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The Bulletin Kaikoura earthquake update

WORK PROGRAMME IN THE HUNDALEE GATHERS PACE



A major repair operation is underway in the Hundalee south of Kaikoura to replace a series of earthquake-damaged retaining walls along this 55km stretch of State Highway 1 between Cheviot and Oaro.

The November 2016 earthquake left the Hundalee with significant damage to the shoulders of the road and retaining walls; safety barriers were twisted and crumpled while sections of the road crumbled. A \$6 million repair programme is now underway to strengthen the route before State Highway 1 north of Kaikoura reopens in time for Christmas.

Project engineer Richard Falloon (pictured) says crews are working across 10 sites and things are going to get busier as the deadline to reopen the road gets closer. 'Crews are tackling the worst hit areas and we have a lot of work underway. We're replacing 1km of gabion walls (stone baskets) where the edge of the road has crumbled, replacing four sections of damaged road, repairing and replacing storm water culverts and building seven new king post retaining walls,' says Richard.

The king post retaining walls are being installed in the worst hit areas and the longest of these walls stretches 60m and is expected to be completed at the end of October. When complete it will have 34 king posts. 'After drilling a 10m deep hole, we lower a large steel beam into it and this is encased in concrete to help to strengthen the edge of the road' says Richard.

Local resident Eliza Smith has spent the last two years living in the Hundalee area and says the crew has her full support. 'I think they are doing really well; it's a big job but they're doing great,' Eliza says.

The Hundalee is a challenging place to work. Steep banks drop down from the edge of the road, right where the crew needs to work. Before the permanent repairs can begin, temporary repairs have to be carried out so heavy machinery can safely operate on the edge of the road.

Because the crew is sharing the highway with motorists the working space is narrower than Richard's team would like. This means they can't use large excavators or other machinery. Relying on supplies from Kaikoura, such as metal for the road repairs, also means the crew have to juggle deliveries. 'With the road being shut Tuesday to Thursday we need to make sure we get our supplies delivered when the road is open,' says Richard.



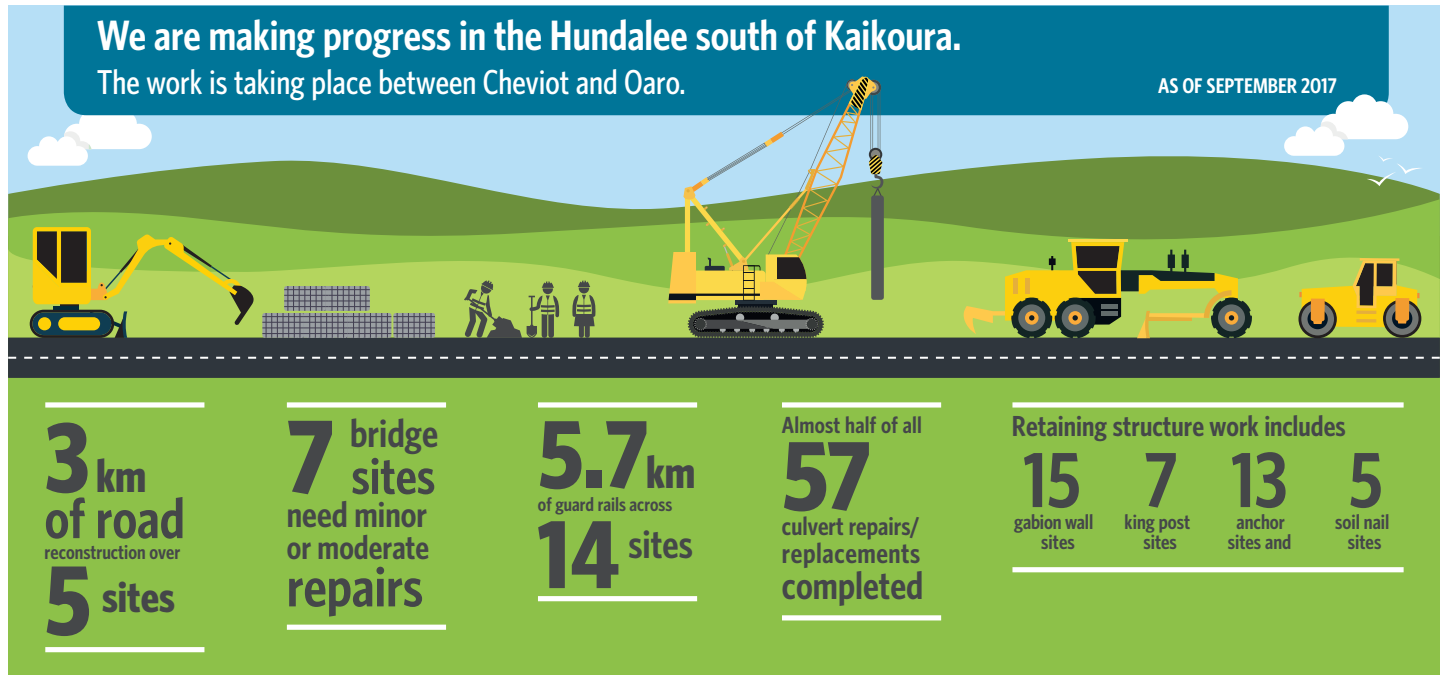
This weekly bulletin provides the latest information about the rebuild of road and rail networks damaged by the Kaikoura earthquake in November 2016. The bulletin is produced by the North Canterbury Transport Infrastructure Recovery (NCTIR) - an alliance representing the NZ Transport Agency and KiwiRail,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



