



The Bulletin Kaikoura earthquake update

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A BRIDGE TO REMEMBER – IRONGATE BRIDGE

It has been all go for Structures team building the new Irongate Bridge, setting a record for the fastest seven span bridge built in New Zealand.

Working at exceptional speed without compromising crew safety or the environment, and maintaining a high-quality build, has been a top priority.

“The speed at which Irongate Bridge has been built against the elements is an accomplishment up there with New Zealand’s long list of major engineering feats; it’s a legacy project the team can be proud of,” says Structural Engineer Tom Comley.



In a dynamic environment with the sea on one side, cliffs on the other and coastal weather from above, the team has had to use ingenuity to plan ahead for the build and respond to the unexpected.

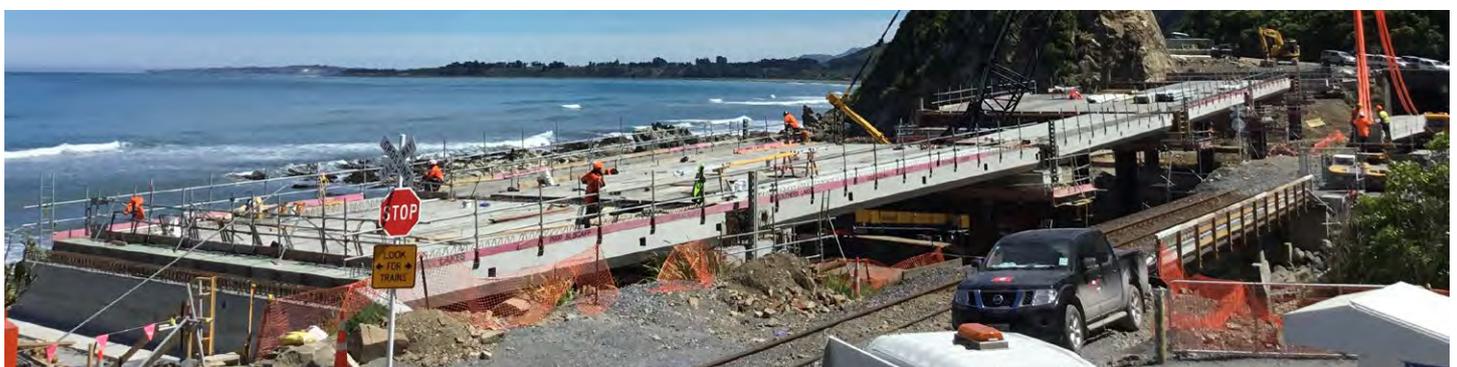
‘We had design work done in stages so construction could begin on the foundation piles, while the bridge deck was still being finalised. We’ve also had a full-time design team member on-site for fast problem solving,’ says Tom.

‘The 91 bridge beams needed on-site were prefabricated at four different locations across New Zealand to reduce construction time and meet the road opening deadline.’

With two weeks until the road opens, teams are working on the final vital touches so the bridge can link road users to the north and south.

The crews are looking forward to a well-deserved break before coming back next year to put the final finishing touches to the bridge.

‘We have had up to 50 people working both on-site and back in the design office, with different works happening from sunrise to sunset, six days a week, and beyond some days. It’s been a challenging project, but also personally rewarding to be able to follow the project through from design to construction, and be part of such a cohesive team working together and committed to delivering for New Zealand,’ says Tom.



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.





IRONGATE BRIDGE - WHAT LOOKS DIFFERENT?



If you travel State Highway 1 this summer keep an eye out for the bridge so you can get an impression of the work put in to get the road open.

Structural Engineer Tom Comley says: 'the bridge has been moved across the rail line, closer to the coastline. So for those who knew the road pre-quake, you will notice some differences, including the new seawall to the north which the bridge lands on, and a slightly reshaped rocky bluff to the south, which allowed for a straighter, safer road alignment.'



IRONGATE BRIDGE - BY THE NUMBERS

Since breaking ground **three months ago**, the team have:

- drilled **12 piles, 12m deep** into solid rock
- manufactured, transported and landed **91 bridge beams**
- cut, bent and tied **400 tonnes of reinforcing steel**
- poured **200 trucks worth of concrete**
- had **no time lost to injuries**



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...





