KiwiRail - Web form submission

Critical Infrastructure Resilience

What is your name?

Angus Hodgson

What is your email address?

angus.hodgson@kiwirail.co.nz

Are you responding as an individual or on behalf of an organisation?

Organisation
KiwiRail

Do you consent for your submission (including identifying information) to be published and shared in lines with terms for this public consultation?

Yes

Do you consent for your submission (including identifying information) to be published and shared in lines with terms for this public consultation? - Please note what should be withheld and for what reasons.

[Nil]

Does more need to be done to improve the resilience of New Zealand's critical infrastructure system?

• The starting point for this question is the meaning of the word "resilience". As there is no common standard this word implies different things to different people. We note that the Ministry of Civil Deference and Emergency Management in "National Disaster Resilience Strategy" attempts to define resilience (on page 19), however, there is no legislated definition of the word. Anything can be made to become more resilient however there is always a trade-off in terms of resources (this then raises the issue of whether it is value-for-money).
• Note that KiwiRail is a "Lifeline utility" (due to its network and services) under the Civil Defence Emergency Act 2002. Part B(8) of Schedule 1 includes "an entity that provides a rail network or service." For KiwiRail, the Train Control function is a critical system that underpins all train movements in New Zealand, and as such KiwiRail separates the functions between Wellington and Auckland with seamless control transitions if one location is down. Different parts of the network are more critical than others based on the volume of freight/passenger traffic.
• The "below rail" (the infrastructure relating to rail) is funded by the Government and the level of resilience has been guided by the Government Policy Statement of Land Transport, and the Rail Network Investment Programme. The Government has provided $9.1 billion to funding KiwiRail since 2018. This $9.1 billion comprises of: $6.3 billion to improve the existing network and for new infrastructure projects, and $2.8 billion to support the renewal of KiwiRail's rolling stock, ferries, and mechanical depots.
• The Rail Network Investment Programme (RNIP) is funding a programme of work at KiwiRail to improve the maturity of our asset management systems. These improvements are accruing over a

period of years which will assist KiwiRail in reaching the level of maturity required to meet an increase in obligations. If this is required to be accelerated, then a conversation would be required regarding funding, timeframes and resourcing.
• Also, as part of our resilience business case we have identified parts of the network to improve upon and are improving them subject to prioritisation and adequate funding.

Have you had direct experience of critical infrastructure failures, and if so, how has this affected you?

• Yes, KiwiRail has direct experience of critical infrastructure failures. These have been a result of causes from both a systems failure and a force majeure (i.e., an inevitable accident).
• An example of a systems failure is Distributed Denial of Service attack on the NZ Exchange (NZX) in 2020. Because we used the same ISP (Spark) as NZX, KiwiRail experienced a significant reduction in network throughput – though we did not experience 'outages'.
• An example of a force majeure is the recent weather events in the North Island. On 29 January 2023 the Auckland Anniversary Weekend storms and from the 12-14 February 2023, Cyclone Gabrielle (Cyclone) caused significant damage, including to the national rail network.

How would you expect a resilient critical infrastructure system to perform during adverse events?

• We expect resilient critical infrastructure to perform well during adverse events. Resilient infrastructure supports a high resilience community, as defined by NZ Lifelines Council.
• We acknowledge that there can be a level of interdependence between different critical infrastructure operators, and the overall system can only be as strong as the most vulnerable critical infrastructure system.

Would you be willing to pay higher prices for a more resilient and reliable critical infrastructure system?

• As a State-Owned Enterprise, the below rail is funded by the Government. So KiwiRail is willing to increase the level of resilience for its network, however, the Government needs to be willing and able to fund it.

The work programme's objective is to enhance the resilience of New Zealand's critical infrastructure system to all hazards and threats, with the intent of protecting New Zealand's wellbeing, and supporting sustainable and inclusive growth. Do you agree with these objectives? If not, what changes would you propose?

Yes, we agree.

Do you agreed with the proposed criteria for assessing reform options? If not, what changes you would propose?

Yes, we agree.

Do you think the megatrends outlined pose significant threats to infrastructure resilience?

Yes, we agree.

Are there additional megatrends that are also important that we haven't mentioned? If so, please provide details.

• We would like to suggest the addition of the following trends:
• Additional Trend 1: Labour and Skills shortage e.g., this ranges from trained and experienced IT staff, engineers to operational staff such as train drivers.
• Additional Trend 2: Population growth particularly uneven growth especially in major centres in NZ. Uneven growth, and very high growth, can cause critical infrastructure to rapidly reach capacity, which is likely to lead to severe congestion. Conversely, regional contraction can cause otherwise critical infrastructure to become uneconomic, as demand is insufficient to justify the level of capacity provided.
• Additional Trend 3: Demand on the electricity network may create issues (e.g., increased demand from electric vehicles).

Do you think we have described the financial implications of enhancing resilience accurately? If not, what have we missed?

• For context KiwiRail's rail infrastructure spans the length of New Zealand through various geographies. As the effects of vulnerabilities such as climate change will occur to different extents across the country, the extent and severity to which our business will be exposed will also vary.
• There is inherently going to be a trade-off between achieving a certain level of resilience and funding. For KiwiRail it may not be commercially feasible for resilience to be funded beyond a certain level, so if the Government wishes to enhance the level of resilience it will need to appropriately fund it. As the obligation to maintain and retain critical infrastructure is on the Government.

How important do you think it is for the resilience of New Zealand's infrastructure system to have a greater shared understanding of hazards and threats?