The good news is that once finished, the road will be structurally sound and safer for the years ahead. New safety barriers will be installed at the right height and will be aligned with the road.

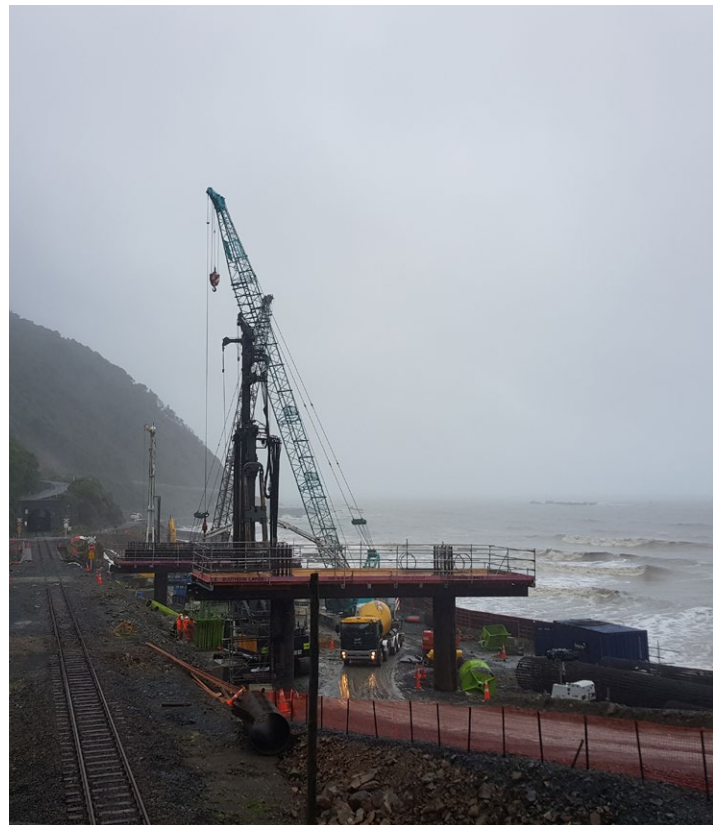
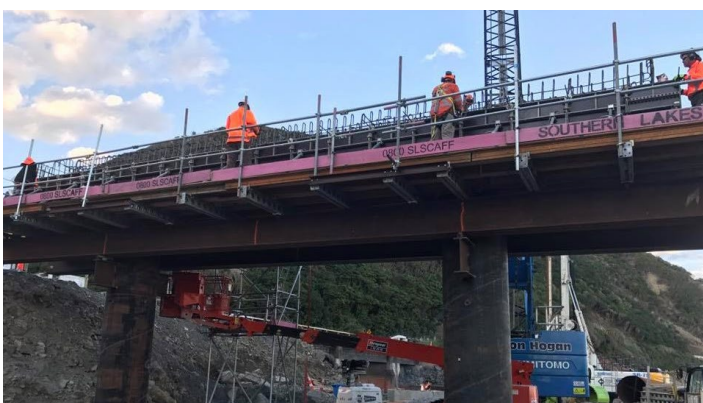
Based at a Parnassus site office (an office beside self-service petrol pumps), Richard's team of five engineers and supervisors manage the repairs of the Oaro bridge right through to the work being carried out near Cheviot. When SH1 is open, their site office/petrol station can be a busy place. 'We get the odd customer looking for some food, but luckily I haven't had to give away my lunch yet,' says Richard.

