



The Bulletin Kaikoura earthquake update

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MILESTONE: RAIL FREIGHT SERVICES RESUME ON 15 SEPTEMBER

The first freight services to run again on the Main North Line (MNL) between Picton and Christchurch will begin next Friday (15 September), just 10 months after Kaikoura's devastating earthquake.

The first train from Picton to Christchurch will run during the day, but after that KiwiRail will run a limited, low-frequency service at night.

This is to allow the work of rebuilding the road, and further repairs to the MNL to continue as there is still a sizeable amount of work to be done before the rail line is returned to its pre-quake state.

The return of freight services will be marked with celebrations in Christchurch and Kaikoura as the first train travels down the line (for details see page 9).

KiwiRail says before last year's earthquake one million tonnes of freight was moved on the MNL each year.

The limited reopening will take 2000 trucks a month off the alternate Picton to Christchurch route and the Inland Road (Route 70) which have been the main routes to shift freight south and to Kaikoura since the earthquake. This will help improve journey times and make it safer for everyone.



This weekly bulletin provides the latest information about the rebuild of road and rail networks damaged by the Kaikoura earthquake in November 2016. The bulletin is produced by the North Canterbury Transport Infrastructure Recovery (NCTIR) - an alliance representing the NZ Transport Agency and KiwiRail, on behalf of Government.





THANK YOU EVERYONE - MAJOR PROGRESS MADE TOWARDS SH1 REOPENING PROGRESS SOUTH

Thanks to local community support, a five-day road closure this week of State Highway 1 south of Kaikoura has enabled essential rebuild and resilience progress to be made on the road and rail network hugging the 10km coastline between Peketa and Goose Bay.

This narrow corridor had 100 plus workers crawling over the rock faces working on a number of unstable earthquake sites. With the sheer cliffs and the rugged coastline, they're literally working between a 'rock and a hard place'.

The current weekly schedule of the highway being closed Tuesday to Thursday and open Friday to Monday while allowing the community reasonable access and allows good progress to be made along this section of the road. However, some of the more gnarly and high-impact work has been on hold because it is too dangerous to do while vehicles are travelling through.

This week's five-day closure enabled multiple crews to get stuck in. The main focus was on deconstructing slips to remove high-risk materials - essentially a managed landslide - on slopes above the road and rail. With the opportunity provided by the closure, the earthworks team worked hard on the ongoing stabilisation of slips including one north of the iconic Paratitahi tunnels (pictured), while rail crew took full advantage to make unimpeded progress on Tunnel 13 and Tunnel 6.

This burst of combined activity is another vital step towards reopening SH1 at the end of the year.



OPEN/CLOSE SCHEDULE THIS WEEKEND

SH1 south of Kaikoura reopens for a local drive-through today (8 September) at 6pm, before closing for the night. It then reopens as normal on Saturday 9 September, from 7am to 6pm through to Monday night.

REMINDER: Open/Close Schedule runs until end of year

There is still a lot of work to do towards the reopening of SH1. For that reason, the current four days open/three days closed schedule will continue through to the end of year. The Inland Road (Route 70) is available for travel when SH1 south is closed. All dates are subject to weather and other conditions.

Thank you

We know this work impacts on your life and that it will continue to do so as we work to get the transport networks re-opened. We apologise for the inconvenience caused by these necessary closures.





CONSTRUCTION RAMPING UP ON SEAWALL NORTH OF OHAU STREAM

Last year's earthquake brought a large landslide down at Site 7 at Ohau Point, north of Kaikoura. In order to enable the transport corridor to be opened safely and provide reliable service, the existing road and rail alignment has been shifted towards the sea.

A new road is being constructed on the seashore and 1600 five-tonne concrete blocks are about to be laid on site to make up a seawall stretching around the coast.

NZ Transport Agency's principal structures engineer John Reynolds says he has full confidence in what the teams are doing on site.

'The end product, from a structures point of view, will be very resilient; it's a very robust design,' says John.

