

## MIN-4262 – Update on Te Huia SPAD A incident

31 July 2023

To provide an update about the increasing volume of rail traffic on the Auckland rail network and how this will be managed.

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### Background and Waka Kotahi's role in rail

Waka Kotahi has dual roles and responsibilities as investor and regulator in the rail network.

As investor, we are statutorily required to:

- Lead the assessment of KiwiRail's Rail Network Investment Programme (RNIP) setting out a three-year investment programme and a 10-year investment forecast for the national rail network.
- Advise the Minister of Transport on approval of the RNIP and funding for individual activities (i.e., whether to invest from the NLTF)
- Monitor the delivery of the RNIP and report to the Minister annually.

As Rail Safety Regulator, we are statutorily required to:

- Support RNIP assessment
- Provide assurance of rail industry maintaining compliance with Railways Act and intervene when a specific risk is not being addressed acceptably.
- Provide oversight at an outcomes level.

It is important to note that health and safety responsibilities still ultimately lie with the person conducting a business or undertaking. All rail licence holders are required to have a safety system with an overarching safety case approved by Waka Kotahi (WorkSafe NZ is also consulted before a safety case is approved).

### Growth projections for freight and passenger

We anticipate significant growth on both the Auckland and Wellington metro networks over the next five years.

- Auckland metro currently has 11.9 million trips annually (FY23) and is projected to grow to 34.1 million (2028)
- Wellington metro currently has 10.7 million trips annually (FY23) and is projected to grow to 15.5 million (2028)

This does not account for the increased role of rail freight, which is forecast to increase 32% from 2021 tonnages through to 2035.

### Specific impacts once the City Rail Link (CRL) is completed.

As demonstrated through the passenger growth projections above, the CRL project will create a significant increase in passenger train services in Auckland.

The CRL day 1 delivery outcomes will increase Metro service capacity from the current 15,000 passengers per hour, to 22,500 passengers per hour. This is represented by an increase of Metro services from 12 trains per hour to 24 trains per hour. This increase in capacity/frequency of train services will increase in the risk profile of the Auckland metro network.

To ensure the CRL can deliver to its potential, Auckland metro rail participants: Auckland Transport (AT), Auckland One Rail (AOR), and KiwiRail will implement the CRL day-one operational plan. There are multiple different infrastructure projects underway that all contribute to successful delivery of CRL. This includes:

- Rail infrastructure development/delivery programme chaired by AT and supported by AOR, which includes day-one time-table development, level crossing programme, and station developments.
- Rail Network Rebuild and Rail Network Growth Impact Management, construction of a third main (additional track) and Papakura to Pukekohe electrification is controlled by KiwiRail.

Thereafter CRL delivery outcomes increase hourly patronage capacity further to the maximum capacity of 54,000 people

Waka Kotahi as the Rail Safety Regulator has regular meetings with AT, AOR, and KiwiRail to remain strategically aware of progress on these programmes.

#### **The level of risk now and after future growth**

As the access provider (rail track and infrastructure owner), KiwiRail controls the use of Auckland Metro rail network. It is also KiwiRail's and AOR's responsibility as the rail licence holders to ensure that all safety risks by allowing rail operators to enter/use its network are managed to a So Far As Is Reasonably Practicable (SFAIRP) level as required in the Railways Act 2005.

The Government has a goal of reducing emissions from freight transport by 35% by 2035. Rail has a key role to play in this and it is expected that rail-freight will increase to help meet this target. This will result in an increase rail freight traffic through the Metro areas and in turn will change the risk profile of the system. The Rail Safety Regulator will monitor this emerging risk.

There is a project within KiwiRail to retrofit all North Island Freight locomotives with European Train Control System (ETCS) which is an on-board rail safety system. The latest verbal update received from KiwiRail is that the programme will be completed in 2027.

The trial inter-regional train service Te Huia has been using KiwiRail freight train timetable slots to travel into Auckland Metro area. Te Huia does not have ETCS installed, and it is unlikely to be installed before the end of the 5-year trial period.

As a result of two incidents where Te Huia went through a red signal, it was temporarily banned from entering the Auckland metro network. However, KiwiRail have worked closely with the rail regulator to resolve our concerns and the service will be allowed to resume entering the metro network from 7 August.

