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The Bulletin Kaikoura earthquake update



SH1 NORTH OF KAIKOURA ON TRACK TO RE-OPEN ON 15 DECEMBER

If you're planning to travel between Picton and Christchurch after State Highway 1 (SH1) re-opens on Friday 15 December then it's important you know what to expect and how to get up-to-date travel information.

NZ Transport Agency Earthquake Recovery Manager Tim Crow says when the road re-opens several sites will still be under construction. There will be some unsealed surfaces, lane closures and stop/go traffic controls. The route will be closed at night in places for several months as a safety precaution, and planned closures will also be needed at times to carry out high-impact work.

'While we're re-opening SH1 as early as we safely can to provide better access to Kaikoura and for those communities along the coastal route, the full rebuild of the highway will continue in 2018.'

Detailed information about 'what open looks like', road conditions and links to real-time travel updates are being shared via a dedicated web page - www.nzta.govt.nz/p2c. Information is updated regularly and will include photos and video footage.

Mr Crow says the reopening of the highway will give people two viable options for travel around the upper South Island, with the alternate route (via state highways 63, 6, 65 and 7 through Lewis Pass) remaining a reliable option for travel.

Whatever route people choose to take, they need to allow plenty of extra time when planning journeys and to check the latest conditions at least two hours before travel (and at key route decision points when driving) so that they can get to their destination safely and on time.

The estimated travel time to drive between Picton and Christchurch on State Highway 1 when it re-opens in December is expected to be a minimum of 5 ½ hours. Driving on the alternate route is expected to take a minimum of 6 ½ hours. But journey time shouldn't be the only consideration when choosing which way to go.

'It's important for drivers to understand that both routes have their own challenges so they need to think about the best option for them and where they're heading. Either way people will need to allow plenty of time in case of unexpected delays or closures.'



Ohau Point, mid November 2017



WHAT DOES ROAD OPEN MEAN FOR OUR COMMUNITIES

We spoke to locals in nearby communities and asked them what road open means for them, read below to find out what they had to say.

Levi's Pedal Kayaks owner Levi O'Conner

'It's going to be amazing when the road opens. It will bring heaps of people through Kaikoura,' says Levi's Pedal Kayaks owner Levi O'Conner (pictured). Winner of the 2017 Kaikoura Coldwater Classic surf competition, Levi has lived in Kaikoura since he was eight years old, and grew up surfing, fishing, and diving.

Four years ago he opened Levi's Pedal Kayaks. 'I wanted to start something that everyone could enjoy, something to do with the ocean,' he says. Offering the first hands-free kayaking tours in New Zealand, he soon became very busy.

'The November earthquake halted business for a while, and it hasn't been as busy. But I'm hoping when the road reopens things will get back to normal. We've just got to be patient.'

A lot has changed for Levi since the earthquake, but not all of it has been bad. 'We've got a lot of new rocks and I reckon the changes have made it even better. I also got married this September, and Liz and I get to work together over the summer. We look forward to showing visitors our amazing backyard ocean. The thing is, whether you've seen Kaikoura before or not, when the road re-opens, this summer will put a brand new coastline on display, and I'm stoked to be part of that.'



Clarence River Rafting owner Ben Judge

Road opening can't come sooner for Clarence River Rafting. The local business used to take 1000 people a year on half day trips down the Clarence River, however the earthquake put a stop to that.

Owner Ben Judge says while the local tourism side of the business was currently 'completely dead' he's looking positively to Christmas when SH1 north of Kaikoura is to reopen.

'I'm definitely looking forward to it from a business point of view,' says Ben.

While he waits for the road to reopen, his shuttle buses are being put to use ferrying construction workers to and from the work sites.

'There's an array of characters down there, it's great fun and the engineering side of it is really fascinating,' he says.

Shuttles like Ben's are operating north and south of Ohau Point in an effort to reduce construction traffic congestion to a minimum. Every day either Ben or one of his rafting guides Sam 'Muel' Jones will be behind the wheel, moving the crew from site-to-site.

Meanwhile Ben is preparing himself for the biggest change when the road re-opens, noise.

'It's been nice living on a dead end road, traffic normally roars past my gate. I've become accustomed to the quiet,' says Ben.

Caravan enthusiasts John and Marion Elvy

Blenheim caravan enthusiasts John and Marion Elvy spend more than 15 percent of each year on the road and one of their favourite trips is travelling SH1 between Picton and Christchurch.

