

# Upgrading the Yellowhead Highway in Jasper National Park

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## Abstract

The Yellowhead Highway (Highway 16) is a major east-west highway connection in Western Canada. A 77 km segment of the highway is located in Jasper National Park, including nine bridges, falls under the jurisdiction of Parks Canada. These bridges were built in the 1960s using two general forms, precast prestressed I-girders and precast prestressed inverted u-shaped girders (also known as FC girders). Following the identification of ongoing deterioration, a multi-year program was developed to upgrade the corridor for CL-800 loading. Two bridges were identified for strengthening and general rehabilitation, six bridges for partial (superstructure) replacement and the final bridge for full replacement. Designs were intended to enhance the expected service life of the structures, utilizing as much of the original structures as possible. Diligent planning was required to minimize the overall project environmental impact.

**Keywords:** Bridges, Concrete, Prestressing, Assessment / Repair, Rehabilitation, Structures and Environment.

## 1 Introduction

The Yellowhead Highway (Highway 16) is a major east-west highway connection in Western Canada. A 77 km segment of the highway is located in Jasper National Park, a UNESCO World Heritage Site. This segment, including nine bridges, falls under the jurisdiction and responsibility of Parks Canada.

The bridges in this segment of highway were constructed between 1960 and 1967, and starting circa 2012, the need for replacement or rehabilitation became more apparent due to the ongoing deterioration and an increased number of overload permit requests.

## 2 Existing Bridges

The existing bridges generally fall into two types as indicated in Table 1 below and as described in the subsequent sections.

*Table 1. Existing Bridges*

Name	Type of Structure
Fiddle River Bridge	1
Rocky River Bridge No. 2	2
Rocky River Bridge No. 1	2
Athabasca River Bridge East	2
Athabasca River Bridge West	2
Snaring River Bridge	1
Miette River Bridge	2
Meadow Creek Bridge	2
Clairvaux Creek Bridge	2