His role is to keep an oversight on the project and as the client's representative he is happy with what's being achieved.

'Six weeks ago crews were establishing on site and now they're reaching momentum; they've got their methodology sorted and more materials and people are arriving on site every day,' says John.

Project engineer, Clark Butcher says that logistically the site will be much busier from now.

'With the foundation for the sea walls now complete, trucks will be delivering thousands of blocks to site over the next few months,' says Clark.

Unlike the other two sites where seawalls are being built, there is less traffic sharing the road north of Ohau Point and this means the road is less congested, helping speed up work at this site.

'We're about to hit some great milestones and the site is going to look completely different within just a few weeks,' says Clark.



THE SLIP WITH ATTITUDE

During last November's earthquake, as well as the ten major landslides, an additional 32 secondary slips came down across the northern coast which didn't restrict construction access.

Located north of Rakautara, adjacent to a NCTIR temporary earthworks stockpile site, one of these slips was reactivated by the two cyclones earlier this year.

Affectionately known by some of the team as 'Slippy McSlip Face', this slip was cleared away by excavators and dump trucks to allow the rail line to reopen.

An earthworks and rail operation is currently underway to enable the rail line to operate reliably by undertaking stabilisation methods and shifting the track further away from the landslide.

Last week about 7000 cubic metres of unstable rock and debris was removed during a helicopter sluicing and excavator exercise. The rail embankment has now been widened, new ballast placed and the track moved across up to four metres. The next step involves the placement of concrete blocks to form a low wall and working platform up the slope to allow the installation of the permanent rockfall protection structure.





DRILLING FOR SOLUTIONS AT PAPAROA NORTH OF KAIKOURA

The slip at Paparoa north of Kaikoura has been buzzing with activity lately, largely around site and survey monitoring. Survey prisms have been strategically placed on the face of the slip to monitor any movement at a surface level, and asset assessment manager Brendon Silcock explains that inclinometers (instrument for measuring the angle of slope) will be installed to measure any movement of the slope itself.

For this project, specialist drill rigs have been brought on site. These rigs are lifted in pieces by helicopter and put together onsite (see photo), where they bore into the hill and install a tube in a grout casing that goes deep into the hill slope from the top of the slip, as well as from platforms that have been built into the face by abseilers. Once the inclinometer tubing is installed, a device is lowered into the tube to measure movement of the slope. 'If we drill deep enough, we will go through the possible failure, in order to see what is happening at depth, and this is really what we are looking to do,' says Brendon.

'The instrumentation is crucial to help identify and quantify any potential movement within the slope, which will help the team to determine the final design solution for the slip,' says asset assessment project engineer Mike Lang.



RAIL AND ROAD WORKING TOGETHER TO CONNECT THE DOTS

As KiwiRail celebrates the return of freight along the Main North Line between Picton and Christchurch, they are also helping with the rebuild of the road and movement of construction materials.

The main way rail will assist with the road opening is by moving on site construction material such as concrete blocks and other bridge materials from Christchurch.

'Recently a train was going north and we realised we needed this casing which was about 12 metres long to be transported to a job site north of Ohau Point,' says rail engineering manager Peter Dautermann.

'It would have taken eight to nine hours minimum if it was transported by truck, but we were able to get it there by train in an hour. This simplified the process of connecting the dots for work sites north and south,' says Peter.

'There are at least 3000 concrete blocks for the building of the seawall that need to be transported, and they weigh five tonne a piece,' says Peter.

The blocks are shifted to site four or five at a time on the back of a truck. Dautermann explains that this means, 'For every 1000 blocks KiwiRail work train shifts north, we will take 200 to 250 trucks off the already congested narrow windy construction tracks.'

It is worth noting that many of the blocks on trucks have to come in via the Inland Route. 'Whenever we can get freight like this off the road it helps to facilitate the repair of the road and allows the tracks to transport other materials instead,' says Peter.





