

Appendix F

Technical Assessment - Noise



**TE UTANGANUI
New Zealand Distribution Hub**

For

PALMERSTON NORTH CITY COUNCIL

N2669 – First Draft

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ACOUSAPE CONSULTING & ENGINEERING LTD

A handwritten signature in black ink that reads "Nigel Lloyd". The signature is written in a cursive, flowing style.

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1. Introduction

As part of a study into the relationship between population and employee counts in industrial areas in Palmerston North, Acousafe was asked to consider the long-term implications of noise for an expansion of Te Utanganui – Central NZ Distribution Hub.

The different economic forecasting scenarios for the North East Industrial Zone (NEIZ) have been explored¹.

2. Economic Modelling Results

Economic modelling by Fresh Info has now been completed. Fresh Info's modelling produced six scenarios: low, medium and high growth scenarios, each with *or* without the Kiwirail freight hub proceeding. A key finding of the economic work was that there would be insufficient demand for significant additional industrial land under the low and medium scenarios (with or without the KiwiRail Freight Hub) and that only the two high scenarios would trigger the release of significantly more industrial land that could be added to the NEIZ.

3. Background

Acousafe advised the Council on the establishment of the NEIZ in 2004 and also in the NEIZ expansion in 2014.

The establishment of the industrial zone set in place a transition from rural activities (with dwellings in the rural land). By 2014 (at the time of the expansion) it was identified that all dwellings in the original NEIZ had either been removed or lost their existing use rights for protection (visual and noise) under the District Plan controlled activity Rule 12A.7.2. The extension proposed by PC15 (for the extension) encompassed a number of existing dwellings. The Council identified that targeted amendments were required to ensure alignment with reviewed Business Zone and Industrial Zone sections of the Plan that recognised the current New Zealand Noise Standards. There have been no changes to the New Zealand noise standards since 2014.

The original NEIZ land has been significantly industrially developed now and development into the NEIZ extension is occurring.

The most likely scenarios determined by the economic study are that there will be no need for additional industrial land. The two high scenarios are the most unlikely but would have the greatest noise implications.

The identifiable noise impacts that occur are in the transition of the land from rural (with low density noise sensitive residential activity) to fully industrial. This normally results in the ultimate displacement of noise sensitive activities and the upheaval that causes.

It will be important to manage the future development of noise sensitive activities on land identified for industrial expansion, as any higher density residential development

¹ NEIZ Industrial Land Forecasting Methodology, Fresh Info, dated March 2022.

in the area could stymie plans for future rezoning or actual industrial development. Selecting land with less residential growth will cause less of an impediment to future industrial development with regards to noise impacts.

4. Location of Extra Industrial Land

In discussion with other Technical Advisors, it has become apparent that land to the north of the existing NEIZ has significant issues due to flooding and land stability.

The Fresh Info forecast is that no additional NEIZ land will be required under the low scenario and only 64 ha additional land would be required after 2041 in the medium scenario. In the high scenario 138 ha of additional NEIZ land would be required in 2030 which increases to 266 ha in 2050.

There is currently sufficient rural land to the east of Railway Road to accommodate this additional requirement. Land to the east of Railway Road is currently mostly low density rural housing with some higher density residential enclaves. Some areas are sparsely populated. With respect to noise, the most sensible location for new industrial land would be in the triangle formed between Railway Road, Roberts Line and Kelvin Grove Road (see Figure 1) which already has industrial development to the south of the area. This land is under the flight path and is mostly within the Air Noise Contours. Further examination of the District Plan though shows that the central part of this land is designated for Air Navigation Aids associated with the airport which may restrict the use of this land (see Fig 2). There will also be obstacle limitations within the take-off and climb/approach surface and the transitional side surface.

