COORDINATING WORK

It is back to business as usual along the State Highway 1 transport corridor.

While the transport corridor was closed for ex-cyclone Gita clean-up work, we also undertook some planned work on the road and Main North Line railway, which was considered too unsafe to carry out when the road is open.

“We said goodbye to a large boulder known locally among our geotechnical team as Rocky,” says networks operations manager Tresca Forrester. “It was blown up while the highway and rail were closed to remove any potential risk it posed if it came loose in the future.”

By undertaking this work as well as some critical rail work (see page 3) it has reduced the likelihood of having to close the road again in these areas. Our earthwork teams continued to remove the 300,000 cubic metres of debris material that came down in the cyclone and to make the road safe to reopen.

The Hundalees were particularly impacted by Gita. Along a few sections of the route, parts of the road have dropped away and the road is down to one lane as crews work to reopen two lanes. We have been continuing with our earthquake repair and improvements work along areas of the corridor, which were not so affected by ex-cyclone Gita.

Road opening need to know

• Expect extra delays as long stretches of highway will be single-lane because of ongoing repairs. SH1 new opening hours are 7.30am - 7.30pm (previously 7.00am to 8.30pm) because of fading light.
• The closure point south of Kaikōura has moved to the SH1/Leader Road intersection, extending north to Peketa. People living within this area are allowed access from the south side, but there will is no through traffic to Kaikōura outside the opening hours. This closure point will be reviewed once work has been completed on areas of highway in the Hundalees north of Leader Road.
• No change to the overnight closure point on the north side of the town – it remains closed between Clarence and Mangamaunu.
• Expect trains at any time from any direction along the rail corridor adjacent to SH1. Cross only at the level crossings and watch out for rail vehicles that are working across the line as part of the recovery.
LEADERSHIP HANOVER

NCTIR project director David Loe has hung up his NCTIR hard hat for the final time passing the leadership of the project to Brian Kirtlan, NCTIR’s construction manager for the past year. Brian brings with him 30 years of experience in construction, maintenance and supply chains.

Passing the baton – David Loe

As I pass on the baton to Brian I have mixed emotions – this project has been my life since coming joining the team in November 2016 and then becoming project director in June last year. I have concentrated my personal and professional energy into moving mountains to reconnect communities. It has been challenging work, but hugely rewarding and I am sad to have hung up my hard hat and taken off my steel caps for the final time.

It was a massive target to get the highway open before Christmas – an ordinarily unachievable target, but we kept our promise. The highlight was 15 December 2017, road opening day. From driving over Iron Gate Bridge before dawn with the stars still hanging in the sky, lighting up the stillness of the beautiful Kaikōura coast to later in the morning joining the Kaikōura community to celebrate. Other highlights herald from the early days of the recovery when we were housed in Portacoms known as the chicken coop and forming a team on the go who didn’t know each other, but all had the focus of restoring the transport infrastructure. As NCTIR quickly expanded, it drew thousands of people from all over New Zealand and internationally. This diversity and gathering of expertise has resulted in an amazing team and innovative approaches. We also have had a number of young graduates starting out with us on this career-defining project.

I acknowledge we have all been on a journey, which has not been marked out clearly for us; we have had to feel our way and make a plan out of nothing. I want to thank the NCTIR board, KiwiRail and NZ Transport Agency as we have worked through these challenges to meet the needs of New Zealand’s communities.

Many of our crew who have been working away from their homes and families during this project will understand my reasons for departing – to return to my family after they have kindly lent me out for over a year now. It won’t be a complete cheerio as I will be keeping in contact to see how progress is going as the team completes its work. As I hand over the project to Brian’s management I know I am leaving it in safe hands.

Continuing the race – Brian Kirtlan

I am excited to be stepping into David’s boots, leading a world-class project rebuilding and strengthening our transport infrastructure. As NCTIR’s construction manager, I have spent the past year in spectacular Kaikōura, working along the phenomenal coastline where the mountains meet the sea with our 1,300 team members on the ground reconnecting our coastal communities to the rest of the country.