Early morning 14 November, 2016 - parked at Ward Beach 45 km south Blenheim - they felt forces that threatened to tear their caravan apart.

'The caravan was lifted, shaken, dumped and everything in between. It was incredibly violent and accompanied by sonic booms and large crackling noises,' recalls John.

One year on and many road repairs later and the Elvys cannot wait to travel the route again.

'My perception is that the road will be totally different to the old route we used to travel, improvements will continue for some time and the public will need to be mindful of interruptions while works are completed,' says John.

The Elvys say since the earthquake, they have felt well informed about progress throughout the year.

'The weekly updates really made us feel in touch with this enormous project and now we are really looking forward to travelling south to a caravan event in Kaikoura early 2018,' says John.





SPOTLIGHT ON CRITICAL PATH PROJECTS

Hard work paying off in the south

Major geotechnical works have been happening at more than 30 sites in a 14-kilometre stretch, between Peketa and Oaro. These sites along SH1, south of Kaikoura, were impacted by the November 2016 earthquake. Along the way there have been many obstacles to overcome, one of the major challenges the teams faced was the flow of traffic as locals and visitors travelled on SH1 to and from Kaikoura at designated times. Because not all of the work could be done during shared road hours, many of the teams worked around the clock and made the most of pre-scheduled 'hard road closures' in order to achieve tremendous progress.

As of October 2017, netting and anchor installation to help with the resilience of the cliff faces was completed at nine different sites along the corridor. Landslide fences, and fences above tunnels as well as gabion structures, anchored retaining walls, and mesh and anchors, have been installed along the corridor, and buttress strengthening completed. A lot of work has been done, and there is still a lot more work to be done. Teamwork, determination, and innovation are paying off, and the geotechnical teams in the south are continuing to do their part to move mountains and reconnect communities.



Rail moving blocks for the road

KiwiRail is helping with the SH1 rebuild efforts by moving concrete blocks by train.

Twenty wagons, each carrying 40 tonnes of concrete blocks were recently transported on a freight train on its journey from Christchurch to Blenheim. The freight train then stopped off in Kaikoura, to leave the block wagons. The following morning a work train collected these and travelled along the coast to the final delivery destination at the Pines, near Waipapa Bay. From here the NCTIR crew unloaded and moved these to site where they are being used to build a temporary retaining wall.

Peter Dautermann, NCTIR Rail Engineering Manager, managed this huge process involving a lot of planning, testing and risk analysis.

'Reopening the railway line early, even with its limits on operation, has meant we are able to help with the road rebuild by transporting critical construction materials directly to where they are needed. This means a shorter journey, reducing the need for trucks on the alternate route and through this busy construction site,' he says.

KiwiRail has adapted 20 wagons with specialised frames to carry the blocks.



ONE YEAR ON NOVEMBER 2016 - NOVEMBER 2017

Kaikoura Earthquake magnitude 7.8

NOVEMBER
2016

More than **100 volunteers** from the New Zealand Motor Caravan Association have put in 10 hour days driving stranded rental vehicles from Kaikoura to Christchurch
The earthquake recovery legislation receives royal assent (becoming an Act of Parliament)
First **community meeting** held at **Rakautara** – Christmas hams and groceries delivered
Unrestricted access to Kaikoura established via Inland Road (Route 70)
NCTIR Alliance established - including NZTA, KiwiRail, Fulton Hogan, Downer, HEB Construction, Higgins and SH1 South of Kaikoura is reopened during daylight hours

DECEMBER
2016

JANUARY
2017

FEBRUARY
2017

MARCH
2017

APRIL
2017

MAY
2017

JUNE
2017

JULY
2017

AUGUST
2017

SEPTEMBER
2017

OCTOBER
2017

NOVEMBER
2017

Government publically commits to reopen SH1 by **Christmas 2017**
100 designers from around the world work on design solutions
5000m³ of material dredged from Kaikoura harbour
Work on the Inland Road (Route 70) begins in earnest
Two Bailey bridges open on alternate Picton to Christchurch route
100 of **709** Main North Line rail sites repaired
Trapped train carriages moved to safety
Parikawa airstrip opens
Seal-proof fencing trial begins to protect seals from the worksites

