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The Bulletin Kaikōura earthquake update



Oh how wonderful

The public have spoken. Ōhau Point is a hit. The newly opened safe stopping area along State Highway 1 was a popular destination with motorists over the long weekend. Hundreds stopped to take advantage of the amenity area with the perfect view of Kaikōura’s world famous fur seal colony. And the seals, in the balmy weather, came to the party too.

Ōhau Point is the first in a series of new safe stopping areas to be completed along SH1, says Colin Knaggs, Owner Interface Manager for the NZ Transport Agency, who was heartened to see the public embrace the new facility.

‘This is part of a \$200 million package of works designed to improve safety, resilience, access and journey reliability between Clarence and Oaro, a 60km stretch of the Kaikōura coast. The Ōhau Point safe stopping area, with space for 20 cars, provides the local community and visitors with a safe place to stop and take a break while viewing the outstanding coastline and the famous home of Ōhau’s protected fur seals.

‘Ōhau Point was one of the areas most damaged by the Kaikōura earthquake in November 2016. The land was pushed up by seven metres. It’s been an incredible feat of engineering to get to this stage less than two years after the earthquake. Once the other safe stopping areas are built, people will be able to enjoy this beautiful coastline at a number of safe, well designed areas.’

The public can expect further exciting developments to come at Ōhau Point such as eco-sourced planting, including Ōhau Point rock daisies. Detailed cultural design elements will be completed in the New Year and iwi artists and carvers will be asked to be involved in the development of key designs across all the Transport Agency’s safe stopping areas to reflect the cultural significance of the Kaikōura Coast. ‘This includes pouwhenua and interpretation panels as well as detailed patterning to structures like furniture, handrails and barriers. Planting and other landscape design will help to integrate the safe stopping areas into the natural coastal environment,’ says Mr Knaggs.

For more information about safe travel between Picton and Christchurch along SH1 visit: www.nzta.govt.nz/p2c

Points of interest



The new viewing platform at Ōhau Point is 8 metres in length and extends 1.1 metres beyond the seawall profile and features a spilt rock garden with two huge boulders sourced from the Ōhau slip. They each weigh 8 tonnes and are positioned either side of the northern footpath.

The safety rails are made of powder coated steel and are designed to naturally weather in the elements. They run the length of the seawall. Purple heart timber decking and limestone sourced from Waipapa Quarry adorn the pedestrian areas. The cycle stands (see below) are made of re-used rail sleepers.



This Bulletin provides the latest information about the rebuild of road and rail networks damaged by the Kaikōura 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. Please note the next edition of The Bulletin will be published on Wednesday, 7 November.





Global innovation implemented to keep rail running like clockwork

An innovative Modular Rockfall Protection wall is becoming a reality to help protect the Main North Line and keep trains on schedule. The Modular Rockfall Protection wall is comprised of interconnected concrete blocks, sand and rock-filled gabion baskets. Now construction on a 40m long version has begun just south of Ōhau Point adjacent to the southern portal of rail Tunnel 19.

Project Engineer Tomislav Diklan says: 'This wall will stop debris going near the rail line. It's a great solution for this site. If the gabion baskets, which are closest to the hillside, get damaged or destroyed, they can easily be replaced, making it a great long term solution.'

A 126 metre long shallow landslide barrier is being constructed adjacent to the new modular wall to also prevent slip material from coming down onto the rail. The shallow landslide barrier is a Geobrugg patented fence consisting of two mesh parts. 'The primary SPIDER mesh is shackled to the top and bottom support rope to prevent most of the slip material coming onto rail,' says Tomislav. 'The secondary teco mesh is nailed into the ground with angular pins, and sits behind the primary SPIDER mesh to prevent finer grade material and sediments from coming onto the rail. The SPIDER mesh can stretch up to 3 metres, which is what dissipates most landslide forces, without reaching the important rail line.'

Both the Modular Rockfall Protection and the SL150 Geobrugg fence near Ōhau Point are essential rail protection solutions that must be completed before speed restrictions can be lifted and passenger trains arrive on 1 December. A paper on NCTIR's Modular Rockfall Protection wall was recently presented at the Highway Geology Symposium in Portland, Maine, USA.



COUNTDOWN TRAFFIC LIGHTS GIVING TIMELY GREENS FOR GO

These new sets of countdown traffic lights (above) are now operating on SH1 north and south of Kaikōura. They count down the number of minutes left to wait until drivers can proceed through on a green light. The countdown is giving drivers the answer to the frequently asked question: 'how long will I be sitting here for?' They are operated day and night.





Give me (tunnel) shelter

Passenger trains are scheduled to start running from 1 December and the tunnels team is doing its part to make sure it can happen. Just south of Peketa, the Tunnel 13 south portal was identified as a site where there was potential for rock fall from the slip above. A monitoring fence was installed at the site to raise the alarm in the event of a rockfall or slip, and there is a speed restriction for trains in this area.

