



# Waikato Expressway

## Rangiriri Section

December 2014

# Interchanges rise up over site



Te Kauwhata interchange is taking shape

## Public open day

Want to know more about the project? We will be holding a public information day on Wednesday 11 February 2015 at the Te Kauwhata Rugby Clubrooms, from 3 - 7pm.

As we did earlier in 2014, it will be combined with the Longswamp Section update so we will have the project team members and NZ Transport Agency staff attending to discuss progress so far and what's ahead on both Expressway projects.

All welcome and we look forward to seeing you there.

Locals and SH1 travellers passing through can't miss the interchange bridge work which is now well under way for the Rangiriri Section of the Waikato Expressway.

Bridge beams will be placed at the Te Kauwhata interchange this month while down at the other end of the 4.8km section, beams go on to the Rangiriri interchange bridge in early March 2015.

The interchange bridge work has been a big focus on site over the winter months, and will continue over summer. But the drier weather also means earthmoving gets back into full swing.

The team moved 50,000 cubic metres of earth in spring, and have 370,000 cubic metres left to excavate, aiming to have the majority moved before the end of this summer.

There are 60 machines working on site every day on earthworks alone. Each articulated dump truck can carry 30 tonnes or 17.5 cubic metres of loose material.

"Earthworks is a significant portion of the project and is an enabler to the mainline drainage and roading components," says Fletcher Construction project manager Charles Stokes.

"The volcanic material being excavated is a



Work continues on the Rangiriri interchange

challenge to work with and has to be extensively dried back before it can be compacted as structural fill."

A lot of unwanted material finishes up in two disposal areas on either side of State Highway 1, including the big ravine referred to as DOC Gully near Te Kauwhata Road.

Elsewhere on the project, the new roundabout layout at Te Kauwhata Road/Wayside Road is wrapping up, with additional minor work likely in the New Year.

Drainage work continues on Te Kauwhata Road.

Looking ahead, temporary traffic switches will occur once the Rangiriri bridge is built and there will be a traffic switch south of Rangiriri late in this summer season.

Preparation of the final alignment south of Rangiriri is under way. The 80km/h speed restrictions have been extended further south to allow for construction traffic to enter and exit the site from the state highway. This is required to ensure the safety of all road users.



**KEY**

- Existing SH1
- Waikato Expressway Rangiriri section
- Waikato Expressway Longswamp section
- Road to be closed

0 100m 200m 500m

## Expressway overview

This project is part of the larger Waikato Expressway programme - one of seven roads of national significance for New Zealand.

**Sections update:**

- Longswamp - investigation report to be completed in December, construction 2016-2018
- Rangiriri - under construction, opens late 2016
- Huntly - tendering under way for design and construction, target opening 2019
- Ngaruawahia - opened December 2013
- Te Rapa - opened December 2012
- Hamilton - specimen design, target opening 2019
- Cambridge - under construction, opens 2016

## Soil gets stabilising treatment



Things are hardening up on the Rangiriri project thanks to the use of a lime and cement blend being mixed with the soil.

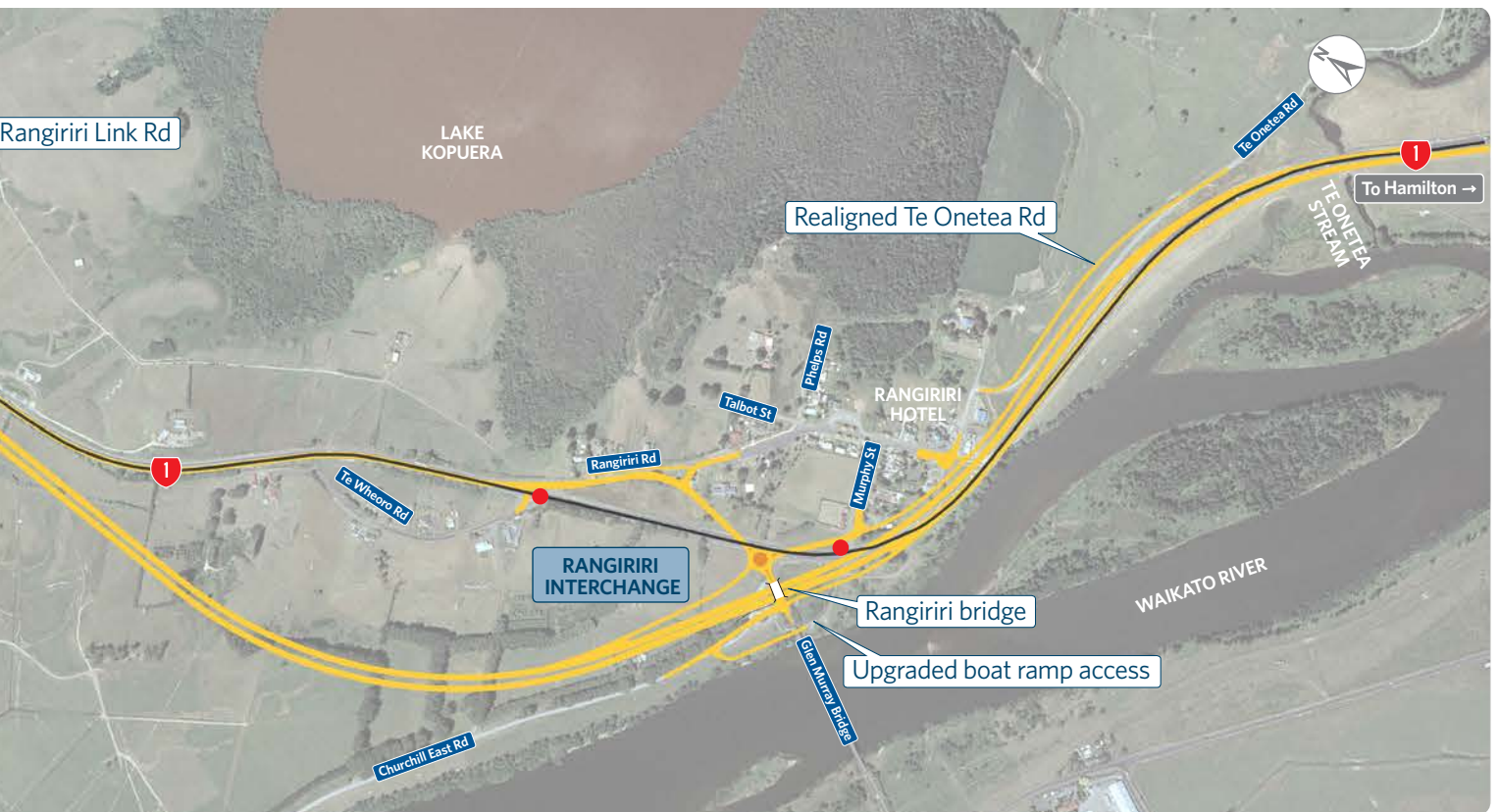
The soil stabilising process improves on-site material, allows earthworks to continue in variable weather conditions and reduces plant downtime therefore increasing production.

