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The Bulletin Kaikoura earthquake update



CRITICAL MILESTONE REACHED AT OHAU POINT

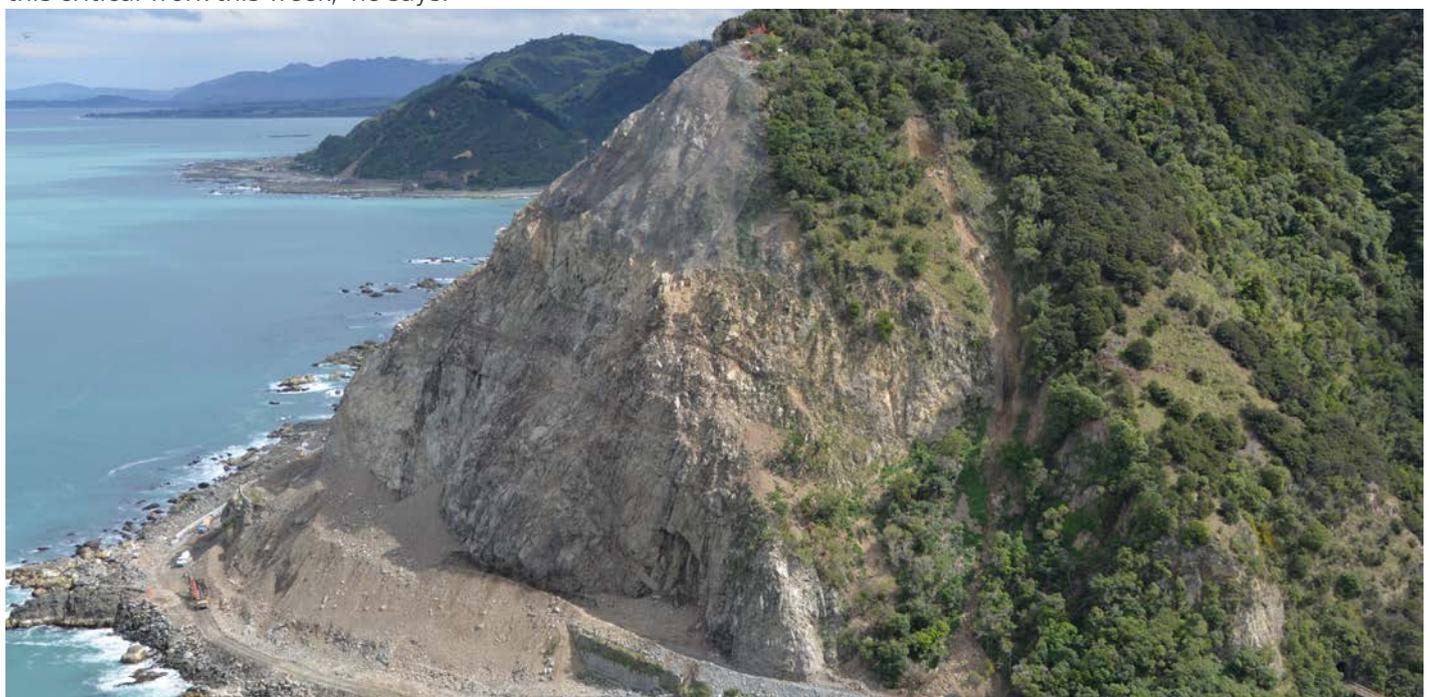
The final pieces of mesh on the top third of the northern face of Ohau Point have been laid, signalling a significant milestone for this part of the project.

The north face (pictured below and on the next page) has presented many challenges, with significant work required on the upper and lower slopes before any construction activities can take place at the base. Only a few months ago, the top third of Ohau Point was covered with a line of white x's around its perimeter. These markings indicated where anchors would be driven on average six metres into the rock, and now, the entire work for this part of the project is complete.

'Essentially, we have been bolting the hill back in place to keep material from moving. Once we installed these anchors, ring netting and mesh has been able to be installed,' project manager Mike Reilly says. The netting was lifted in 10m x 5m sheets by helicopter and then the abseilers put it into place on the anchor bolts (see picture next page).