• Yes, we agree in principle that better shared understanding of hazards and threats is very important. As without a common and agreed understanding of hazards and threats it will be difficult to achieve greater levels of resilience. Overall better shared information will enable better investments and cooperation across critical infrastructure operators.
• However, in practice the issue arises of how this can be done in a way that provides useful insight without being administratively too burdensome (and as a result costly).

If you are a critical infrastructure owner or operator, what additional information do you think would best support you to improve your resilience?

We agree that additional information is especially important in an emergency but need to invest continuously to be sure of having this capability when it is most needed. Additional information that would be useful include (but not limited to):
Shared data sets on risks and hazards though we are not a research organisation (but having such information would be valuable), and the quality of our planning would be best if we have access to the best data.

We have limited information on non-KiwiRail assets in the rail corridor or attached to rail bridges. Waka Kotahi and local road controlling authorities have the same issue in relation to the road corridor. Utilities are required to provide this information, but we believe it is incomplete, and we cannot compel utilities to complete it.

What do you think the government should do to enable greater information sharing with, and between, critical infrastructure owners and operators?

• We note that DPMC have mentioned during one of their information sessions that an aspect of information sharing was mandatory reporting. Our main issue with this is that mandatory reporting is an invisible cost loading, and any additional costs should for KiwiRail needs to be an additionally and adequately funded by the Government.
• In terms of existing information sharing arrangements, we have a strong working relationship and communications with Waka Kotahi, Ministry of Transport, Local and Regional Councils. We have regular reporting requirements and engagements with these stakeholders. Therefore we would like DPMC to utilise existing information already available rather than having additional mandatory reporting.
• However, the quality and quantity of data that can be shared in an emergency depends not so much on good relationships as on establishing and maintaining a data sharing platform that is ready to go in an emergency. Such a platform takes time to set up and resources to maintain.
• Much of our data is openly available; the location of the rail network is public information. However, we recognise the need to share sensitive data as well as public data, and that it takes time and resources to work through the issues that arise.

Would you support the government having the ability to set, and enforce, minimum resilience standards across the entire infrastructure system?

• We agree that minimum resilience standards across the entire infrastructure system could be useful as long as they fit the circumstances of each case, for instance, across telecommunications, road and rail. There may be a case for setting minimum resilience standards across the critical infrastructure system, however we look forward to future proposals and engagement with DPMC to ascertain what they may look like, and how this could be achieved.
• However, the extent of standards across different industries is far too large for any single agency to claim competency for. Instead, the Government could establish long-term targets for the levels of service expected from infrastructure and then leave delivery agencies to invest (where funded) to achieve this over time.

Would you support the government investing in a model to assess the significance of a critical infrastructure asset, and using that as the basis for imposing more stringent resilience requirements?

Yes, as long as these resilience requirements are applied consistently and fairly across the transport system thereby creating a “level playing field” rather than imposing more stringent requirements on one particular mode of transport. Moreover, as previously mentioned, to support this work KiwiRail will require additional and adequate funding from the Government in order to undertake this work.

What criteria would you use to determine a critical infrastructure asset's importance? Investing in a model to assess a critical infrastructure asset's criticality, and using that as the basis for imposing resilience requirements that are more stringent on particularly sensitive assets?

• KiwiRail has criteria to assess criticality for both our assets and the network. These are used for project prioritisation, and taken into consideration for our business cases (and other future investment planning).

Do you think there is a need for the government to have greater powers to provide direction or intervene in the management of significant national security threats against a critical infrastructure? - Is there a need for greater powers? If so, what type of powers should the government consider? What protections would you like to see around the use of such powers to ensure that they were only used as a last resort, where necessary?

We have no comment with regards to additional powers that the Government could consider. We would like DPMC to provide more clarity and detail on why more power is needed, and what powers they envisage. The burden of proof should be on DPMC as they are trying to create greater regulatory powers.

Do you think there is a need for a government agency or agencies to have clear responsibility for the resilience of New Zealand's critical infrastructure system?

We support utilising existing agencies as much as possible. For instance, Te Waihanga/ NZ Infrastructure Commission may be best placed to assume the co-ordination functions envisaged, but not the regulatory functions.

We believe that the priority is to identify the gaps in the regulatory environment, and then set out a plan to fill these gaps, through incremental improvements and expansions wherever possible. Our preference is for the Government to pursue the abovementioned solution, rather than to invest resources into creating an additional new entity, which could create an additional layer of compliance and complexity (in particular, line of sight and reporting duties in times of crisis and emergency response).

Based on our understanding provided in the discussion document, this new regulator would be focused primarily focused on compliance. While this would have benefits when extreme events occur, additional costs will be imposed on infrastructure providers at all other times. We accept that KiwiRail's network, and the road network, are currently less resilient than is optimal. However the task of defining an optimal level of resilience, and investing to achieve this level, need to be structured in ways that do not indirectly and directly impose costs onto critical infrastructure providers.

Do you think there is a need for compliance and enforcement mechanisms (eg. mandatory reporting, penalties, offences) to ensure that critical infrastructure operators are meeting potential minimum standards?

We strongly oppose the imposition of penalties and offences, which seems like a disproportionate response. Imposing penalties and offences could lead to instances of punishing critical infrastructure

funding operators for not meeting additional administrative burdens that have not been budgeted.

Any mandatory reporting should be at the entity level and there should be incentives to assist critical infrastructure operators rather than penalties to enforce compliance.

What additional comments do you have?

[Nil]