50% of seawall foundations completed for the **700m-long** section at Irongate north of Kaikoura
Mobile testing labs are set up to quality control road building material in real time
Night works begin at **Railway Bridge 107** north of Kaikoura
5 of the **10** major slips north of Kaikoura cleared
200 seedlings from **6** rare rock daisies propagated in Nelson to be returned to Kaikoura
First work train arrives into Kaikoura from the south
Parnassus overbridge south of Kaikoura reopened to the public

4500 seals professionally removed from work sites
84 of the **140 bridge beams** (21m long each) for work north of Kaikoura delivered to holding yard
Boating ramp and **berth piles** installed at the Kaikoura harbour
90% of Kaikoura marina work complete
Whale Watch welcomed home: **2 of 4 berths** completed at the Kaikoura marina
800th seawall block laid
150 tonne boulder blasted from Site 7 at Paparoa South
130 piles installed supporting Kaikoura marina construction
All **10** major slips north of Kaikoura cleared

Cyclones Cook and Debbie make landfall on the east coast creating more damage
Earthworks begin at Tar Barrel north of Kaikoura
Slope **stabilisation, remediation** and rock fall **mitigation work** underway on the Inland Road (Route 70)
4 out of **20** damaged rail tunnels repaired

85% of material cleared from slips on SH1 north of Kaikoura
Final weld on the Main North Line railway
Completion of tender jetty designs for the Kaikoura marina
First vehicles travel over Oaro Bridge
Northern earthworks at the Pines complete
Construction access platform around Ohau Point is complete
300 people living in the temporary accommodation village
10,000m³ of material dredged from Kaikoura marina

1200 people evacuated by air and **900** by sea on the HMNZS Canterbury
Initial assessment of road and rail by NZTA and KiwiRail
NZ Defence Force establishes **land access** to Kaikoura
The Hurunui/Kaikoura Earthquakes **Recovery Bills** are passed under urgency in Parliament
Permit only access to Kaikoura established via Inland Road (Route 70) where there were **25** slips

Helicopter sluicing operation begins
More than **3300** separate road and rail items identified for repair
First freight train leaves Blenheim heading south to Lake Grassmere
First **community meeting** with **Kekerengu** north of Kaikoura residents
Traffic volumes on the alternate Picton to Christchurch Route increases four fold

Heli-hydro seeding trial begins on **2** hectares of cleared slip faces near Half Moon Bay north of Kaikoura
60% of all material removed from north of Kaikoura
12,000m³ of fill to raise surface of rocky beach at Rosy Morn south of Kaikoura
100,000m³ of material sluiced using **14** excavators and **30** trucks moving material
Wandle River Bridge demolished on the Inland Road (Route 70)
First of the **temporary accommodation village** units arrive in Kaikoura
Stranded train north of Kaikoura recovered and **23** carriages returned to Christchurch

First **380m** of **2500m** of kerb and channel laid at **Site 1**
7000m³ of unstable rock and debris removed by helicopter sluicing and excavations
Final rock mesh placed at Ohau Point
First of **4500** seawall blocks laid at Ohau Point
First freight train runs full length of the Main North Line railway between Picton and Christchurch
One million m³ of material removed from all slips
66,000m³ of protective mesh (120 pieces) laid on cliff faces
First piles for Irongate Bridge north of Kaikoura completed

10,000m³ dredged from main channel of Kaikoura harbour
Access road around **Site 2** (Irongate) completed
\$60 million safety improvement package for the alternate Picton to Christchurch Route announced
All material from **Site 1a** (Mangamaunu, north of Kaikoura) cleared
First bridge demolition: Bridge 90 at Ferniehurst south of Kaikoura
Access roads completed around **7** of the **9** major slips north of Kaikoura

Road repairs and **retaining walls reconstruction** start at the **Sandpit** north of Kaikoura
First work train passes over the 480m Clarence River Bridge carrying **1000 tonnes** of ballast
First work trains pass through the Pines in the north
\$231m resilience package for **improvements** to SH1 announced
300m temporary road realignment completed ahead of schedule at **Slip 29a** south of Kaikoura
Coastguard ramp at Kaikoura harbour is handed back

22,000m³ dredged from Kaikoura marina: construction complete
Construction of **3 debris bridges** north of Kaikoura ahead of schedule
First of 90 deck beams placed on the new Irongate Bridge north of Kaikoura
Chipseal going down on the new road at the Pines north of Kaikoura
SH1 Road open date: 15 December 2017 announced by NZTA
135 bridge beams have been delivered to Kaikoura



THE MARINA HAS RE-OPENED

On 14 November 2017, with repairs completed, the Kaikoura community was handed back their harbour. Since starting rebuild work on the harbour in January, it has been a true partnership between NCTIR and harbour users to provide a facility for both now and the future. One year on, 30,000 person hours and 880 truck-loads of material later, the Kaikoura harbour was handed back to the community.