Travellers are being urged to allow extra time to travel this section of road while this work is taking place.



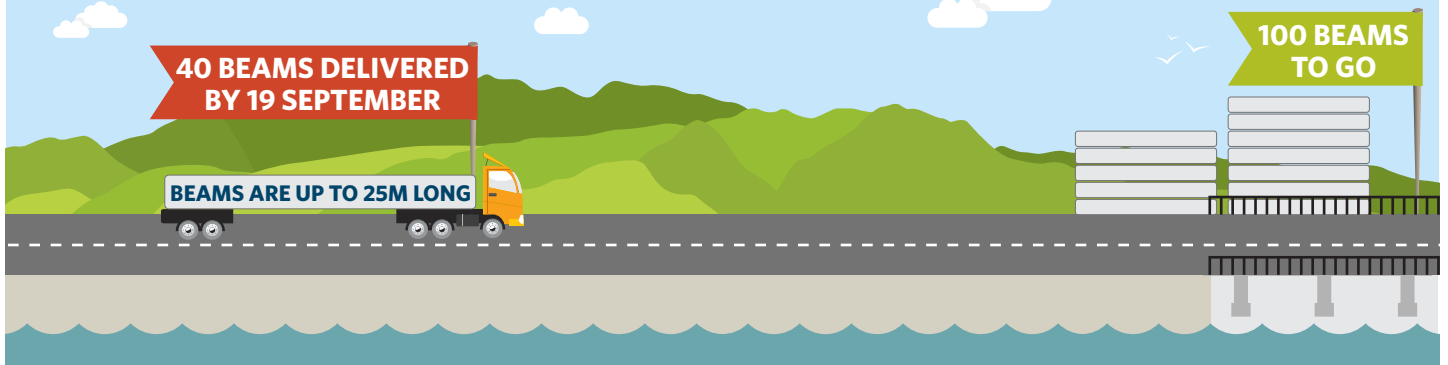
IRONGATE STREAM BRIDGE PROGRESS

These photos show work happening on the installation of the six pier heads for Irongate Stream Bridge. These pier heads will support the 22m long beams being used in the construction of the bridge deck.



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...



MATERIAL FLOW BRIDGES UPDATE

With the reopening of State Highway 1 only three months away, the structures team is working against the clock to build bridges to reconnect the communities affected by the November 2016 earthquake.

Last weekend the 100-tonne concrete decks of two rail bridges were lifted into place in the severely-quake damaged zone north of Kaikoura. Working under a mudflow activated by the quake, the team had about 36 hours to lift the bridge decks into place by two cranes - without disrupting the schedule of work and freight trains on the newly re-opened Main North Line.

In a textbook example of the teamwork required to work within the narrow transport corridor between the cliffs and the sea, the bridge's abutments had been built back in July - and then buried so rail tracks could be laid so work trains could start helping with the rebuild.

Before the bridge decks could be placed at the weekend, a KiwiRail crew needed to dismantle the railway, lifting sleepers and ballast out of the way. An earthworks team then moved in with diggers to uncover the abutments.