It has been an incredible and an emotional year too. When the first train rolled into town last September, it was a feeling like no other. Then it was an absolute highlight to watch the aftermath of the road opening and to see Kaikōura’s streets transition from high viz crews to a thriving tourism hub. And, it’s been terrific to see the harbour being used by tourists and locals.

As I take over from David we are moving into a new phase of the project, focused on making sure the corridor is reliable and can withstand the forces of nature. We will also provide a fabulous legacy with the shared use pathway, amenity areas, and safety improvements. What a treat to be able to cycle or walk along one of the most stunning sections of State Highway 1.

My team and I are also focused on delivering value to New Zealanders, KiwiRail and the NZ Transport Agency – for us this means being efficient and effective. Goals we will be aiming to deliver this year include increasing the level of freight service to 24/7, having the Coastal Pacific passenger service up and running again, and fully opening State Highway 1 – 24 hours a day, seven days a week.

We will continue to get our workforce home safely to their loved ones while also developing the next generation of the engineering industry.

I am looking forward to working alongside our teams, the NCTIR board, the NZ Transport Agency, KiwiRail and the communities as we work through this next phase of the project.
GOODBYE ROCKY

Our geotechnical team blew up ‘Rocky’ while the road was closed because the Gita clean-up. The 700-tonne boulder, just north of Kaikōura near Ohau Stream, had ninety-two holes drilled into it. These were loaded with a combined total of 32kg of explosives. Visit https://goo.gl/FuvkP4 to view the video of Rocky being blown up.

MAKING THE MOST OF THE WEATHER AT BRIDGE 131

Rail Bridge 131 in Whareuri, north of Kaikōura was built before 1915 and sustained irreparable damage in the November 2016 Earthquake. After evaluating options, a temporary graffiti’d span nicknamed, ‘the ugly bridge’ was installed in May 2017 to allow the Main North Line from Picton to Christchurch to reopen.

This temporary fix allowed freight trains to use the bridge, but a permanent concrete ballast deck was required for the return to full line speed. ‘It was a priority that this work happened quickly and efficiently to minimise interference with KiwiRail’s scheduled services,’ says site engineer Sarah McCallum.

Preparations were made to lift the temporary span out and to push the new deck, which was fabricated off site into position on 4 March 2018, during the 40-hour closure of the line. But when ex-cyclone Gita came through causing unexpected closures, the team worked quickly to use the closure, and completed the permanent repairs at Bridge 131 ahead of schedule.

‘It was an awesome effort,’ says Sarah, ‘from preparation and design through to the team making the most of the unplanned closure; this was a job well done.’ This completes work at another major damaged site on the Main North Line, and contributes to reducing the transit time of trains in the network.
PERFORMING AS DESIGNED

Slopes engineered over the past year to reduce the risk of slips, performed as expected despite the force of ex-cyclone Gita.

Heavy rain brought 300,000 cubic metres of material down by the way of debris flows along State Highway 1 north and south of Kaikōura. ‘In engineering terms, what we are dealing with because of ex-cyclone Gita are not slips,’ says project director David Loe.

‘These debris flows are made up of unreachable material on steep coastal cliffs, loosened by the earthquakes and flushed out by the force of the rainfall.’

The intense rainfall flushed the debris along already established creeks or streams up the hillsides.

‘What we are pleased about is that where we had undertaken remediation work along the coast on slips caused by the earthquakes, by using water or earthworks to remove loosened material, by cutting benches, planting vegetation and putting in rockfall protection, these slips performed as expected, despite the high rainfall,’ says David.

‘This is good news to the ears of our geology and engineering crews who have been working over the past year to protect the road and rail infrastructure along the corridor.’

All this work meant crews could quickly access sites where the rain has caused debris flows to come down and get started on clearing it away.

Our engineers are analysing new debris flows and reviewing how to mitigate the risks posed by these to protect State Highway 1 and the Main North Line, as well as those who use these corridors in the future.

‘This event was a great test of our new defence systems. We’re confident as time goes on and our work is completed that the route will be more resilient during future weather events,’ says David.

Rockfall protection wins

At Site 1 near Mangamaunu a new gabion basket rockfall protection wall stood up strong, on one side sat an untouched road and rail line, and on the slip side, fresh material was piled up ready to be collected and removed.