140 BRIDGE BEAMS ON THE MOVE - QUESTIONS ANSWERED

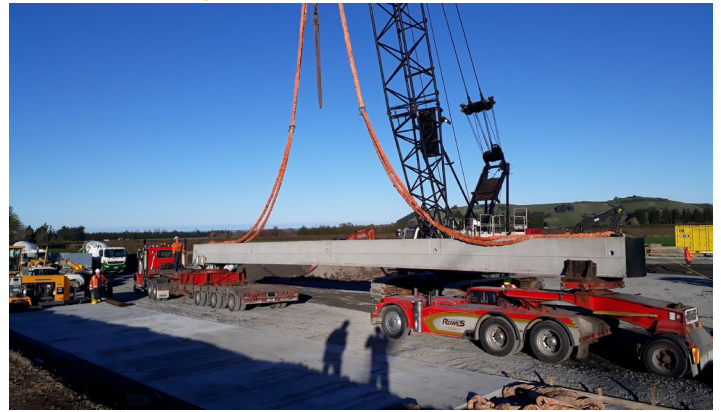
For the last two weeks motorists travelling through the Upper South Island have been sharing the road with 28 metre (bumper-to-bumper) truck loads moving bridge beams to Kaikoura, via Lewis Pass and the Inland Road (Route 70) through Waiiau/ Mt Lyford. The beams are heading to Irongate, north of Kaikoura for a new bridge build, as well as smaller bridge sites north of Kaikoura. Here are some of your questions answered.

Why are the beams coming from the North Island?

In order for SH1 north of Kaikoura to reopen before the end of the year, several bridges need to be built. They include the new Irongate bridge, Bridge 908 south of Ward and three debris flow bridges.

Because of the time and supply constraints of the project, a total of 140 bridge beams are coming from several different suppliers and locations, Rotorua, Hastings and Christchurch branches of Concrete Structures, Tauranga-based Heb Precast and Christchurch-based Staunton.

It takes roughly one day to precast each 20 to 21 metre x 11.5 metre bridge beam.



What is the cost of transporting the bridge beams from the North Island to Kaikoura?

It will cost about 50 percent more to transport the beams from the North Island to Kaikoura, however this cost is offset

by the savings associated with being able to reopen the road much sooner than if all the beams were precast in Christchurch.

Could the bridge beams be sent to Kaikoura by rail?

Rail was an option that was considered but this would have delayed the work programme until the Main North Line was open and a special turntable would have had to be built to allow for the movement of each beam as the train went around a bend.

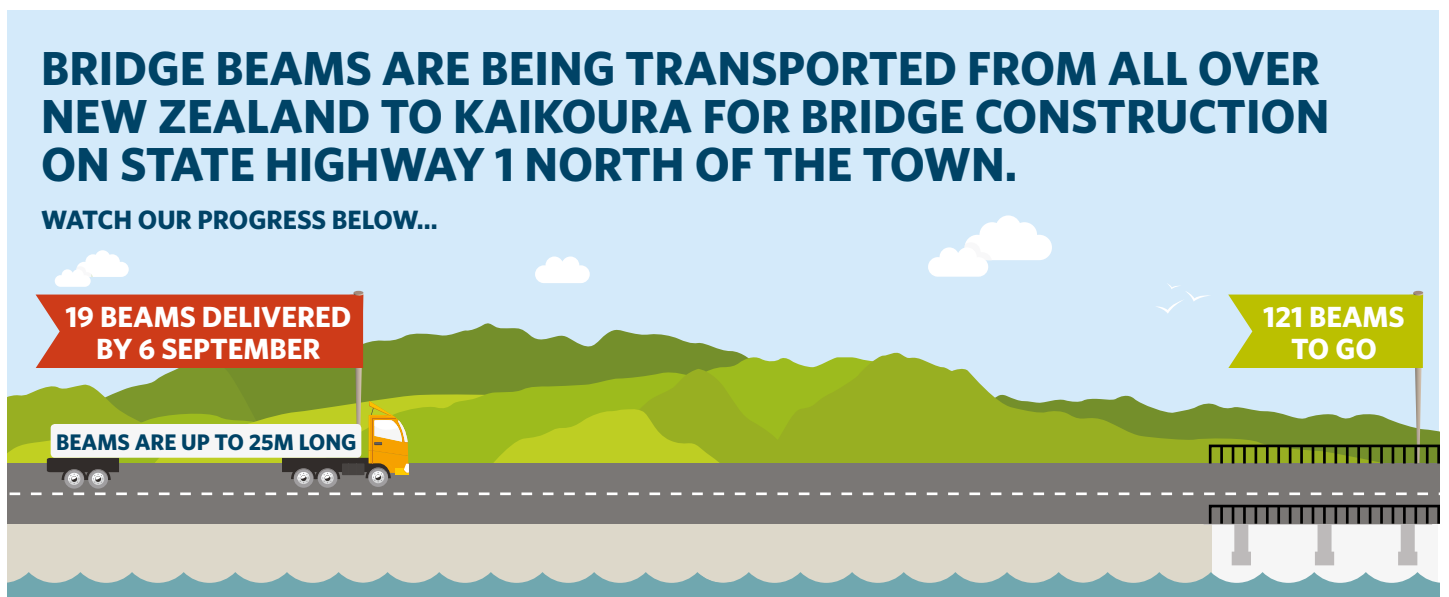
BRIDGE BEAMS ARE BEING TRANSPORTED FROM ALL OVER NEW ZEALAND TO KAIKOURA FOR BRIDGE CONSTRUCTION ON STATE HIGHWAY 1 NORTH OF THE TOWN.

