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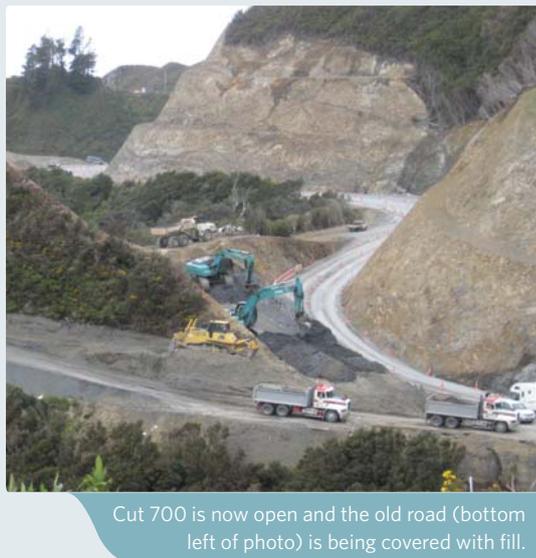
# Muldoon's Corner



## Shape-shifting continues on Rimutaka Hill Road

The team have straightened out another corner, and traffic has been travelling through 'Cut 700' since mid-September. The '700' denotes the approximate distance in metres from the start of the project, just below the summit.

The switch from the old road to this new section of SH2 had to be carried out in two stages and carefully timed to make sure that people travelling around the region for the Rugby World Cup were not delayed by roadworks.



Cut 700 is now open and the old road (bottom left of photo) is being covered with fill.

The team planned it perfectly and started the changeover mid-morning – so as not to interfere with commuters – on Tuesday, 12 September.

Downhill traffic was diverted onto the new road first, with uphill traffic permanently diverted through the cutting a week later. The old road has been ripped up and filled with the remaining material from Cut 700 to match the slope of the hillside.

During the coming month the team will gradually lower the road through the cutting to its final level. This will be 6 metres below that of the old road.

## It's our 2nd Anniversary

It is just over two year's ago that the project kicked off with an iwi blessing up on the Rimutaka summit in August 2009, and a lot has been achieved since then.

Some key milestones are:

- Fill A completed – June 2010
- Planting started in Fill A – May 2010
- Fill 1 completed – Nov 2010
- Traffic across Fill A – April 2011
- Traffic through Cut 200 – May 2011
- Traffic through Muldoon's Corner – June 2011
- Fill B completed – July 2011
- Traffic through Cut 700 – September 2011

At the start of the project we entered into a partnering agreement with our key stakeholders. During the past two years we have maintained the relationships created by that partnership, making sure that everyone is kept informed on each aspect of the project. The team were therefore pleased to invite our partners to Muldoon's Corner for a project update and site tour to celebrate our second anniversary.

Although we report monthly on elements of the project, such as the amount of earth that has been moved and the height of the cuts into the hillside, many of our partners were astounded by the sheer scale of the project once they were standing out on site.

# Soldier, Soldier won't you marry me?

You can ask, but the 24 soldiers we have up on Muldoon's aren't the marrying kind. In fact, they aren't even the human kind - they are 11 metre long columns that form a 6 metre high, 28 metre long, retaining wall at the side of the road.

These columns are called soldier piles because they stand up straight in a row - just like well-trained soldiers standing to attention.

The 600mm diameter piles are embedded 4 metres into rock and made of reinforced concrete. Rock anchors, a bit like giant nails, are drilled through the top of each soldier pile, under the road and back into the bedrock of the hillside. Each rock anchor is about 12 metres long. The piles are also linked together and capped by a 3 metre deep concrete beam which will support the finished road.

When it's finished you will not be able to see the wall from the road, just the guardrail which will be in place to deflect any vehicles back onto the road should the need arise.

There are other types of retaining walls being used on the project which are quicker and easier to build. However, we needed a design and method of construction at this particular location that would allow us to build the wall while still keeping two lanes available for traffic.

We started building the wall in June 2011 and should finish by the end of October.



Soldier piles under construction. Shuttering is placed around the steel reinforcing like a big tube into which concrete is poured to form the pile.

## And while we are talking of soldiers...

The real kind have worked on the Rimutaka Hill road before, most recently during World War II.

The New Zealand Historic Places Trust (NZHPT) identified the presence of a WWII tunnel underneath the road during the consent process for the project, and highlighted the need for its protection. Soldiers dug the tunnel during WWII ready to fill with explosives, to blow up the road if the enemy invaded. NZHPT tell us that the tunnel was part of the wartime defences of Wellington, along with the more familiar pillboxes and anti-aircraft gun emplacements set at strategic points around the Wellington coast.

Thorough checking ensured that the tunnel was completely empty, but it is forked and goes back farther than expected - more than 6 metres. This meant we had to slightly amend the soldier pile wall design and realign a culvert so as not to interfere with this quirky slice of history.



Some of our partners checked out the WWII tunnel for themselves during their site visit last month.



## Coming up

- Completing the earthworks
- Completing retaining walls 1 (gabion basket wall) and retaining wall 2 (Anchored soldier pile wall)
- Continuing with drainage works (rock-fall channels, kerb and channels, culverts)
- Starting on the rock fall protection measures - rock bolts, fences, mesh and shotcreting specific cut zones.
- Installing guardrail
- Continuing with pavement (road construction), including surfacing - beginning early November.

## Our contact details

For more information  
0800 100 082

**Helen Pinson**  
**Ph:** 04 894 5229  
**Email:** [helen.pinson@nzta.govt.nz](mailto:helen.pinson@nzta.govt.nz)  
[www.nzta.govt.nz/muldoons-corner](http://www.nzta.govt.nz/muldoons-corner)



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