Rail Network Rebuild – Frequently Asked Questions

What work will you be doing on the Auckland metro network?
With the City Rail Link enabling more frequent commuter services across Auckland, we need to make sure the physical network can safely handle that increased activity.

Work to upgrade the network is overdue and, in recent years, has resulted in an increasing number of temporary speed restrictions being put in place on the network - which results in longer journey times.

Our Rail Network Rebuild is focussed on replacing the rock foundations under the tracks – some of which have not been replaced since the Auckland network first started being built 150 years ago.

The work will see the tracks (rail and sleepers) lifted out of the way and:

- The formation (compacted gravel that is the foundation of a rail line) replaced
- Ballast (the rocks that the tracks sit in) replaced; and
- Any drainage issues in the rail corridor fixed.

The tracks will then be put back in place and realigned.

We will be working as efficiently as possible, making use of new technology - such as panel lifters (which can pick up and put down tracks quickly), stabilisers (which shake and consolidate formation) and tampers (which pack ballast under the tracks) - to help us get the job done faster. Without suspending frequent commuter services, it would be impossible to deploy these time saving machines.

During the rebuild work in each stage we will aim to get other rail improvement projects done as well and carry out rail maintenance. Maintenance could include replacing sleepers that may need to be replaced in the next year or two or remove trees that we can see being a problem later on. It's about thinking ahead and trying to avoid the need to come back and cause further disruption in the coming years.

What order are you doing the sections in?
We have locked in the first two stages of the rebuild –

- The Southern Line between Westfield Junction and Newmarket and the Onehunga Line – affecting services from Onehunga and from Penrose via Ellerslie, Greenlane and Remuera, into Newmarket.
- Followed by the Eastern Line – affecting services from Otahuhu via Sylvia Park, Panmure, Glen Innes, Meadowbank and Orakei, into Britomart.

The Southern Line between Papakura and Pukekohe is likely to be the next. Commuter services (DMU) stopped operating on the line between Papakura – Pukekohe on 12 August 2022, so work could be done electrifying the line. Our renewals work will be carried out while that section of line is already closed to metro services.

There is some flexibility in the order of the later sections in 2024 and 2025 and we're working out the best schedule – trying to reduce impact on commuters as much as possible.

Can't you just work on weekends or at night?
KiwiRail currently undertakes major maintenance and renewals work by closing the network over public holiday long weekends and over Christmas/New Year. We also undertake regular maintenance over weeknights.

Recently there have been more closures as we prepare the network for the rebuild project.

The issue is the scale of work we have to do – it's essentially replacing 20 per cent or 30 kilometres of the existing network. If we were to only do it on evenings, long weekends and over Christmas – the work could take almost 20 years to complete (2041).

That is unacceptable. Not only would it mean ongoing disruption, it would not allow more frequent trains once CRL begins operating.

That's why we've made the decision to get the work done in the next two years. It means the network will be up to standard by the time CRL begins operating, and people will see more frequent, reliable commuter services.

We know this is difficult, we just ask that you bear with us over the next few years.

Why do you need to fully close lines – can't you let peak commuter trains through?
We're very conscious of the disruption the Rail Network Rebuild will cause commuters and we looked at a range of options when planning it – including allowing single line running during peaks (eg. trains travelling into Britomart in the morning and back in the evening).

Safety for track workers and passengers alike is paramount, and single line running increases risk – given the 25,000 volt overhead wires would need to be turned on for Auckland Transport's EMUs to operate.

It also slows down the work and would push the completion date for the inner and other key parts of the network beyond CRL's start date. That would delay introducing a new, more frequent commuter train schedule.

A key aim here is completing the bulk of this work before CRL begins operating, so that its benefits start from day one.

Why not work in multiple places at once?
We also considered this. It would cause more disruption for commuters and double the resources we need to do the work.

There are a number of other rail projects going on in Auckland at the same time as we do the Rail Network Rebuild – such as the new Third Main Line, Papakura – Pukekohe electrification, building three new stations around Drury and CRL itself - and there just aren't the people available to do that.

Didn't you already do this work during network shutdowns in 2020? Why didn't you do it then?
We did urgent renewals on the most worn parts of the network for eight months over 2020/21. This was essentially emergency works so that trains could continue operating safely, in response to small cracks appearing in the rails (due to Rolling Contact Fatigue). This work saw a considerable amount of rail either replaced or repaired and we also took the opportunity to replace some sleepers.

