



KIWI RAIL AUCKLAND METRO PROGRAMME

URGENT TRACK REPAIRS

AUGUST 2020

WHAT IS THE AUCKLAND METRO RAIL PROGRAMME?

KiwiRail's \$1 billion Auckland Metro Programme is a suite of projects that will ease congestion in the busiest parts of the network by building new track and a third main line, extend electrification to Pukekohe, build new stations around Drury and deliver city-wide renewals that will cut delays and make sure Auckland is ready for the City Rail Link. Modernising the track and replacing worn rail is part of this programme.

WHAT HAS CAUSED THE ISSUE WITH THE WORN TRACKS?

Rail track becomes worn over time as a result of usage, in the same way that road surfaces deteriorate.

One particular type of damage, Rolling Contact Fatigue (RCF), has become increasingly prevalent on the Auckland metro rail network. It occurs when the stress created by contact between rail and the rolling wheel of a train causes the rail to develop cracks, and those cracks to grow.

HOW DO YOU IDENTIFY AND FIX IT?

We use a range of techniques to identify the issue, including regular visual inspections and non-destructive testing methods to locate damaged rail.

Resurfacing the surface of the rail with a specialist grinding machine removes the shallower cracks. However, once cracks become deeper the rail needs to be replaced.

IS THIS PRESENT ELSEWHERE ON THE NATIONAL RAIL NETWORK?

Our tests across the national network have found only isolated instances of RCF on other high use

areas – such as the Wellington metro network and on the East Coast Main Trunk between Hamilton and Tauranga.

WHEN DID YOU FIRST BECOME AWARE OF THE ISSUE IN AUCKLAND AND WHAT HAS BEEN DONE TO RESOLVE THIS?

All rail is subject to wear and tear, but we began seeing a more widespread issue in Auckland around three years ago. In early 2018 we established a technical working group with Auckland Transport to investigate the root causes and identify infrastructure and/or rolling stock solutions.

In 2019 we received additional funding from the Government that enabled us to take a more intensive approach to resolving this.

Immediate actions included enhanced track inspections and accelerated replacement of rail around the network, additional rail grinding and the introduction of new testing technology to detect the extent of the issue.

WHY HAS IT SUDDENLY BECOME URGENT?

New testing introduced over the last six months - Eddy Current Testing and Phased Array Testing - has provided KiwiRail a much greater understanding of the extent of the fatigue problems on the Auckland network.

Eddy Current Testing finds the locations of RCF and Phased Array Testing, an ultra-sonic test of the rails, is used to confirm the depth and severity of the cracks. This has shown us that issues are more widespread than initially understood.

HAVE YOU BEEN GRINDING THE RAIL TO PREVENT THESE CRACKS GETTING TO THE POINT THAT THE RAIL NEEDS REPLACING?

We have carried out rail grinding on the Auckland rail network in 2015, 2017, 2018 and 2019.

Earlier this year we procured a further rail grinding programme with specialist suppliers. The equipment is already on its way from Australia and should be in New Zealand by the end of August.

WHEN WILL YOU DO THE WORK – WILL THERE BE EVEN MORE DISRUPTION FOR COMMUTERS?

Work to maintain and repair train tracks can only be done when no trains are running. With trains operating on Auckland's metro network from early morning until late in the evening, careful planning is needed to schedule access for track works.

Usually the track is closed at nights and over weekends when fewer people are using the trains. While this pattern of closures will continue, the scale of work required will mean extended track closures will also be put in place. This will enable us to get the work done more quickly and efficiently so we can return the network to normal operations.

WHY ARE YOU CLOSING THE TRACKS FOR THESE EXTENDED PERIODS - CAN'T THE WORK BE DONE AT NIGHT OR AT WEEKENDS WHEN THERE IS NO IMPACT ON WEEKDAY COMMUTERS?

Work done during shorter track closures is significantly less productive than during longer ones.

This is because of the time needed to bring people and equipment onto site to set up each time the track is closed, and the need to return the track to a fit state for train operations every time the track is re-opened.

With an extended track closure we can follow more productive and efficient processes in the sequencing of tasks and deployment of equipment and personnel.

Work done in a 14-day track closure could take more than 100 days if done piecemeal at night and over weekends.

KiwiRail and Auckland Transport have taken these factors into account. We recognise weekday track closures will be disruptive for rail passengers, however this approach means the work will be completed and normal operations resumed in the shortest time frame, thus minimising overall disruption for commuters and those living and working alongside the rail corridor.

WHY ARE YOU PUTTING IN SPEED RESTRICTIONS ACROSS THE ENTIRE NETWORK IF ONLY 100 KMS NEED WORK?

Speed restrictions are put in place in areas where we know there is damage to the track so trains can operate safely until repairs can be carried out. These are at multiple locations spread across the network and speed restrictions change frequently as damaged areas are identified and subsequently repaired.

This changing landscape of restrictions makes it challenging for a rail operator to run services that continue to meet their timetable. A blanket speed restriction will allow for a new timetable to be developed that can remain in place regardless of where and whether new areas of damage are located.

WHO IS RESPONSIBLE FOR WHAT IN DELIVERING COMMUTER RAIL SERVICES IN AUCKLAND?

- Auckland Transport – specifies and procures the commuter service; owns and maintains the trains and the stations.
- KiwiRail – owns and manages the network; maintains the network to agreed levels of service to enable delivery of the commuter service specified by Auckland Transport.
- Transdev – delivers the service on behalf of AT – eg. train drivers, on board staff, customer communication.
- CAF – supplies and maintains the rolling stock on behalf of Auckland Transport.