Emergency Bridging for the North Canterbury Earthquakes

By Daniel Helm
Overview

Design and construct a bridge in six days:

Key points:

- The Bailey Bridge
- South Island Bailey Bridge Services Contract (SIBBS)
- The Wandle River bridge
- Design and construct
Wandle River and the Inland Road

- Wandle River is 10km north of Waiau
- 2.5 hours drive from Christchurch
- Only viable route into Kaikoura
- Directive to have road open by Sunday (7 days after the earthquake)
The finished product

From this...

To this...

In 6 days
The Bailey Bridge
NZTA, Opus and Downer involved

NZTA own all the stock

11,000 components in stock in South Island, similar number in the North Island

30 complete bridge sets per island
**Timeline**

**Wednesday 16 November**
Initial request, site visit, provisional foundation and super structure design completed

**Thursday 17 November**
Construct foundations, extend bridge length to avoid slope stability issues, revised design completed, foundations completed, trucks loaded in Chch

**Friday 18-Saturday 19 November**
Construct bridge

**Sunday 20 November**
Launch and land bridge

**Monday 21 November**
Deck completed, approach roads completed, ready for traffic
Pre-construction
Foundations

- Onsite test of subgrade
- Simple compacted hard fill foundations
- Material sourced from river
- Lab testing of river run material
- Rock armour in place
- Extend bridge to avoid slope stability issues
- Sleeper mats providing extra FOS
Bridge Construction

11 bay TSCR bridge
70t weight
33m clear span
Class 1 loading
Launching
Completed Bridge
Questions?