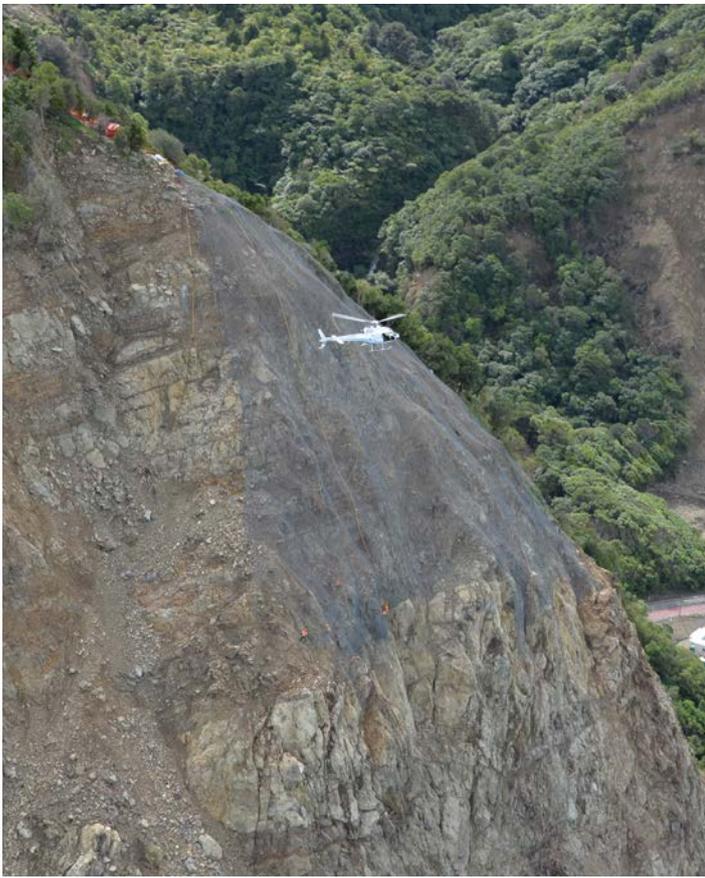
'Ring netting follows the contours of the cliff face holding the rocks in place and that's the beauty of this project,' Mike says. This will catch anything loose that might move in a shake or wet weather and tecco mesh has been applied over that. 'It is more rigid and it gives a bit of solidity,' Mike says.

The ring netting and tecco mesh are connected into place with anchors, with each sheet of ring netting shackled together. 'We started placing the mesh mid-July,' Mike says, 'And with some decent weather, we were able to finish this critical work this week,' he says.



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.





SH1 SOUTH OF KAIKOURA BETWEEN PEKETA AND GOOSE BAY OPEN/CLOSED SCHEDULE - MORE DAYLIGHT EXTENDS OPEN HOURS

Longer days and more daylight means NCTIR can now keep SH1 south of Kaikoura between Peketa and Goose Bay open longer at the end of each day for travel.

Extended Daylight Savings hours from Saturday 30 September:

From this Saturday, SH1 south of Kaikoura will be open one hour longer in the evenings:

- Sat 30 Sept, Sun 1, Mon 2 Oct - open 7am to now 7pm for public travel (closed overnight).

The New 'Normal' Open/Closed Schedule after 30 September:

- Tues-Thurs - 7am local drive-through, and now a 6pm to 7pm, one-hour opening for local drive-throughs (closed the rest of the day and overnight).
- Fri-Mon - open 7am-7pm for public travel (closed overnight).

Reminder: Upcoming Closure Week - 16 to 20 October

Following further high-impact cliff clearance work completed during this week's road closure, the next scheduled closure week is 16 to 20 October. SH1 south of Kaikoura between Peketa and Goose Bay will be closed to the public Monday to Friday. However, there will still be both a morning and evening local drive-through each day. Please plan for those dates.