NEED TO KNOW ON THE ROAD

Opening hours of SH1 North and South of Kaikoura

SH1 between Picton and Christchurch opens on 15 December 2017, (time TBC).

Open daily 7am-8.30pm. Closed every night for safety.

Night closures: Between Clarence and Mangamaunu in the north, and between Goose Bay and Peketa in the south. Closure points will be monitored 24/7.

Planning to travel on SH1? Consider road closure hours before undertaking your journey. Leave enough time to be clear of closure areas so you can continue onto your destination.

Plan your journey - Picton to Christchurch

Depending on where you're going and at what time, choose what route best suits your needs: SH1 via Kaikoura or the alternate route via Lewis Pass.

CURRENT ESTIMATED TRAVEL TIMES BETWEEN PICTON AND CHRISTCHURCH:

Alternate route: A minimum of 6½ hours

SH1 from 15 December 2017: A minimum of 5½ hours

Allow plenty of extra time in case of unexpected delays. Be prepared with food, water, and a fully charged cell phone.

For real-time travel information visit www.nzta.govt.nz/p2c or freephone **0800 4 HIGHWAYS** (0800 44 44 49).

What to expect on SH1

The road will still be under construction, so expect:

Some unsealed surfaces

Lane closures with Stop/Go controls

Speed restrictions

Drive to the conditions: the weather, the road you're on, the vehicle you're in, the traffic around you, and your level of experience.

Be road courteous

- No stopping on SH1 within the closure areas outside of designated stop bays.
- Be patient and cautious.** Road conditions will be unfamiliar to many drivers, so a little bit of patience will go a long way.
- Follow all traffic signs and any instruction given by road crew.
- Obey speed limits** to keep all road users safe.
- Stay focused around rail lines. **Expect trains at any time.**
- Keep fresh by taking breaks** and supporting communities on the route.



The opening hours are subject to adverse weather and seismic activity. If there is a lot of rain or another significant event, we may have to close the road for short periods of time. It's important to remember, the safety of those using the highway and working on the road will always be our top priority.



Cars (including vans, 4wd, 2wd cars)



Motorcyclists (take extra care on unsealed and uneven surfaces)



Vehicles towing caravans, boats and trailers



Campervans



Trucks (no over-dimension vehicles or loads)



Bus/coach



Cyclists - Take extra care on unsealed and uneven surfaces. Cyclists may need assistance or be escorted in some areas. Follow road crew instructions on the day.



Pedestrians



NO CAMPING (within closure areas)



SPOTLIGHT ON THE WOMEN OF NCTIR

There are some amazing people working together to reconnect communities by re-opening SH1. Part of the team includes those not always at the forefront – women in construction. Most of the time they fly under the public radar, literally, from flying in helicopters to coordinating the clearing of loose slip material to working with key people to achieve good social, cultural and environmental outcomes throughout the NCTIR programme. We talked to some of the NCTIR women to learn about what they're doing on the project and what they love about their job.

FRANCES NEESON
Engineering Geologist



Frances is part of the team coordinating bringing loose material down by helicopter sluicing, abseil sluicing and blasting. She also leads a team of 10 geotechnical professionals, who provide onsite daily geotechnical advice to the crews working on the road and rail corridor, between Mangamaunu and Clarence.

Frances is passionate about using her skills to help the communities affected by the November 2016 earthquake. She has also loved working with a fantastic team of 'geotechs', and the wider team of pilots and abseilers. 'They are all going above and beyond for the people of Kaikoura and wider New Zealand,' she says.

Being one of the first NCTIR team members to begin work on the road north of Kaikoura from 15 December last year, Frances says: 'the progress I've been able to see first-hand on a daily basis has been phenomenal. And I'm looking forward to being on-site exactly one year later for the road re-opening.'

One of the most important steps to happen before construction can occur is producing a design drawing showing the essential repair work and existing services in the road and rail corridor. Ymke leads the team which gets this incredible work done.

Ymke loves that she is part of this massive project. 'It's giving your knowledge and effort to the community who need this the most. It is not only Kaikoura, it is the whole South Island as a transport system that has been majorly affected by this natural disaster,' she says.

Ymke was inspired to join the construction industry by her father who worked in construction, and by seeing how things could be improved for the community.