WATCH OUR PROGRESS BELOW...

19 BEAMS DELIVERED BY 6 SEPTEMBER

121 BEAMS TO GO

BEAMS ARE UP TO 25M LONG





GREAT PROGRESS BEING MADE AT KAIKOURA'S OHAU POINT - SEALS PROTECTED, SEA WALLS CONSTRUCTED

New video footage released this week

highlights the challenges the North Canterbury Transport Infrastructure Recovery (NCTIR) alliance crews working at Ohau Point, north of Kaikoura, are facing daily as they construct a new highway around the base of the major landslide.

Ohau is one of the largest and most challenging landslides still to be cleared, stretching 630 metres around New Zealand's famous Fur Seal Sanctuary. More than 100,000 cubic metres of material fell down during last November's earthquake and a clearance and rebuild operation has been underway for most of this year to reconnect communities.

'While abseilers are still working to make safe the northern face of the slip, teams have spent the winter months constructing the foundations for a new seawall where a road and shared path will eventually sit,' says NZ Transport Agency Earthquake Recovery Manager Steve Mutton.

'Despite freezing cold conditions and sudden tidal changes, the crews have made great progress,' he says.

The new footage also shows for the first time, the teams working to keep the seal colony safe by carefully moving pups and adult seals out of the construction site. Permits granted under the Marine Mammals Protection Act 1978 mean NCTIR team members can physically move the seals. Using helicopters and specially trained seal handlers, the seals are shifted out of harm's way so machinery can continue making progress.

'Kaikoura's natural environment is beautiful and special and we want to look after it. Every morning our crews move the seals to safety before the rest of our team starts work,' Steve says.

The video can be viewed here (bit.ly/SealsOhauPoint)



HAROLD VISITS THE PROJECT SITE

Harold from the Life Education Trust was determined to get from Blenheim to Kaikoura this week, and met with some of the NCTIR crew at the Hapuku helicopter base.

Not one to miss out on the action, Harold was escorted to a couple of work sites and offered friendly smiles and waves to those heading to work. He also made a surprise visit to Kaikoura Suburban School and got the kids excited about the upcoming Kaikoura Whale Run where he will be joining in on the fun. Way to go, Harold!

Life Education Trust is an on-going health-based education programme that aims to educate and empower children to make healthy choices so they can live full and healthy lives.





SAFETY FIRST

Safety barriers are another safety measure for crew and rail staff while working next to the railway. These barriers, called Vortok fences, are quick to install and clip onto the rail foot.

