Rehabilitation of St. Marys Wycliffe Bridge in British Columbia, Canada

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Existing Bridge
Existing Bridge
Existing Bridge
Howe Truss Detail
Existing Bridge
Inspection: Deck Level Deterioration
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Inspection: Deck Level Deterioration
Inspection: Queenpost Truss Deterioration
Inspection: Queenpost Truss Deterioration
Inspection: Queenpost Truss Deterioration
Inspection: Substructure Deterioration
Inspection: Substructure Deterioration
Inspection: Substructure Deterioration
Inspection: Substructure Deterioration
Inspection: South Slope Movement
Inspection: South Slope Movement
Inspection: South Slope Movement
Inspection: Howe Truss
Inspection: Howe Truss
Inspection: Main Piers
Inspection: Main Piers
Bridge Rehabilitation Design

Required:
- Double load limit to 36 tonnes
- Pedestrians and cyclists to share roadway
- Drastically reduce maintenance requirements
- Mitigate south slope movement problem

Solution:
- Remove entire deck and barrier system
- Keep main Howe truss span (55m), from floorbeams down
- Keep existing concrete piers
- Remove both queenpost spans and all trestle spans
- Build new concrete abutments and new north bent
- New 28 m and 18m/18m glulam girder spans
- Select truss strengthening
- Complete new deck system and crash-rated barriers, cyclist height
Bridge Rehabilitation Design
New Cross-section: Howe Truss Span

- 2 additional floorbeams at each panel pt (see note 3)
- New sawn timber deck
- New timber strut (203x203) attached to midpoint of diagonals
- Existing timber Howe truss
- New steel bracket supporting bracing
- New steel rod bracing
- New bracing attached at panel points (in same plane as diagonals, 1 set in each panel)
New Cross-section: Glulam Girder Approach Spans
New Deck System
New Crash-rated Barrier (cyclist height)
Construction
Supplemental Floorbeams
Ready for Deck
North Glulam Spans
Construction
Stringer Installation
Decking
Glulam Girders
Glulam Spans
Truss Rehabilitation & Strengthening
Truss Rehabilitation & Strengthening
Truss Rehabilitation & Strengthening
Truss Rehabilitation & Strengthening
Completed Bridge
Completed Bridge
Completed Bridge: Barriers
Completed Bridge
Completed Bridge

![Bridge Load Limit Sign](image)

**BRIDGE LOAD LIMIT**

- **Single Axle**: 9,000 kg
- **Tandem Axle**: 17,000 kg
- **Tridem Axle**: 17,000 kg

G.V.W. 36,000 kg
Thank You For Your Attention
Questions?