The process involves spreading a "quick lime" (calcium oxide) and cement blend and mixing

it with soil. Stabilised soil then gets compacted and left overnight.

This produces significant increases in soil strength over a relatively short time, allowing the next layer of material to be placed.

One run of a loaded spreader truck, holding six tonnes of lime and cement, can cover 800 square metres. Each spreader truck gets filled multiple times throughout the day.



## Bridge beams ready to go



Building interchange bridges requires beams. Big, strong, long ones.

The beams have arrived on site and vary in length from bridge to bridge. The longest span for the Te Kauwhata bridge is 19.7m and shortest span 18.5m. Rangiriri bridge beams are 17.5m on both spans. Thirty beams will be used on the Te Kauwhata bridge and 24 at Rangiriri.

The beams are pre-stressed concrete single hollow core beams. Concrete is cast around steel tendons – cables or bars – while they

are under tension. The concrete bonds to the tendons as it cures, and when the tension is released it is transferred to the concrete as compression by static friction. Tension subsequently imposed on the concrete is transferred directly to the tendons. By using pre-stressed concrete beams it allows longer spans than traditional reinforced concrete.

The beams are hollow in the middle to minimise weight, but they still weigh between 24-30 tonnes each and will be put into place by a 170-tonne mobile crane.

## Taking the safety message to school



Some of the Fletcher Construction team went back to class recently – to deliver the kids at Rangiriri School a message on safety.

A key message was around what to do if a ball or something similar ends up in the construction area which borders the school.

The picture shows students listening to traffic and stakeholder manager Wendy Austin as they watch a bulldozer moving. Wendy pointed out the blind spots for the driver operating heavy machinery.

# Happy homecoming for mudfish

The Rangiriri mudfish are back, and they have a new home.

The mudfish, discovered by ecologists during environmental investigations, were caught and moved to specialised tanks at Waikato University. They were cared for by an expert team until early September when they were released into their new, purpose-built home.

Local tangata whenua, students from Rangiriri School and other invited guests, joined representatives from the NZ Transport

Agency, Fletcher Construction and Kessels Ecology for the release.

The fish were blessed by Tainui iwi, before being released into their new habitat by Kessels staff, who will monitor them for the next three years.

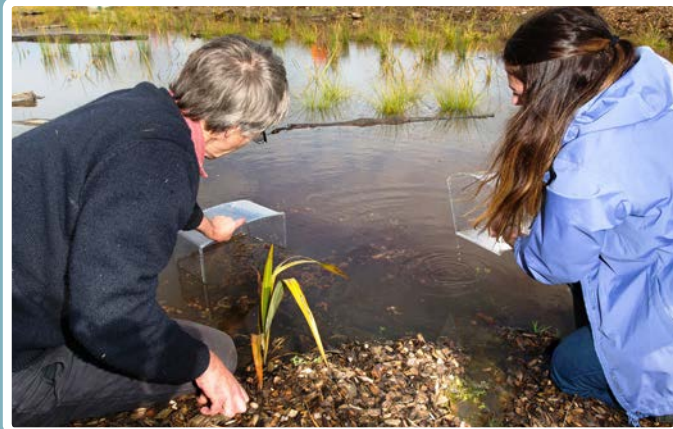
As the weather gets warmer the pond will start to dry out and the mudfish will begin to bury themselves for the summer, burrowing into the soil and remaining motionless, breathing air, until the autumn rains refill the pond



Pupils from Rangiriri School get a close look at the mudfish before release.



Highway manager Kaye Clark speaking at the function.



Kessels Ecology staff David Riddell and Alicia Catlin release some mudfish.



Ecologist Jennifer Price talks to a television crew who covered the event.

## Our contact details

For enquiries or information regarding the Rangiriri Section of the Waikato Expressway.

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