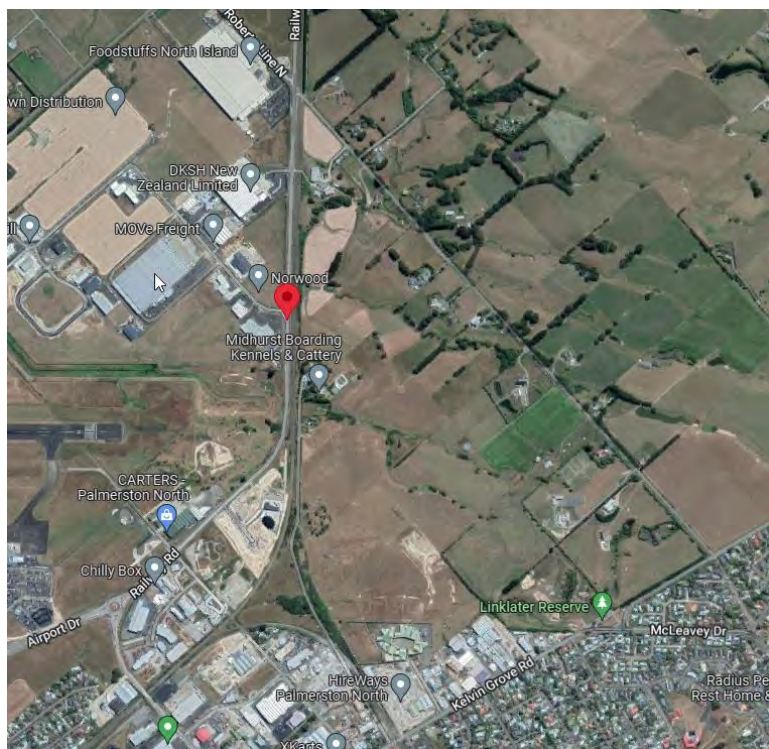


Figure 1. Considered Location of Additional NEIZ land from a Noise Perspective



Figure 2. District Plan showing Designation 13 for Navigation Aids

The next location for additional NEIZ land, where residential density is currently low to sparse, is east of Railway Road opposite the southern part of the designated Freight Hub land, and south of the higher density residential area e.g. Sangsters and Parrs Road, which is closer to Bunnythorpe. This sparsely populated area is generally shown in Figure 3. This area of land also has the benefit of being in the KiwiRail Freight Hub noise contours making it already less desirable for residential subdivision (see Figure 4). It will cushion the impact to locate the eastern industrial area extension on land already predicted to be impacted by future Freight Hub noise.

However, the location either needs to be buffered from dwellings that will be outside the new industrial area (and that will remain) and who are also predicted to be exposed to Future Freight Hub noise, or consideration will also need to be given to how to protect those dwellings from the additional noise they will experience.