'I would love to see more women in construction and this year I am on the committee of Women in Construction to assist and inspire more women to join this rewarding career,' she says.

YMKE BLOK
Computer-aided
Design (CAD) Manager,
Design team



CRYSTAL LENKY
Environmental Advisor for
the Coastal Route
Realignment (Seawall) team



Electric fishing one day, treating high pH water the next and then controlling sediment, Crystal's day can alter just like that. Luckily, her favourite part of the role is the huge variety it brings.

Another part of why Crystal loves working at NCTIR is the opportunity to be involved in one of the largest environmental teams for a construction project in New Zealand. 'There is a lot of bouncing around of ideas and knowledge sharing which enables us to provide robust environmental advice to our delivery teams,' she says.

Crystal has a PhD in Antarctic Studies focusing on marine mammals, and ended up in the construction industry in a rather roundabout way. With limited job demand in the science industry, NCTIR provides an opportunity for Crystal to combine her marine science know-how with construction. 'Focusing on environmental management in construction has been incredibly interesting. It's a bit of a change and challenge, but I am enjoying it,' she says.

EMMA WINTHROP

Geographical Information Systems (GIS) Spatial Data Team Leader



With more than 12 years in the industry, Emma works with highly advanced computer programmes. These programmes connect the dots between the geographical data on the ground and the programme creating useful tools such as 3D images, used to help plan earthquake repair work.

At NCTIR, Emma enjoys the focus on programme delivery and centralised goals, as well as the fast paced environment.

Her favourite part of the job is working together with her team to formulate and plan solutions which support the wider NCTIR team to deliver on tasks crucial to the programme, with greater speed, and accuracy.

Emma also loves working closely with the Community and Engagement team. She helps to create resources, such as presentations and interactive maps, for community meetings. These resources help impacted communities understand the scale of the project and the work that has been completed.

Site engineer Julia Roberts, aged 25, has been working in the construction and infrastructure industry for three and a half years. She arrived in Clarence seven months ago and is managing the repairs of a collapsed section of State Highway 1 damaged during the earthquake.

‘It’s a great job, I’ve really enjoyed getting to see the Sandpit evolve from a very damaged piece of road to a freshly repaired section of SH1,’ Julia says.

Julia’s team of labourers and machine operators have been building up new layers of gabion baskets on site. The old road has been dug out and rebuilt using limestone. ‘Building up gabion baskets on what is essentially a sand dune is pretty unique in the construction world, but we’ve rebuilt this old road to make it a lot stronger and more resilient.’

Before starting work with NCTIR, Julia spent time constructing several motorways, but when the earthquake happened she knew she wanted to help with the recovery. As a female engineer she says her project management style is to listen rather than to just give commands. ‘If you listen to people a bit more you can actually get more out of them and sometimes learn something in the process.’

JULIA ROBERTS Site Engineer



SARAH TAPP

Restoration Liaison Group Facilitator



The person at the heart of managing relationships between key people and the construction project, is Sarah.

Sarah joined the team six months ago on secondment from GHD global engineering consultancy.

Sarah loves being part of a team which drives the solution to achieve good social, cultural and environmental outcomes throughout the project. ‘It’s so rewarding shaping projects for communities to be proud of,’ she says.

‘With a constant stream of new faces and fluro high viz, you come to appreciate the large scale of this project. Everyone is so dedicated to getting the transport system up and running and does the job with a smile on their faces,’ says Sarah.

Sarah hopes the relationships she is building endure far beyond the NCTIR project.



RAIL IN SERVICE OF ROAD

This week has seen our Dunedin track gang finally head back home. Ganger Heta Kilgour, John Searle, Tyler Aitken, Sandy Schroder and John Renata have been working on the Main North Line since December last year. Their task was to progressively repair and reinstate the track southwards from Blenheim.

As Heta puts it, the team ‘basically headed south from Blenheim, fixing everything that needed to be fixed, until we met the Kaikoura-based team at the 11km-mark, just south of Ohau Point.’ They were a key part of the effort which saw the line reopened to limited freight services just 10 months after the earthquake. For Heta, the best memory is the how his team responded. While at first the scale of the task in front of them was daunting, they quickly settled into a rhythm, taking things one step at a time, he says. ‘This job really bought out the best in the boys and pulled us all together as a team. We had a good plan A and an even better Plan B, and just went for it.’

