

# Reconnecting a vital water supply to a town's reservoir

## Bridging Case Study



**Westport Bridge, Westport, New Zealand**

**m|a|b|e|y| bridge**

**Clients:** Hadlee and Brunton, Buller District Council | **Solution:** Compact 200™

## The Challenge

Westport is a town on the South Island of New Zealand, surrounded by mountains and bushland. The town's water supply is fed by a 120-year-old, 2.5km gravity system that consists of four hand-dug tunnels linked by a series of timber flumes. The longest of the tunnels, which was 1.2 km long x 200m deep, collapsed meaning a temporary emergency system had to be put in place to bypass the tunnels.

Westport is also reliant on tourism, and the locals had complained that the inadequate water supply was affecting their businesses. The tunnel urgently needed re-lining which trenchless HDD specialists Hadlee and Brunton proposed to do utilising a combination of steel and polyethene to provide a continuous 2.5km gravity pipeline from the intake to an existing water treatment reservoir.

To achieve this meant access was needed from the intake side of the tunnel over an existing 12m high x 40m wide river. Some form of scaffolding or bridging was required to support the tunnelling rods. Additionally, access was limited to the site, and the tunnel entrance was positioned on the side of a blank cliff face with no access or landing area. The river below was prone to flash flooding during heavy rain events which is a regular occurrence on the West Coast.

## The Solution

Hadlee and Brunton chose a modular bridge to act as a supporting platform to allow the pipe to be fed over the river and into the tunnel. Mabey Bridge's C200™ solution was chosen as the optimum solution to provide the customer with a product that suited the requirements they needed. These requirements included meeting the project deadline, staying within budget and most importantly offer a robust and safe working structure for the duration of the project.

A small ledge was hand excavated on the side of the cliff then a 1.8T excavator was helicoptered in to break out an alcove and landing area for the bridge. The new bridge was tail-launched into a small tight 120-year-old cave opening. It comprised a 40m (13 bay) 2.1m wide footbridge to DSH configuration.

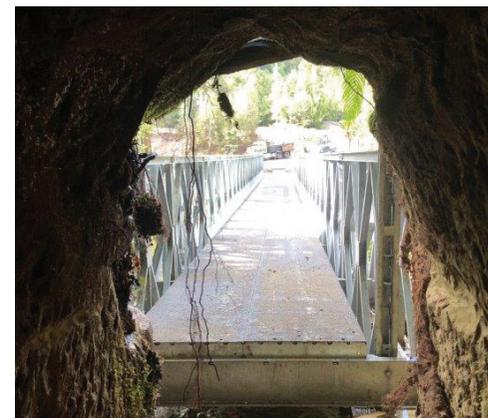
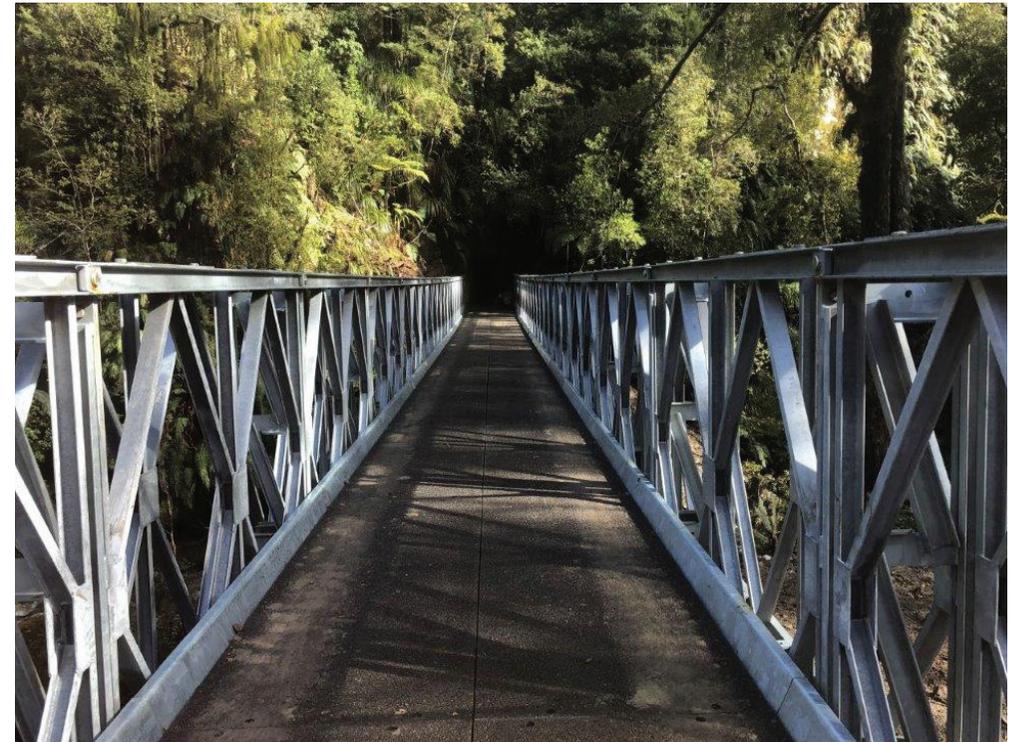
Mabey's Engineering Manager, John Wilson, supervised the installation providing significant site support.

## The Result

The new bridge successfully supported the Hadlee and Brunton's tunnelling equipment and rods throughout the installation procedure and allowed a 5T excavator to cross as and when required. The bridge facilitated the installation of the 1.2 km 813mm diameter continuous steel pipeline, which can supply over 10 million litres of freshwater every day.

Without the new pipework, Westport would still be without a permanent water supply.

During the year-long project, Westport experienced one of its wettest years on record with the river flooding every month. Mabey Bridge's solution has enabled Hadlee & Brunton to successfully provide a permanent water supply into a challenging and remote location, and, compared to other options such as scaffolding, in a safer and more cost-efficient way.



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