So far 3km of temporary safety barriers have been installed over the last few months north and south of Kaikoura by a two-man band.

The safety fencing is used to protect workers who are working alongside the rail and also means work trains can still pass safely by.

Rail Protection Officers brief the crew about the fencing system before starting work insuring they know how to release the fencing quickly if needed.



POST-WINTER REMEDIATION RAMP UP

A number of sites along the alternate Picton to Christchurch route are ramping up for post-winter reconstruction following deterioration under the increased traffic load. Since the Kaikoura earthquake there is now up to four times the amount of traffic on this route - particularly heavy vehicles - which it was never designed for.

Drivers will see a number of work sites on SH63 (runs between St Arnaud and Blenheim), with culvert replacements (as pictured) also underway to improve resilience and correct alignment. Some shoulder widening will also be done.

Work on each site could take up to six weeks - subject to weather and ground conditions, with short stop/go delays of up to two minutes per site.



TAKE CARE AROUND GLYNN WYE SAFETY IMPROVEMENT WORK

The damaged retaining wall supporting the narrow, winding, steep section of Lewis Pass Road near Glynn Wye (SH7 west of the Hanmer Springs turnoff) is being replaced and topped off by a new safety barrier.

As part of the \$60m Government funding for improvements along this route, the existing wall is being dug up and replaced by a larger more resilient wall.

Due to the narrowness of this site and steep drop-off, the crew need to use one lane to work in. Stop/go is used during the day with traffic lights at night for safety. Allow for around a two minute delay.

Safety Alert: Drivers are thanked for their patience and asked to take extra care so everyone gets home safe at night. With all the gear being used, the crew don't always hear traffic approaching and describe it as 'quite scary' when someone speeds through this narrow site.





STRAYING TO THE CENTRE CAN BE DEADLY

Speed, fatigue and bad habits - they all contribute to crossing the centre line (as shown in these recent photos from SH65 on the alternate Picton to Christchurch route). And, the ones stopped and spoken to by Police are the lucky ones.

Sergeant John Hamilton from Canterbury Road Policing says all head-on crashes involve someone crossing the centre line. 'The majority of drivers are going too fast for the corner and cross the centre line to stay on the road. This can have terrible consequences for an oncoming vehicle.'

While very picturesque, this route is narrow and winding in parts which takes time and concentration to drive. The \$60m safety improvement package has seen some of the more narrow sections widened with pull-over and passing bays also being installed for slower drivers to let traffic past. But that's only part of the solution.

Before starting a trip, plan your journey to understand road conditions, travel times, and where to take a break to reduce fatigue for a safe and enjoyable drive ahead.



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- Visit our website: www.nzta.govt.nz/kaikoura-earthquake-response/
- Call our freephone: **0800 NCTIR EQ** (0800 628 4737)
- Email us if you have a question: info@nctir.com
- Attend a community meeting - keep an eye on local newspapers for details
- Follow us on Facebook, see: NZ Transport Agency - South Island www.facebook.com/nztasouthisland/ and KiwiRail www.facebook.com/kiwirailNewZealand/
- For travel information about road conditions, see: www.nzta.govt.nz/traffic/regions/11

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>1500
people involved
in this historic
rebuild



One of rail's
biggest rebuilds
in NZ since
WW2

JOIN KIWIRAIL TO CELEBRATE THE FIRST FREIGHT TRAIN INTO KAIKOURA SINCE THE NOVEMBER EARTHQUAKE

KiwiRail would love the Kaikoura community to join us in cheering in the first train to arrive in the town since the earthquakes last year.

Come on down, meet the team who have been working so hard to get the line up and running, and help us to celebrate the arrival of the train – a huge milestone as we continue working to get New Zealand moving again.

The train is scheduled to roll in at 8am on 15 September. We'll have tea and scones plus some very special guests on hand to celebrate.

Join us at the Kaikoura Station any time from 7.30am – we look forward to seeing you there.