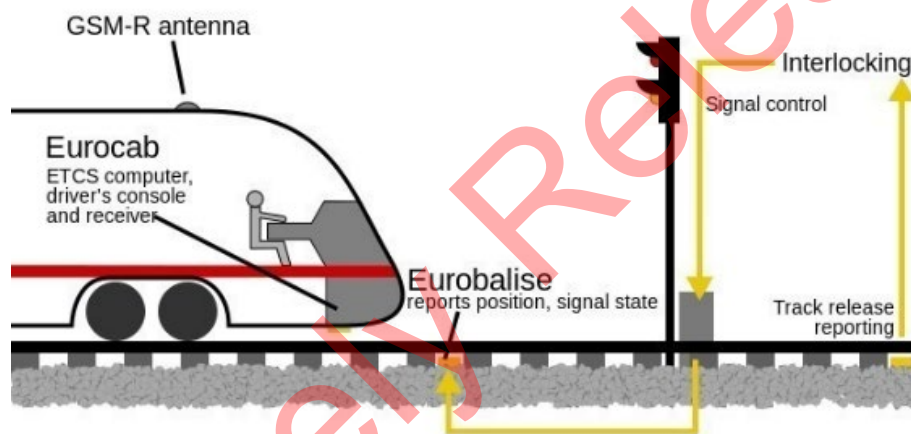
KiwiRail has now implemented several risk mitigation controls, including an Electronic Train Protection system for the train's travel through the metro network (the locomotive will automatically stop if it passes a red signal), and extra training for the service's drivers to better support them to navigate the city's networks.

KiwiRail and Waikato Regional Council intend to increase frequency of services further and an application is currently under consideration by the Rail Safety Regulator.

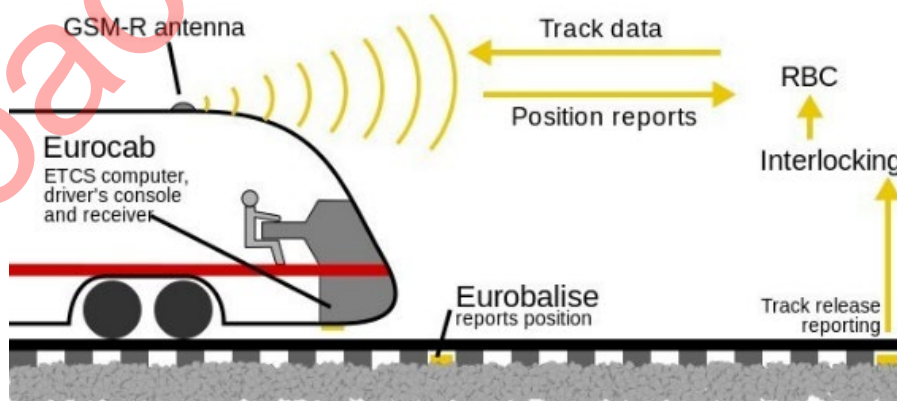
### Background on the use of European Train Control System (ETCS)

ETCS continuously calculates a safe maximum speed for each train, with cab signalling for the driver and on-board systems that take control if the permissible speed is exceeded or signals are passed at danger. Trackside signals and equipment, and train mounted systems need to be standardised according to the different ETCS levels. Please see the diagrams below.

ETCS Level 1 is already in operation in the Auckland metro network on the metro (electric) trains and brings benefits of safety and interoperability. For Level 1, equipment is installed on existing lineside equipment and in cab. Spot transmission of data from track to train (and versa) is via electronic beacons (Eurobalises) on the track which detect train position.



ETCS Level 2 allows trains to operate at a higher commercial speed, thus improving capacity on the network and supporting increased frequencies. While Eurobalises are still used transmission of position and other data from track to train is continuous giving the required signalling information to the drivers display. A business case is under development to upgrade to Level 2 in Auckland.



Wellington currently uses an 'Automatic Train Protection' (ATP) system. This is more manual system utilising physical 'trip-cocks' that identify that a signal has been passed at danger and applying brakes. A business case is under development to install ETCS Level 2 in Wellington.