Two events, including a dawn service led by local runanga Ngati Kuri, and a ribbon cutting with Minister of Civil Defence Kris Faafoi, were attended by more than 200 people.

We asked our stakeholders of the Marina what re-opening meant for them:

'We are so thankful for each and every person who has been working on the roads, rail and the harbour over the last 11 months. We are especially grateful to the team working on the Kaikoura Marina, to be able to use three of our vessels now and operate on a fixed tour schedule creates ease of booking for our guests and tour partners, this in turn brings more surety for those wanting to visit with us and Kaikoura. Your hard work both day and night in at times the most trying of conditions is very much appreciated and certainly does not go unnoticed. Thank you for your amazing mahi (work) you are all legends who are making a real difference.'

Lisa Bond - Whale Watch Kaikoura

'Coastguard Kaikoura is thrilled and thankful that the main Kaikoura Marina and our own slipway and channel have been reinstated. It's been an upheaval of a year in more ways than one but our unit is ready to provide the outstanding volunteer service it does to Kaikoura and the wider boating community. We urge boaties to return to enjoy our beautiful coastline whilst supporting the Kaikoura community to rebuild and we look forward to seeing everyone out safely on the water.'

Neroli Gold - President Coastguard Kaikoura

'The fact that central government has predominantly funded this facility enabling us to resume normal business within a year of such a catastrophic event, is just incredible.'

Ian Bradshaw - Co-Owner Encounter Kaikoura

'The collaborative process and the commitment of the site team which has driven the reinstatement of the South Bay harbour facility through to completion, is to be applauded.'

Lynette Buurman - Co-Owner Encounter Kaikoura

'Getting the harbour fully functional again means a lot to our locals, our businesses and our visitors. The ocean is a huge part of our district's life and reconnecting with it is not only critical to our communities' recovery but also to the future development of our economy. We've worked hard with both local and government partners to get here and we couldn't be more pleased to have it back!'

Angela Oosthuizen - CEO, Kaikoura District Council





NEED TO KNOW: TRAVELLING THE ALTERNATE PICTON TO CHRISTCHURCH ROUTE THIS SUMMER

Since the closure of the coastal State Highway 1 (SH1) through Kaikoura after the 7.8 earthquake in November 2016, the main Picton to Christchurch route for travel – including essential freight delivery – has been via state highways 63, 6, 65 and 7, through the alpine Lewis Pass.

NZ Transport Agency Journey Manager, Tresca Forrester, says a \$60m funding package is enabling a large programme of safety and resilience improvements to be completed – from widening the road, new guard rails, pull over and slow vehicle bays, bridge improvements, etc.

Tresca says as the reopening of SH1 gets closer, drivers will have many questions about which route will best suit their travel around the upper South Island.



Q What's it like to drive on the alternate route compared to SH1?

While picturesque, the alternate route also has many narrow winding sections and single-lane bridges. While frequent drivers of this route will see all the improvements completed this year as part of the \$60m safety and resilience programme, it is also busy with multiple works for ongoing improvement work. For everyone's safety, please strictly adhere to all road signage and speed restrictions.

Q Will all that extra traffic on the alternate route move back to SH1 once it reopens?

When SH1 re-opens there will still be ongoing rebuild work including some unsealed surfaces, closed lanes, stop/go, speed restrictions and overnight closures. While some traffic will go back to travelling SH1, we expect traffic on the alternate route to stay at a higher volume than pre-earthquake for some time, including some freight.

Q How long will it take to drive between Christchurch and Picton on the alternate route vs SH1 once it reopens?

The alternate route currently takes a minimum of 6.5 hours. Initially SH1 is expected to take a minimum of 5.5 hours (one hour longer than pre-earthquake). There will be a number of work sites on both routes which will add extra travel time.

Q How will I know how long to allow for travel when I'm about to set off?

