



Report pursuant to s42A Resource Management Act 1991

In the matter of:	A Notice of Requirement to construct and operate a new intermodal rail and freight hub on land between Palmerston North and Bunnythorpe
And:	A hearing by Palmerston North City Council pursuant to s100A
Requiring Authority:	KiwiRail Holdings Ltd
Hearing date:	Commencing 9 August, 2021

S42A Technical Evidence Summary Statement for Hearing: Rail Design Construction and Operation

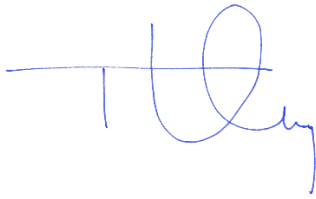
By: Michael Than

1. I am the author of a Section s42A Report on Railway Track design, construction and operation.
2. Based on the information provided by KiwiRail, I agree:
 - a. The existing Tremaine Avenue railyard site is at capacity, and due to its legacy track layout configuration the Tremaine Railyard cannot be expanded to handle future projected freight demands;
 - b. The proposed site for the Freight Hub at Railway Road appears likely to accommodate the current operational needs of KiwiRail's existing freight task in the region; and
 - c. The concept design and layout of the proposed Freight Hub appears likely to improve the current train operation and container operation throughput.
3. Further to my s 42 A report, I would like to speak about two of my recommendations, after hearing questions and discussion about them during KiwiRail's presentation. Specifically, these issues are:
 - a. my uncertainty about how trains will be operated and accommodated within the yard, leading to my recommendation that a detailed simulation of operations be carried out; and
 - b. My concern that a Safety in Design (SID) assessment has not already been carried out, and my recommendation that it be required to be done as part of this process.
4. First, Mr Moyle, in his oral evidence, provided further information on how trains may operate in the proposed Freight Hub. I found this information important, and consider it provides further justification for the 'Concept of Operation' report that I have recommended through the NOR process.
5. Mr Moyle began by explaining the complexity of an integrated hub where 3 types of freight can access rail. The first type was bulk freight, the second was containerised freight, and the third was from the distribution facility where trucks would be loading directly onto a train. Mr Moyle said that "*when a train leaves Palmerston North it will have all three types of freight product on that train*". It is my understanding that to assemble a train containing all three types of freight a series of train shunting movements will be required.
6. According to Mr Moyle's description, when trains are brought into Palmerston North, the trains will be broken up and the freight will be put into the customer's shed. It is my understanding that breaking up trains as described will also require a series of train shunting movements.

7. When the Panel questioned Mr Moyle on the night-time operation of the Freight Hub and how noise may impact its surroundings, Mr Moyle's responded that the hub would operate 24/7, due to the logistical and operational requirements of having the 3 types of freight in the distribution chain.
8. In my opinion, this highlights why a report setting out the concept of how the Freight Hub will operate (a 'Concept of Operation' report) and a simulation of the train movements is important. First, based on my experience and industry-accepted standards (AS 7473:2020), a Concept of Operation is fundamentally important for guiding railyard design and layout.
9. Second, a Concept of Operation report should include a train movement simulation, which will help determine the number of trains that can safely be accommodated on specific tracks or areas of the yard during a period of time. A train simulation may also provide an understanding of the extent of locomotive operations and shunting movements. Simulating how trains will be assembled and/or broken up will explain when these train shunting movements will occur, where the movements will be concentrated, and will inform how they will need to be managed. This valuable information could help derive localised exhaust and noise emissions, and inform localised noise mitigation requirements. Emissions mitigation and target controls to achieve sustainability goals during the operational and maintenance phases can then be incorporated in the following stages of design.
10. Based on the above, it is my opinion that the concept design produced by KiwiRail should have been accompanied by a Concept of Operation report, including a train movement simulation. This would have provided a greater level of confidence in the certainty of the operational design and layout elements of the Freight Hub.
11. On Safety in Design ("SiD"). Although the information provided by Kiwirail outlines safety considerations, it is not clear that specific SiD processes have been followed – for example, SiD workshops, lists of hazards, or risk assessments. These SiD processes are a requirement of current KiwiRail design procedures and principles. I recommend that Kiwirail implement SiD procedures prior to detailed design, as these procedures also have the potential to influence the operational design and layout of the Freight Hub.
12. As the two recommendations I have made have the potential to influence the design of the Freight Hub, the reports resulting from my recommendations should also be provided to the Council. In addition to the primary benefits of implementing my recommendations, outlined above, access to these reports would provide the Council and the community more certainty around the design of the Freight Hub as it develops. Having those reports would also give some transparency as to why the design might change between the concept

and detailed design stages, if changes become necessary following these processes.

13. While I accept that it is up to KiwiRail how it runs its yard, I also understand that 'uncertainty' in relation to aspects of the concept design are front of mind in this process, and I consider that the provision of these reports would help to achieve that. It is not my intention that the Council would have any assessment or technical certification role after the reports are provided.

A handwritten signature in blue ink, appearing to be 'Michael Than', written in a cursive style.

Michael Than

24 September 2021