZ Consulting
 Bradley Chapman – Dylon Montgomery – Liam Bradley – Taylor Wood – Zach Doiron
 Client: Lindon Miller, DTI

Site Design



- ### Goal
- The goal of this project was to find a solution for the failing Boutot Brook Twin Culvert,
 - The twin culvert is plugging with sediment, preventing water flow and fish passage.

- ### Design Considerations
- Boutot Brook flowrate
 - Fish passage
 - Structural integrity
 - Bedload transport
 - Climate change
 - Road access
 - Sustainability and environmental impact
 - Cost

- ### Project Scope
- Conducted site visit and analysis
 - Developed alternatives
 - Optimized preferred design
 - Completed cost and sustainability analyses

- ### Hydraulics Analysis
- **Catchment Area:** 30.9 km²
 - **Extreme Daily Rainfall:** 83.6 mm
 - **Peak Design Flow:** 36 m³/s
 - **Climate Change:** Peak design flow includes 20% increase to account for future extreme precipitation events.

- ### Traffic Analysis
- **Average Annual Daily Traffic:** 290 vehicles/day
 - To accommodate construction, West River Road will be closed to through traffic at the brook crossing.
 - One main detour route will be available.

Cost Estimate

Present Value, CAD

• Construction/Materials	\$ 1,660,400
• Total Expected Life Cycle	\$ 1,868,800
• Expected Range	\$ 439,900



Culvert Design