We are now moving on to the other crucial work we need to do to the network – focussed on replacing the rock foundations the rail lines and the sleepers sit on. As a general rule, 60-70% of faults at the top of the rail line (eg. with rail and sleepers) are actually due to weaknesses in the formation, often caused by poor drainage. That's what the Rail Network Rebuild is targeting.

We knew prior to 2020 that work on formation across the network was needed but were not ready to undertake such an extensive programme of work when the rolling contact fatigue was discovered.

The 2020/21 work and the Rail Network Rebuild are part of the same rail improvement project. It will raise the overall standard of the network - making metro services more reliable, see less services cancelled and allow more frequent trains to travel on it once CRL begins operating. Without doing this work we won't see those benefits.

Haven't some Auckland lines already been upgraded (eg. Onehunga Line, Manukau Branch Line Western Line)?
Work on the Onehunga Line, which was reopened in 2010, and the Manukau Branch Line, which opened in 2012, is relatively modest. Both lines are both closed by default, due to work on adjoining routes. KiwiRail is taking the opportunity to undertake some proactive renewals – particularly replacing ballast - to mitigate future disruption on these lines.

A second track was added to the Western Line in the mid-late 2000s. The majority of the second track is to standard, but the original double tracking project did not include replacing the formation of the existing line. This now needs to be done. The frequency and type of passenger service in operation at the time permitted services to continue while the new line was constructed – this approach did result is some areas not receiving the ideal level of excavation. The Rail Network Rebuild will address issues in these areas.

How much is this work costing?
The overall investment in Auckland Rail Network is around $7bn – including the City Rail Link, Auckland Transport's investments, the Government's NZ Upgrade Programme projects and a range of other improvements.

The Rail Network Rebuild is around $330 million.

It includes the foundation replacement work and a number of initiatives to make future, ongoing maintenance more productive. These include:

- installing additional crossovers and access (on-tracking) pads on the network so rail vehicle can more easily get maintenance access, and
- purchasing new track plant and technology – such as panel lifters and automated track inspection technology.

These initiatives will help make track maintenance more efficient and minimise disruption, particularly given the increased commuter train frequency to come with CRL.

What's KiwiRail doing to make sure this work is done quickly?
KiwiRail will leverage its internal resource from across New Zealand and has partnered with experienced contractors. KiwiRail has been undertaking work already during short line closures over the past 12 months, to ensure our methods are practised and our teams are well oiled.

We have invested in new technology and plant to speed up the works and will continue to review the options available.

We also intend to work around the clock where it does not unnecessarily disrupt our neighbours.

What's to stop disruption like this happening again?
Any railway needs ongoing maintenance and renewals. This renewals project will significantly move the network to a more resilient and reliable level and we are working hard with our industry partners to make sure ongoing maintenance keeps it that way.

We will be moving to a "preventative maintenance approach" (compared to the reactive approach currently). This will see a much more co-ordinated, efficient approach to maintenance; much greater long-term planning; and greater use of machines (like panel lifters and tampers) that can get work done quickly.

We're still working through the details of this new approach, but the whole point is to avoid the need for the large shutdowns that we have to do over the next few years.

What about freight trains and Te Huia?
Commuter services will only be suspended in one section at a time, while work is undertaken. This is the best way to get the necessary work done and minimise the disruption across Auckland.

Metro commuter trains are being stopped in the sections being worked on because their frequency – in some cases 12 an hour – would stop work being done.

Freight trains that run between the local freight depots in South Auckland will be restricted when the relevant section of line is closed, however scheduled freight trains that come into, out of or across Auckland have to keep running. We need to keep freight moving from Ports of Auckland, Port of Tauranga and the rest of the North Island. Auckland is part of the busiest freight route in the country – known as the Golden Triangle (Auckland-Hamilton-Tauranga) - and stopping these freight trains would affect supply chains across New Zealand.

For the first year of work Te Huia and the Northern Explorer scenic train will continue to The Strand, as there are alternate routes around work areas. These trains are infrequent, are diesel powered and only have a minor impact on the work – given Te Huia comes into/out of Auckland twice a day and the Northern Explorer once every two days.