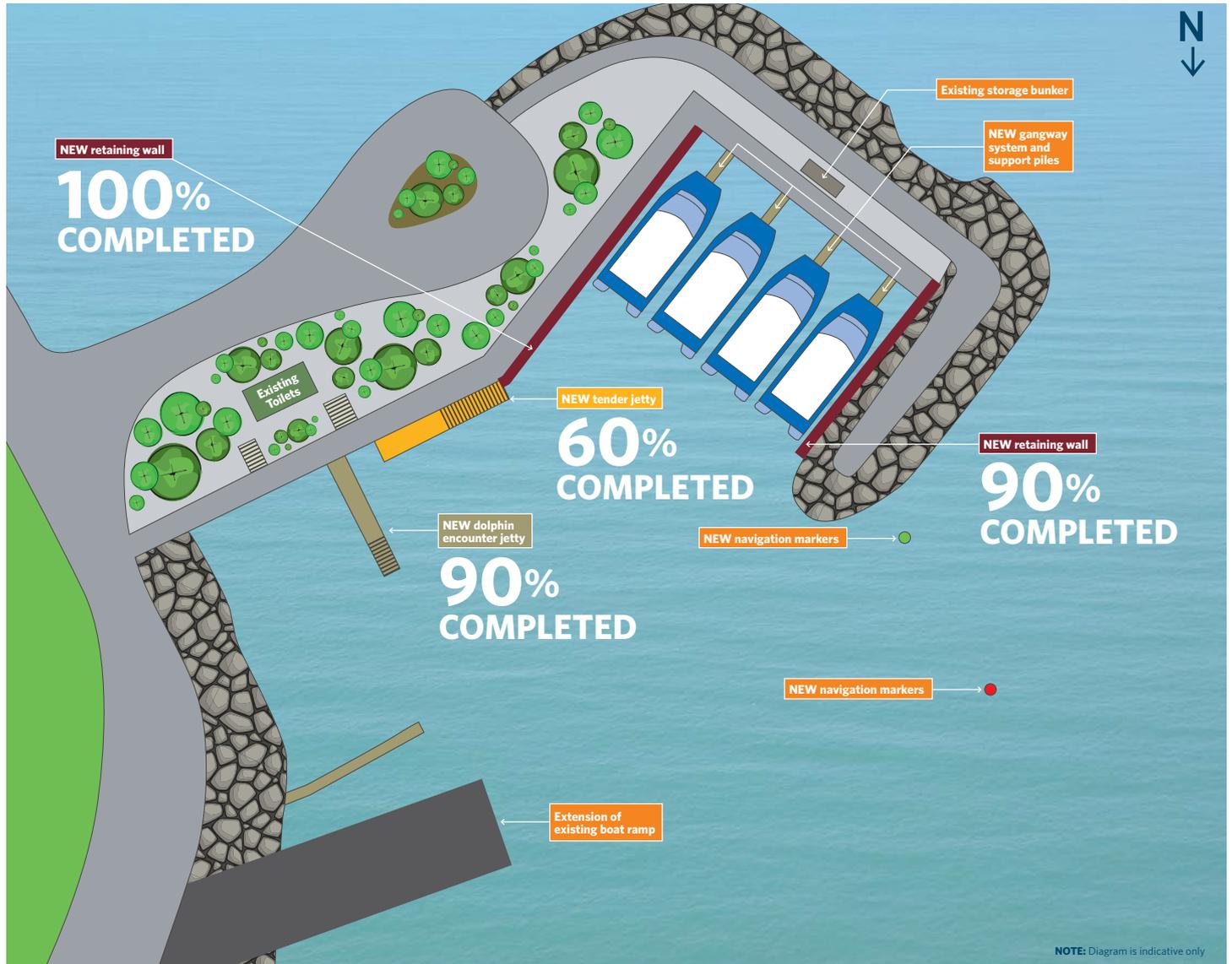
Thank you for your patience and support which is helping our 100-plus crew in this area get essential resilience work done for the reopening of SH1 at the end of this year. Please use Inland Route 70 for travel when SH1 South of Kaikoura is closed.

As we've seen in recent weeks, any road open/closure schedule can quickly change due to weather, seismic and other conditions. So please always check www.journeys.nzta.govt.nz or call **0800 4 HIGHWAYS** (0800 44 44 49) before you travel.



KAIKOURA MARINA UPDATE - GETTING IT DONE

Work at Kaikoura's harbour continues apace, with the team on target to re-open improved facilities in November. The November 2016 quake raised the seabed below the marina at South Bay, making it un-useable and disrupting tourism and fishing ventures industries that are vital to the local economy. The past 10 months have seen the inner and outer harbour dredged, and the Coastguard returned to its home. At the main marina, the team is now working 'above tide' building berths, jetties and retaining walls. This collection of photos features some of the team's recent work and progress.