A team from Titan cranes from Christchurch readied the 250-tonne crane and the 160-tonne crane that would work in tandem to lift the bridge decks. And although it took weeks to prepare for, the lifting of the decks went without a hitch. The highlight? The bridge decks were a perfect fit. The KiwiRail crew was then able to reinstate the track on the bridge decks.

In the coming weeks, a further four material-flow bridges will be built in the area. Channels will be dug below the bridges to allow material from the quake-fractured hills to flow underneath SH1 and the Main North Line (MNL) without affecting the transport corridor.





REMINDER: CHANGED OPEN/CLOSED SCHEDULE FOR SH1 SOUTH

There are two changes coming to the open/closed schedule for SH1 South of Kaikoura between Peketa and Goose Bay. The first one is next week (from Monday 25 September).



REMINDER: EXTENDED WORK WEEK 1 STARTING MONDAY 25 SEPTEMBER

The first of three extended work weeks starts on Monday to remove unstable slip material between Peketa and Goose Bay. That has changed the open/closed schedule:

- Monday 25 - Friday 29 Sept: local drive-throughs at 7am and at 6pm - the road closed throughout the day and overnight
- Saturday 30 Sept - Monday 2 Oct: open all day to public (closed overnight)

Project manager Ruth Bullen (pictured right with site manager Tony Foster) says that to have the least impact on community events, the two other extended work weeks are likely to be 16 October and 6 November. We'll let you know when confirmed, and also if more schedule changes are needed for extra work after then.



UPCOMING: LONGER DAYS = NEW SUMMER OPEN/CLOSED SCHEDULE TO COME

With daylight saving starting this weekend, it will soon be light enough in the evenings to keep this section of SH1 south of Kaikoura open longer on Fridays to Mondays.

Note: this summer schedule will NOT start the same day as daylight saving starts. We'll let you know when the longer open days begin.

As experienced over the past week, timetable changes will happen with adverse weather, seismic and other issues like extra high impact work. We know these changes are disruptive and we will continue to work hard to provide as much access as it is safe to do so. We'll also let you know as quickly as we can of any changes.

Thank you for your support while our crews work to open the road by end of year. Please continue to use the Inland Road (Route 70) during any SH1 south closures which our crews continue to work hard to keep open, safe and serviceable.

Before you travel: Check www.nzta.govt.nz/traffic or phone **0800 4 HIGHWAYS** (0800 44 44 49) for real time travel information.

Please contact us if we can assist you on **0800 NCTIR EQ** (0800628 4737) or info@nctir.com



THE 60-HOUR PUSH

A 60 hour push last weekend to complete some critical rail work between Goose Bay and Peketa south of Kaikoura was a success.

The work was scheduled for the weekend to avoid affecting freight train services.

It involved a 680m stretch where the rail needed to be realigned so that freight trains can pass through at higher speeds.

Careful planning was needed for the team to successfully pull off their 60 hour push. 'We had to bring in all their material before the weekend because the quarries were closed and once we were at the work site overnight, our only way out was south,' says site engineer Thomas McCarthy.

'We had to have all of our quality testing done in advance, and we've had to get people to come in outside of normal working hours with extra plants on standby in case a plant goes down,' Thomas says.

The preparation paid off. 'Everything went smoothly, there were no health and safety incidents, traffic management went well, and all quality testing passed,' says Thomas.

EXPECT TRAINS AT ANY TIME, FROM EITHER DIRECTION



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ENSURING HAPUKU BRIDGE STANDS STRONG



Hapuku Bridge, which is the first major bridge out of Kaikoura heading north, is not standing directly on its bearings. A bridge bearing provides a resting surface between the piers and the bridge deck. The purpose of a bearing is to allow controlled movement and thereby reduce the stresses involved.

The bridge moved from a westerly to an easterly direction during the earthquake and the beams moved 130mm off their bearings. Project manager Reghardt van der Walt says work on Hapuku Bridge is now underway.

'With six piers set to be scaffolded and six of the eight piers jacked by the end of next week, we will be able to replace some of the bearings, before lowering the bridge back onto its bearings,' Reg says.

The scaffolding can then be disassembled and used for the remaining two piers. When the bridge is lowered back onto the bearings correctly, it will remove stress from the beams. Work on this bridge is scheduled for completion in October.