The monitoring fence and speed restriction are temporary operational controls until the permanent rockfall shelter is completed, which will allow them to be removed.

Site Engineer Marion Guerreiro joined the tunnels team to help with the delivery of a 46 metre long permanent rock shelter at Tunnel 13. 'We had to construct different parts of the shelter separately, and then bring those pieces together like a puzzle,' says Marion. 'This was a real challenge. Each piece had to fit perfectly. As the shelter construction got underway, we started to build confidence and gained momentum on the job.'

'This team has to be really adaptable,' says tunnels manager, Rafael Ballen. 'We work closely with each other and with the designers on-site, so that any issues can be resolved immediately with design approval. This saves us from losing any time and keeps the whole team together to find



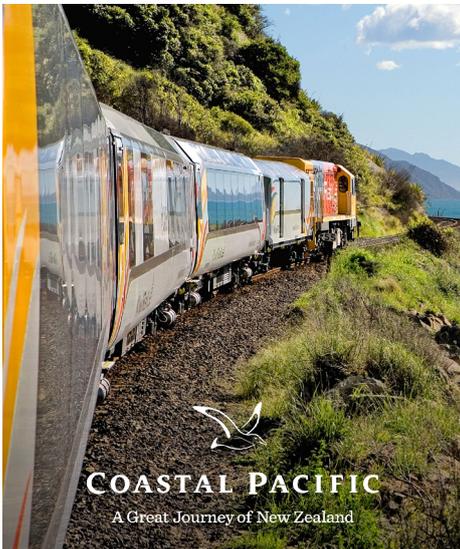
solutions and grow. The experience and teamwork during this process is incredible.'

Under the supervision of Cori Iaseto, the construction methodology was followed, with safety as a top priority. Stage 1 consisted of excavation, site concrete and installation of footings, and after it was completed, the crew began work on stage 2; placing the precast rock shelter. Once the shelter is complete, the crew will move to stage 3, backfilling, installing 32 anchors and water drainage.

NCTIR workforce food is in the bag

From early November, packed lunches for people who stay at the NCTIR Village will be prepared at the Village by Compass Group staff, in addition to their existing breakfast preparation.

These lunches are currently prepared by five companies (four who make the food and one who delivers and provides water). They are Food Company, Why Not, Pot Belly, Dolphin Encounter, and Yvonne Mackles distributors. NCTIR would like to thank these suppliers for their support in keeping our team happy and well fed since the Village opened. We appreciate their support. Dinner will continue to be provided by a selection of 14 local restaurants. We're also planning to change from bottled water with team lunches to reusable aluminium bottles to eliminate plastic waste.



A chance to win tickets on a special Coastal Pacific service

KiwiRail is running a special train service from Blenheim to Kaikōura on Friday 23 November to mark the return of the well-loved Coastal Pacific.

Kaikōura residents have the chance to win double passes to join the on-board celebrations. Simply drop in to see the friendly staff at the Kaikōura i-Site to enter the draw. Entries close 8 November. Proof of residency will be required. Winners will be advised by phone or email by 15 November.

The service will leave Blenheim at 10.15 am and arrive in Kaikōura at 12.30 pm for a celebration at Kaikōura Station. Winners must organise own transport to Blenheim. Children under the age of 18 will need to be accompanied by an adult.



Seeing is believing

Another new highly visible landmark is taking shape along State Highway 1 south of Kaikōura.

28 large concrete slope stabilisation panels are being put into place adjacent to the highway just south of the Kahutara River. The precast concrete panels are big, 5.8 metres long and weigh 12 tonnes each.

Site engineer Benjamin Smith said the panels are being placed on a 45 degree angle to shore up the unstable slope surface. The panels are pinned into place with anchors that are drilled 7.5m to 11m into the slope until they hit rock. The work is expected to be completed before Christmas.

Corners and delays cut with great idea

The team at Half Moon Bay have the job of cutting down a potential slip, with roughly 30,000m³ of material to be removed from a site that crosses both road and rail. Ordinarily, traffic management and rail safety would be required, but some outside-of-the-box thinking led to a novel solution. Hydrema haulers - normally used in mining - are able to fit under the debris flow bridges, and can handle the steep site access when in their special drive. The steep site access and high potential for runoff meant that the team has to take care with things like runoff ramps and compacting of the road. Due to high brake and gearbox demands, as a precaution they're also safety checking each truck every two weeks.

Each truck handles over 100 loads a day, and the team further increases productivity by constant radio communication to keep traffic flowing. Getting this job done as efficiently as possible is important to making sure that the safer redesign of the slip face is done and dusted (so to speak) well before any passenger trains come through.



The set-up the team came up with is working well because it's safe for workers, and an efficient way of clearing the material. But it's also

good for those travelling through because it's meant that the stopping zone hasn't had to be extended to cover these works.

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