The team were based at Seddon, and were warmly welcomed by the local community. They were guests of honour at a farewell barbecue, held there during their last week on the job. The gang are now spending time much closer to home and working on the Bluff line.



UPDATE ON SH1 NORTH - SEALING THE ROAD

In **two weeks SH1 reopens.**

NCTIR crews are going full tilt sealing the road.

92,800m² of seal needs to be laid between Parnassus in North Canterbury and Ward in Marlborough.

That's equivalent to paving 13 rugby fields.

As we went to press, they were about a third of the way through this job.





NCTIR EXPRESS HITS THE ROAD

More than 80 Kaikoura residents have had the chance to check out the progress north of Kaikoura first hand.

The NCTIR Express launched to high-demand last week, with all trips booked out within the first 24 hours. Two buses ran three trips last Sunday with another three trips planned on each of the next two Sundays before SH1 reopens on December 15.

For local resident Jo Te Hau, the trip was an 'amazing insight' into the work which has been done behind the cordons. 'Seeing the Irongate bridge built so quickly was just awesome, I can't wait to drive it,' says Jo.

Jo's husband Daniel manages 5000 beehives in the Marlborough area. With SH1 shut, drivers have had to take a longer route to service hives. 'The alternate route has improved since the earthquake, we have noticed the improvements and upgrades', says Jo.

The reopening of the road this month will make that drive much shorter, something Jo is looking forward to. 'We will have better access to all of Marlborough,' she says.

South Bay resident Bill Hartley also can't wait for the road to reopen. He aims to be one of the first to drive the route. 'I'm already planning a day trip to Blenheim as soon as it opens.' Bill joined the first bus tour to the north and was blown away by what he saw. 'I'm fascinated with the new bridge you're building, the fact you're going out over the sea is just amazing,' he says.

While looking forward to the opening, Bill is realistic it doesn't mean saying goodbye to orange cones just yet. 'It amazes me how much work has been done but there is still a lot of work to do.

Stakeholder and Engagement Manager Mike Seabourne says the trip was a huge success. 'NCTIR is all about reconnecting communities, it was great to be able to give Kaikoura locals the first chance to see the road repairs between Mangamaunu and Half Moon Bay.'

State Highway 1 will open December 15 for more information please see www.nzta.govt.nz/p2c





ROAD CLOSURE SH1 BETWEEN WARD BEACH ROAD AND SEDDON STREET

Structural repairs continue on the Flaxbourne River Bridge and Needles Bridge in Ward. The next stage involves lifting out the ramps, backfilling the road and installing barriers. A road closure will be in place on SH1 between Ward Beach Road and Seddon Street from Monday 4 December to Wednesday 13 December. Detours will be in place.



OPEN/CLOSED SCHEDULE FOR SH1 SOUTH OF KAIKOURA

The current schedule for SH1 South of Kaikoura between Peketa and Goose Bay is:

DATE	OPEN HOURS	STATUS
Saturday 2, Sunday 3 and Monday 4 December	Open 7am to 8pm for public. Closed overnight.	Normal schedule
Tuesday 5, Wednesday, 6 and Thursday 7 December	Closed for the public. Local convoys at 7am and between 6-8pm each day	Normal schedule
Friday 8, Saturday 9, Sunday 10 and Monday 11 December	Open 7am to 8pm for public. Closed overnight.	Normal schedule

The schedule can now be viewed online at www.nzta.govt.nz/p2c



EXPECT DELAYS IN THE HUNDALEE

A further significant ramp up of work to complete road retaining wall repairs through the winding hilly section means there are now multiple one-lane worksites with stop/go traffic control. This will add to overall travel times - an estimated four hours from Christchurch to Kaikoura.

The Inland Road (Route 70) is open 24/7 and while winding and more challenging to drive, it is currently providing reliable travel times of about three hours.

Driving between Picton and Christchurch?

Make sure you're up to date with the latest information on available routes for your travel.

Go to www.nzta.govt.nz/p2c, call **0800 4 HIGHWAYS** (0800 44 44 49) or pick up a brochure.

Allow plenty of time for travel in case of unexpected delays.

Enjoy your trip!



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Please note: this phone and email box will not be monitored regularly from 23 December 2017 to 8 January 2018.