Large (and noisy!) machines have been drilling through solid limestone to place piles for a retaining wall around the marina's perimeter. The piling work involves a hole being drilled and a metal piling casing being placed into the ground. A concrete pile is then placed into the hole and the casing removed. A steel-reinforced concrete capping beam is then poured in-situ. In this picture a drill rig is cleaning out one of the piling casings. The rig is sitting on a temporary work surface called a hardstand - basically, the marina has been partly filled in so the team and their machines can work. In this case, the rig is sitting exactly where boats will be tied up in several weeks time.



These pictures show a genuine NCTIR innovation. To complete the retaining walls, pre-cast concrete panels are lifted by crane and then slotted into place behind the piles, not unlike fitting pieces of a puzzle. The outside of the retaining wall is then backfilled to form a solid edge to the marina. The creation of the panels enabled a standardised construction process that allowed the team to work more quickly and efficiently.



Berths and jetties are well and truly taking shape. This photo shows progress on the Dolphin Encounter jetty, which will soon be looking smart with new wooden cladding. The jetty will be ready for use in November. In the meantime, the NCTIR team is working to get the Dolphin Encounter and Whale Watch boats into the first of the completed berths as soon as possible, before they move to their permanent homes. This involves removing part of the hardstand to let the sea back in. Visitors to the harbour may also see large sandbags being placed around the public boat ramp – the ramp will be extended in coming weeks so it reaches the harbour’s new depth.

The marina team is working long hours and shifts of up to 12-consecutive days in order to get Kaikoura’s tour boats and fishing fleet into the marina and ready for the summer season.



SPOTTED AT SHAG ROCK

While Ohau Point is best known as a sanctuary for fur seal pups, it was also an important nesting site for the spotted shag on the prominent rocky outcrops (notably, Shag and Sail Rocks) before the earthquake.

Spotted shags are native to New Zealand and are classified by the Department of Conservation as 'Not Threatened'. These birds dive from the surface of the sea to catch their food and nest on coastal cliffs and rocky outcrops. They live mainly on the South Island of New Zealand and the slender greyish adult shag has distinct small black spots on its wings and back. In early September, NCTIR Seal Handler Alastair Judkins reported the first record of shags re-nesting on these outcrops post-earthquake. 'Given how busy those sites are with the construction activity, it's pretty cool they've started nesting there again,' NCTIR Project Ecologist Leigh Bull says.

'A lot of the coastal cliffs around Kaikoura are too vegetated for spotted shags to nest on,' Leigh says. 'Conserving these rocky outcrops is important to the ongoing breeding and protection of species like the spotted shag in that area.'



SPARE A THOUGHT FOR THE NIGHTWORKS TEAMS

Climbing into her 30-tonne moxy she calls 'Pussy Cat', Jeanine Bryan (pictured below) is ready to start moving mountains. The former beauty therapist of 14 years has traded the salon for the cab of an articulated dump truck as she joins the team working five nights a week at Ohau Point. It's a 30-year dream come true for Jeanine, she absolutely loves her job. 'It's really satisfying; I love driving. I've got a V8 Holden Ute at home and this is amazing to drive,' Jeanine says.

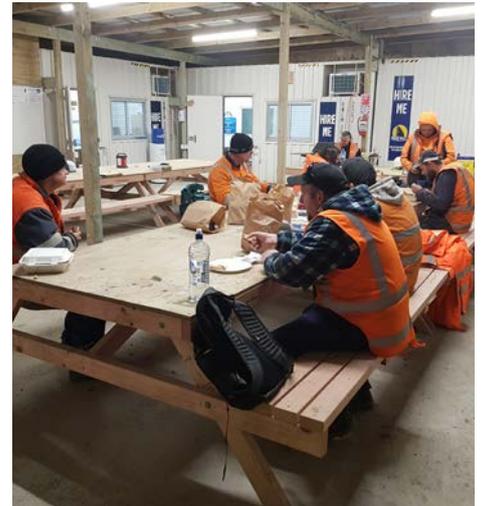
It's big, powerful and part of a fleet of machinery working at night to carve out the rock at the base of Ohau Point north of Kaikoura, so day crews can pour concrete foundations and move seawall blocks into place. 'I'm working hard to represent women,' says Jeanine. 'You don't have to be a guy to drive a dump truck.' With a crash, another 30 tonnes of rubble is dropped into the back of her moxy by a loader. While the sudden noise may give most people a shock Jeanine isn't fussed. 'That's not even bad, wait until they drop a boulder in!'