A DANCE OF CRANES AT OHAU

Just south of Ohau Point, two cranes and a drill rig are working to get SH1 North of Kaikoura open by Christmas.

Site engineer Olga Joensuu explains: 'We have a drill rig that augers a hole into the earth. Then one of the cranes lifts temporary steel casings, and using a vibration hammer, the casings are embedded between 7m and 12m deep into the hole and roughly one metre above ground.' These casings are one of the elements required to create support piles of which 230 are needed to create the retaining wall between the road and the rail,' says Olga.

Project engineer Hamish Meiklejohn says the role of the other crane is to place 4500 seawall blocks that will be used for the new road realignment around Ohau Point.





KAIKOURA DEVIATION CONSULTATION GENERATES A WIDE RANGE OF RESPONSES

Consultation on a proposed State Highway 1 deviation through central Kaikoura to improve safety has resulted in more than 160 submissions, with a wide range of views and ideas provided.

The NZ Transport Agency is investigating a proposal to address safety issues such as limited visibility, poor pedestrian crossing facilities, and closely spaced intersections at West End, Ludstone Road and Whaleway Station Road.

The feedback has raised many matters that the Transport Agency is now assessing in full, including alternative options and suggestions to improve the proposal. The Transport Agency is now assessing all feedback, and will engage further with iwi, affected parties and Kaikoura District Council to help inform a final decision on the way forward. This will take place over the next month, with a decision expected towards the end of October.

For background on this project, read the consultation page on the website www.nzta.govt.nz/projects/sh1-picton-to-christchurch/community-engagement



THE WAEWAE WAKA WALKING BUS EXPERIENCE

Every day up to 20 people use a novel way of getting to work between the southern and northern side of Ohau Point by walking through a railway tunnel. Here is a first person account of getting ready to walk through 536m-long Tunnel 19.

Rail protector Eddie Grey (pictured below right) is waiting at the southern entrance of Tunnel 19 near Ohau Point before sunrise. The tunnel is lit from within by lights that have been installed by the tunnel crew.

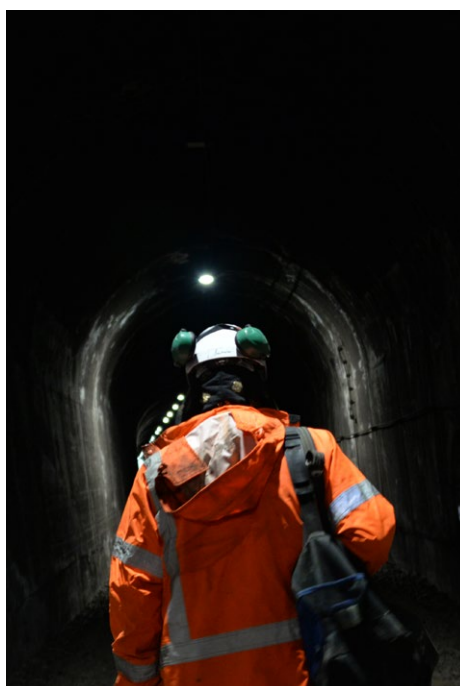
‘Safety is priority. I make sure every person who plans to be escorted through this tunnel on the Walking Work Bus has gone through the Tunnel 19 Briefing, which means they are equipped to don their self-contained self-rescue units that they carry with them through the tunnel. Each person needs to be signed in and locked-on (a safety system that accounts for people working in the rail corridor),’ says Eddie.

Before heading to the tunnel entrance, Eddie takes a photo of the sign in sheet that he will carry with him, and emails it through to the control room. The electronic copy is an extra precaution that ensures someone on and off-site knows who is in the tunnel at all times. Health and safety advisor Arthur Waites ensures everyone is wearing full personal protective equipment (PPE) and accompanies them through the tunnel as well.

The workers are about to walk through a live rail corridor and Eddie explains that the protection is a track warrant taken out from train control in Wellington.

‘I am given a start time to lock people on and put them on the track,’ Eddie says. ‘So, there are lots of layers of protection and it works well as long as you stick to the rules.’