Adjacent to Raramai Tunnels, south of Kaikōura the rockfall fences have collected material, keeping it from falling on the rail below. The material collected has been emptied safely.

Earthquake slips at site 4 and site 8 were cleared last year and the slopes were scaled back to reduce risk of further slips. Benches were cut into them and seeds were sprayed at Slip 4, all of these factors stabilised these slopes which performed as expected in the weather.
LEAVING A SAFER LEGACY

When the 2016 earthquake closed State Highway 1 north of Kaikōura, the commuter, tourist and freight traffic shifted on to what was the only major economic lifeline for the upper South Island – the alternate route.

This Picton to Christchurch route, via Lewis Pass, was narrow, winding, challenging and never designed for this level and type of traffic. Virtually overnight, the highway began deteriorating requiring an immediate programme of road reconstruction, resurfacing and repair works. It was a concern for those living along the route, those driving it, and the NZ Transport Agency to keep it safe and open for drivers.

The NZ Transport Agency committed $60 million for improving the route and a hi-viz roading crew quickly ramped up along this 398km stretch to deliver:

- Safety work, improved road markings, additional signage and guardrails, improved approaches to the small townships, and temporary reduced speed limits through high-risk areas.
- Bailey bridges and traffic signals at the higher risk one-lane bridges.
- Improved network resilience where slips and river scour were occurring.
- Around 40 new slow vehicle bays for slower vehicles to safely pull over and let others pass.
- Mobile phone hotspots installed in areas with poor or no coverage.
- Additional facilities for travellers and freight needs, such as parking and trailer swap areas.

In total, more than 70km of the road was widened, and about a third of the entire route was resealed or rebuilt.

The reopening of SH1 via Kaikōura on 15 December 2017 saw alternate route traffic levels reduce, back towards pre-earthquake levels. Recent SH1 closures have reinforced the vulnerability of the yet to be completed parts of the coastal SH1 route and how important the alternate route remains.
**IT’S NOT OVER YET – WORK IN YEARS TO COME**
While the $60 million funding has been fully allocated and drivers will shortly see a drop-off in the number of road sites and activities with the seasonal change to cooler, wetter conditions, there is still much to do. As crew start switching to ‘winter maintenance’ mode next month to keep the road safe and serviceable, there will be much planning in readiness to restart and continue an important improvement and maintenance programme in summer 2018/2019, and for many summers to come.

**COMMUNITY AND POLICE MAKE IT POSSIBLE**
So much has been built and improved in such a short time on this route. And with sometimes 30-plus stop/go sites to navigate adding travel delays, anxiety and frustration, community and road user patience has played a big part in what the crew has been able to deliver. Dedicated police teams have also been crucial to keep this busy road safe for drivers and work crews. It has been a huge and collaborative work programme to leave this vital upper South Island lifeline in much better shape, creating a future legacy for years to come.

**SPOTLIGHT ON HOWARDS NARROW**
North of St Arnaud a 4km previously narrow 5.8m strip of road navigating between a sharp cliff and a steep drop-off would see passing trucks clip each other’s wing mirrors. All that extra traffic made it a frightening and dangerous section to drive, and this section of the alternate route became the single largest improvement project within the $60m programme. After many months and a massive facelift, the now at least 7m wide road is no longer so narrow - another lasting improvement.

**BEFORE AND AFTER**
At Jacob’s Ladder north of Ohau Point the force of ex-cyclone Gita brought down 200,000 cubic metres of material, which went across the road and rail. In less than two weeks the material had been cleared and the road and rail were back on track with KiwiRail freight services resuming on the evening of Monday, 5 March. A big thank you for the huge effort put in by KiwiRail and NCTIR crews in restoring the transport infrastructure.
WHERE TO EXPECT DELAYS ALONG THE CORRIDOR

In red on the map below are delay hotspots along State Highway 1. Please drive safely through these areas – some of which are single lane. Thank you for your patience.

Thank you for your patience.
For further updates on the condition of State Highway 1 both north and south of Kaikōura please visit here www.nzta.govt.nz/p2c or call 0800 44 44 49.

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Damage in the Hundalee Hills