The dump truck moves differently with 30 tonnes of extra weight on top, but it's nothing Jeanine can't handle. 'People never believe me when I tell them I'm a dump truck driver,' she says as she expertly navigates a rough track and turn. 'I'm lucky to be part of a really close-knit dump truck team and the digger operators are great to work with and look after us.'

From high above the swarm of machinery, night crew foreman Butch McGinnis (pictured next page) watches on. He says his team is affectionately known as the 'Ohau fairies.'

'We get everything done for the day works crew under the cover of darkness.' 'The night crew are the unsung heroes of the rebuild; five nights a week no matter the weather they tackle the work with good spirits,' Butch says.

Later at 10.20pm, Jordan Hapuku-Mawson tucks in to two-minute noodles on a break. 'It's morning tea for our crew, we've still got just under eight hours to go,' Justin says.



Back to it a few minutes later and local Rakautara resident Bryce Stuart is about to transport fuel to the machinery on site. He lives amongst the landslides and construction activity and is an important part of the team. Working north of Ohau gives him a first-hand view on how the earthquake has changed the landscape. 'We used to launch our boats at Paparoa Point and I'm blown away by how much the seabed has lifted up. When the road opens at Christmas people are going to get a shock just how much has changed,' Bryan says.



PROGRESS AT THE PINES

During the November 2016 earthquake, the fault line running through the Pines (a 1.5k stretch of road that runs along Waipapa Bay north of Kaikoura) caused half of the original box culvert in that area to be lifted up by four metres while the other half remained in place.

The box culvert was there to channel water and debris from Mounsey's Creek to prevent flooding onto this section of State Highway 1.

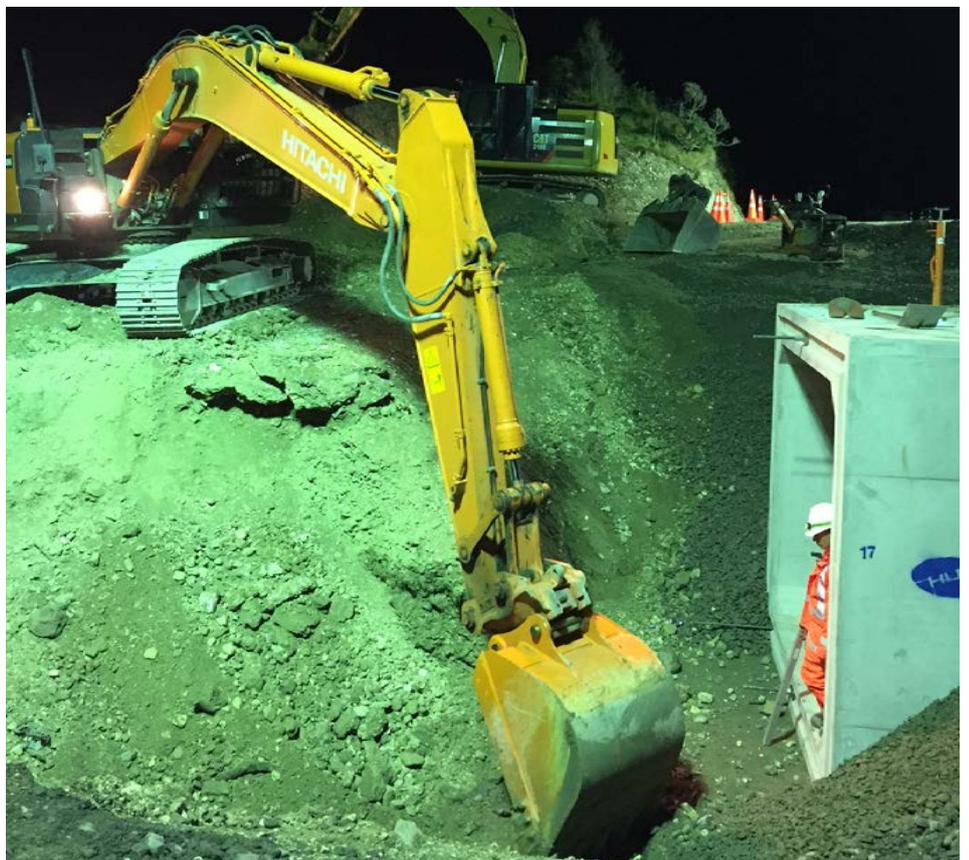
In order to rebuild the rail and road, the entire old box culvert had to be removed before new box culverts could be installed. 'The main challenge of this project was maintaining access to the other sites around us, which is why we split the project into two sections,' says site engineer Zach Knutson.