Check the Transport Agency's dedicated web page before you travel - www.nzta.govt.nz/p2c - for route status updates, planned closure information and links to real-time travel information. This is vital if you're catching a ferry, flight, or have another important deadline. Or you can call 0800 4 HIGHWAYS (0800 44 44 49). It's worth rechecking real-time information when you're on route too, in case things change.

Q What will it be like over Christmas?

Traffic is expected to be busier over the Christmas season on both routes. This could add to your travel times.

Important: many work sites will be either packed away or pulled back during peak travel over Christmas to help traffic move as efficiently as possible. But when the work season restarts from 8 January, motorists will be driving through an increased number of work sites with stop/go delays.

Q Why do you do all this work over summer?

A lot of road maintenance and repair work can't be done in wet and cold conditions. Winter rain, snow and ice is also harsh on our roads. Road crews right across New Zealand have to wait for warmer drier weather for work like repairing and strengthening roads; completing road widening, building pull-over areas and slow vehicle bays to help traffic pass, among others.














Q Will speed limits on the alternate route go back to what they were before the earthquake once SH1 reopens?

Not necessarily. Once SH1 is fully operational with stable reduced traffic volumes on the alternate route, the Transport Agency will review speed limits again. Ideally this will be within six months of SH1 reopening, but it will depend on traffic volumes.

Q Can I take my caravan/campervan, on the alternate route over summer?

Yes – these regularly travel this route now. However, whatever you drive, watch for traffic backing up behind you and use one of the new slow vehicle or stopping bays to pull to the left and let faster traffic pass. This helps stop the build-up of frustration from other drivers which can lead to dangerous passing moves.

NCTIR BY THE NUMBERS

THE EARTHQUAKE	HARBOUR	RAIL	ROAD
 <p>7.8 MAGNITUDE KAIKOURA EARTHQUAKE</p>	 <p>MARINA REOPEN TO THE PUBLIC ON 14 NOVEMBER</p>	 <p>100% OF THE TRACK IMPACTED BY NOVEMBER'S EARTHQUAKE WAS REPAIRED BY AUGUST 2017</p>	<p>BETWEEN CHEVIOT AND CLARENCE THERE ARE:</p> <p>1,500+ DAMAGED SITES</p> <p>200+ WITH MAJOR ISSUES</p>
 <p>THE SOUTH ISLAND MOVED 6M CLOSER TO THE NORTH ISLAND</p>	 <p>22,000M³ OF MATERIAL DREDGED FROM KAIKOURA HARBOUR</p>	 <p>220 WORK SITES ALONG 190KM OF RAIL LINE</p>	<p>100+ DAMAGED STRUCTURES</p> <p>9 SIGNIFICANT DAMAGE</p>
 <p>RUPTURES OCCURRED ON 21 FAULT LINES, ACROSS 170KM IN A COMPLEX SEQUENCE THAT LASTED FOR ABOUT 2 MINUTES</p>	 <p>130 PILES INSTALLED THE LENGTH OF 7 RUGBY FIELDS</p>	 <p>20 RAIL TUNNELS SUSTAINED MAJOR DAMAGE</p>	<p>85 LANDSLIDES</p>
 <p>THE EARTHQUAKE GENERATED A TSUNAMI OF NEARLY 7 METRES IN PLACES</p>	 <p>880 TRUCK-LOADS OF MATERIAL USED TO FORM A WORK PLATFORM ABOVE WATER</p>	<p>PRIOR TO THE EARTHQUAKE</p>  <p>1 MILLION TONNES OF FREIGHT CARRIED YEARLY</p>	 <p>194KM OF ROAD AFFECTED BETWEEN WAIPARA AND PICTON</p>

SH1 SOUTH OPEN/CLOSED SCHEDULE BETWEEN PEKETA AND GOOSE BAY

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

Further essential rockface work in this section is required before SH1 re-opens to the public on Friday 15 December 2017. From Monday 11 December to Thursday 14 December (inclusive) SH1, between Peketa and Goose Bay will be closed to the public.

DATE	OPEN HOURS	STATUS
Friday 8 December - Sunday 10 December	Open 7am to 8pm for public. Closed overnight	Normal schedule
Monday 11 December - Thursday 14 December	Closed to all. Local convoys at 7am and between 6-8pm each day	Monday 11 December - additional closure
Friday 15 December	Open 7am to 8.30pm for public. Closed overnight	New open times are 7am-8.30pm

The schedule can now be viewed online at www.nzta.govt.nz/p2c **SH1 north is opening in the afternoon**

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