‘If you don’t follow the rules you compromise your safety and the safety of others,’ he adds.





PLAN FOR A BUSY SUMMER OF WORK ON THE TWO 'ALTERNATE' ROUTES

While winter may be on its way out, spring weather has well and truly made itself known over the past week with tough driving conditions, road surface damage, and short road closures and delays.

Our crews are working hard to patch up the damage to provide a safe and serviceable driving surface, while they wait for the warmer drier weather to get permanent post-winter repair work underway. Then it will be all go.

Road repairs and improvements are good news longer term, but short term the increase in work sites means more temporary speed restrictions, delays and even sometimes short detours. All of these add up to longer overall journey times.



ALTERNATE PICTON TO CHRISTCHURCH ROUTE

For the multiple roading crews working up and down the alternate Picton and Christchurch route, the longer the summer, the more they'll achieve. They have a long list of work in their two programmes of post-winter repairs to get the network back up to scratch, and continue with ongoing improvements as part of the \$60m Government-funded programme.



INLAND ROUTE 70 TO KAIKOURA

Ongoing maintenance, as well as post-earthquake repairs, has seen a significant amount of work already completed on the Inland Route. Expect to see this work ramp up again at a number of sites with warmer drier summer weather. This includes work at Whales Back (about 4km north of Mt Lyford) and Conway Bluffs (about 15km north of Mt Lyford). (Pictured: some of the blasting on Conway Bluff in August to remove loose materials. Watch this video and others on our YouTube channel <http://bit.ly/NCTIRYouTube>)



FIVE STEPS TO HELP SAFE AND ENJOYABLE HOLIDAY TRAVEL

With school holidays and Labour Weekend coming, many Kiwis are getting ready to hit the road with friends and family for a spring break. That means more traffic on both the picturesque alternate Picton to Christchurch route, and the Inland Route 70 to Kaikoura - both of which are experiencing increased traffic volumes since the Kaikoura earthquake.

When planning travel, whether for a holiday, business or other reasons, include these five steps:

1. Be realistic about travel times: even though you may have travelled these routes many times before, more work sites and more traffic affect travel times. Planning for these delays will help you comfortably meet any deadlines (such as a ferry crossing).
2. Plan to take breaks: there are many towns and rest areas along these routes. Taking breaks will help you with fatigue so you're an alert driver.
3. Drive to the conditions: a heavy weather event - whether it's spring snow, rain or fog - makes these routes more challenging and demanding on all drivers. Help keep everyone safe on the road by driving carefully to the conditions.
4. Travel prepared: unexpected delays will occur. Despite careful planning, you may find yourself held up by a weather event or even a crash which temporarily closes the road. Both these routes include an alpine pass. Always travel prepared with food, water and extra warm clothing (the weather is still very changeable at this time of the year) in case you're delayed by a temporary road closure.
5. Know before you go: Find out what's happening on your route before you start your travel:
 - For real-time travel information - www.nzta.govt.nz/traffic or call **0800 4 HIGHWAYS** (0800 44 44 49) to speak to the call centre team.
 - Important information is also shared via the Transport Agency's official Twitter and Facebook accounts listed here www.nzta.govt.nz/contact-us/connect-with-us/

The following photos were captured during the two KiwiRail events held last Friday (15 September) in Kaikoura and Christchurch celebrating the first freight train to run along the Main North Line since the November 2016 earthquake.



First freight train arrives into Middleton rail yard Christchurch



Kaikoura District Mayor Winston Gray unveiling the sculpture



Guests at the Christchurch event



Artist Ben Foster in front of his four metre high remembrance sculpture



Paul Foskett, the Locomotive Engineer who drove the first freight train from Picton to Kaikoura on Friday 15 September.



Todd Moyle, Group General Manager Network Services speaks about the repairs of the track



Five year old Ben Ross woke up very early Friday morning excited about the train coming. Pictured here with Railway foreman Paul Jones 'Jonesy'



Locomotive Engineer Wayne Sullivan drove the first freight train from Kaikoura to Christchurch



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- 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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