The first 10 box culverts were installed so that the rail could be built on top of that and traffic could continue to flow. To install the last 10 box culverts, however a closure was needed.

A box culvert is a 3 x 2.5 m concrete block and each unit weighs 18 tonnes. These were manufactured in Christchurch and trucked to the site. To get the blocks in place, the crew excavated a hole and made sure bases were perfectly flat and graded. Another crew then came in with a 160-tonne mobile crane to place the culverts in the hole and tension them together. The photos show how the work took place.

So as not to disturb the workflow on other sites around the Pines, the remaining work had to be done quickly and effectively outside of the normal work week.

'The earthworks and placing crew worked together on this project, and by doing so we got the last 10 box culverts installed over a weekend,' says Zac. A great result all round.



PROGRESS PHOTOS

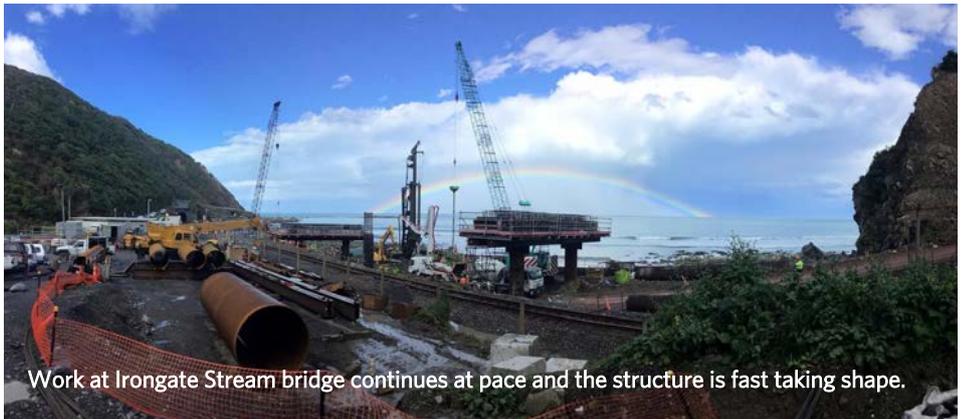
These photos show some of the incredible progress being made on work north of Kaikoura.



The first piece of kerbing is going down at site 1 just north of Kaikoura at Mangamaunu



Work at Irongate Stream bridge continues at pace and the structure is fast taking shape.



Work at Irongate Stream bridge continues at pace and the structure is fast taking shape.



On the ground at the Sandpit where retaining walls are being built



The seawall at site 7 north of Ohau Point is growing quickly



On the ground at the Sandpit

SPLIT SCREEN PROGRESS

Check out our videos that show the progress that is being made bit.ly/SH1ThenAndNow





PLAN FOR BUSY ROADS WITH HOLIDAY TRAFFIC

October brings school holidays during the first two weeks and a long weekend with Labour Day in the third week. That means more families and holidaymakers on the roads.

Not everyone will be familiar with driving the picturesque but challenging alternate Picton to Christchurch route, and the alternate Route 70 to Kaikoura.

With up to four times the normal amount of traffic on these routes post-earthquake - including heavy trucks transporting essential goods throughout the South Island - it's important everyone drives to the conditions. Help keep everyone safe by allowing for longer travel times and taking breaks along the way so you don't drive fatigued or are stressed by deadlines, like catching a ferry.

As we've seen, spring can bring sudden weather events that also make driving difficult and even temporarily close roads. Before you travel always check expected travel times for your route through www.journeys.nzta.govt.nz or by calling **0800 4 HIGHWAYS** (0800 44 44 49) to speak to the call centre team.



EXPECT TRAINS AT ANY TIME, FROM EITHER DIRECTION

Trains are now running day and night

between Blenheim and Christchurch

Expect trains at any time, from either direction

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- 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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