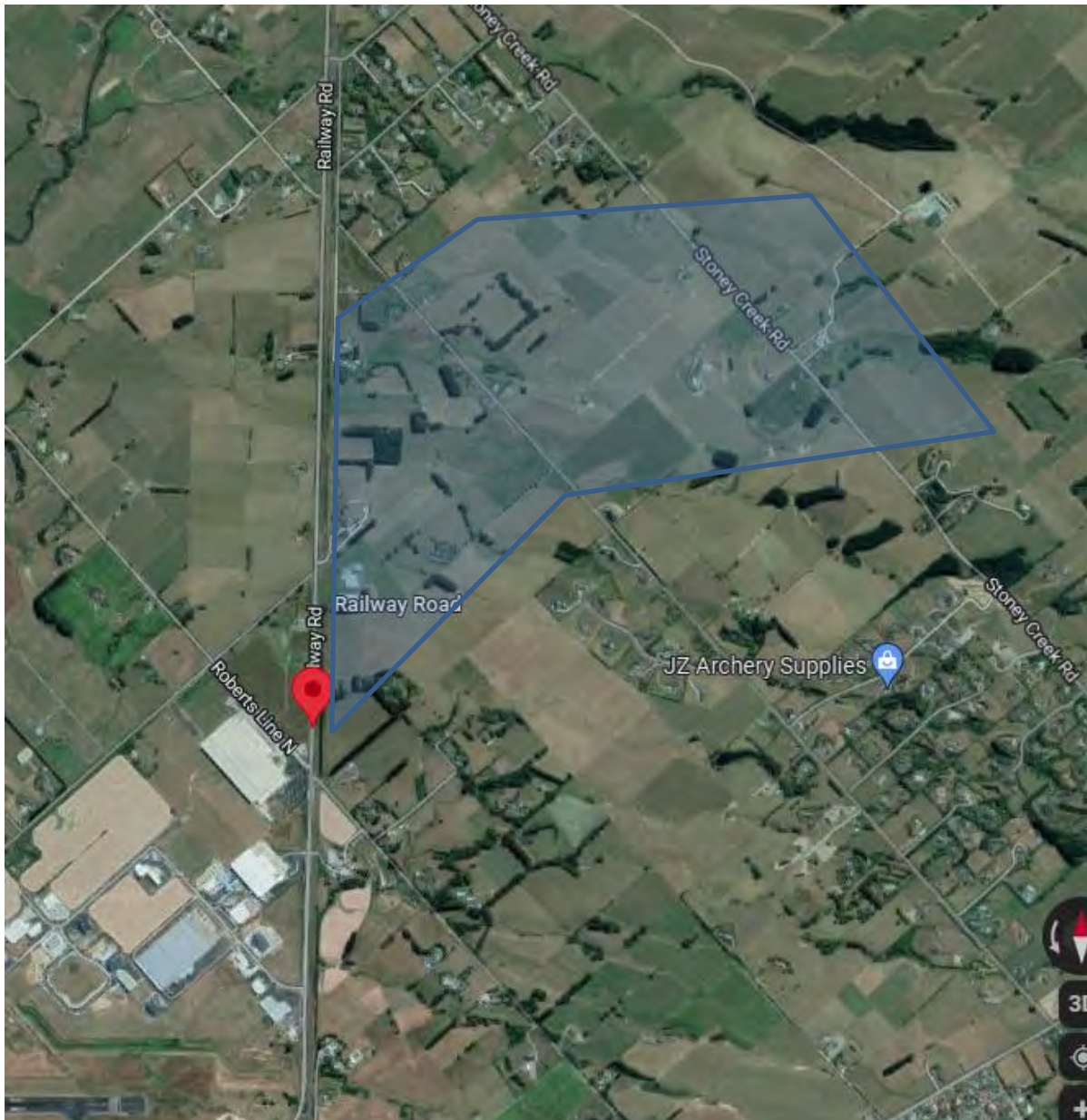


Figure 3. Low Population Area to the East of Railway Road

5. Obstacles to Expansion

The main obstacle to expansion into this area, given the long timeframes, is the likely urban spread prior to the rezoning of the land (unless that rezoning takes place soon). Urban spread would result in higher noise impacts on residential neighbours during the transition period and beyond.

There will also be a need to manage the transition of land use activities from the existing (mostly rural with associated housing) to industrial. An example of this control is the existing District Plan Rule 12A.10.1 for the North East Industrial Zone which has noise limits for the interface with Rural and Residential Zones. The rule also has controls to protect dwellings located within the NEIZ, during the transition period. The change from rural to industrial will inevitably cause some upheaval with respect to

existing dwellings and it is therefore important for the location of the new industrial area to impact on the least number of dwellings and then to control the development of dwellings in that area into the future, until a decision on the need for the land is made.

Traffic noise issues will be another concern.

6. Mitigation of Obstacles

One of the issues with the Freight Hub designation is the uncertainty that exists in the meantime, while the Freight Hub is designed, while it is constructed (in stages) and what the future environment will be. This uncertainty may be created over a 40 year period. There will continue to be uncertainty even if the Freight Hub does not proceed.

A similar situation will occur for a proposed eastern extension to the NEIZ. The need will be to either set aside land for NEIZ or identify an area where the expansion could occur which would then control expansion of noise sensitive (residential) activities into that space. It could be difficult to support this provision for future industrial land given the low probability of the high scenarios and the extensive land area required, combined with that land ultimately not being needed until 2050 in this scenario.

Transportation issues would need to be mitigated by new roading schemes. The ring road has been discussed for some time. From a noise perspective this road should be buffered from residential areas and located such that it conveniently services heavy vehicles and avoids traffic having to pass through Palmerston North or Bunnythorpe. An east-west roading link close to the NEIZ (and bridging or tunnelling the railway line) combined with a ring road located nearby would lessen the need for heavy vehicles to travel further afield to cross the railway line with the potential for higher transport noise impacts in urban/residential areas.

7. Opportunities

There is the opportunity to identify land that currently results in the least (noise) impacts on owners both within that area and on neighbours to the proposed industrial zone extension.

These opportunities can be secured by a Master Plan for the area and controlling new development on the basis of either no new dwellings or a minimum site size (which is consistent with other areas and overlays in the District Plan). The intention is to limit the scale of residential development in the interim until the need for the land is determined. Analysis of the need for this extension should soon become apparent (in the case of the high scenario becoming manifest in the next ten years) and, in the case of the low or the moderate scenario, then land can be released.

The opportunity also exists for a new ring road to ease congestion and to reduce the noise impact of the passage of heavy vehicles through residential areas of both Palmerston North and Bunnythorpe.

8. The Freight Hub

The noise impacts of the KiwiRail Freight Hub have been well canvassed during the Notice of Requirement hearings. Noise from the Freight Hub will propagate into the

surrounding area and the Freight Hub Decision identifies land use management controls and noise insulation requirements for dwellings. The Freight Hub Decision is subject to appeal at the time of writing this report.

The Notice of Requirement effectively removes the designated land from consideration for future NEIZ extension whether the Freight Hub is constructed or not. As far as noise is concerned, we do not consider that the Freight Hub changes any of the above noise recommendations (except in the economic implications it may have).

9. Extra Housing

Under the high growth scenarios (with or without Kiwirail), roughly 3,300 more houses will be needed in Palmerston North than are currently allowed for. Additional housing is not identified as being needed for the low and medium scenarios.

We are currently involved in the Kakatangiata District Plan Change which seeks to rezone a large area of land to the west, southwest and northwest of Palmerston North to residential. The Plan Change commences at the current urban boundary and extends towards Longburn. The proposed ring road would likely link this new residential area with the NEIZ making it convenient to travel between the two areas.

Additional housing would also be appropriately located in Bunnythorpe, which has been identified as a possible location to house future new workers in the NEIZ. With respect to noise, the new dwellings should avoid being inside the proposed noise contours for the Freight Hub and should also be buffered from the ring road (should it pass through Bunnythorpe) and from the noise of other busy roads and the railway line.

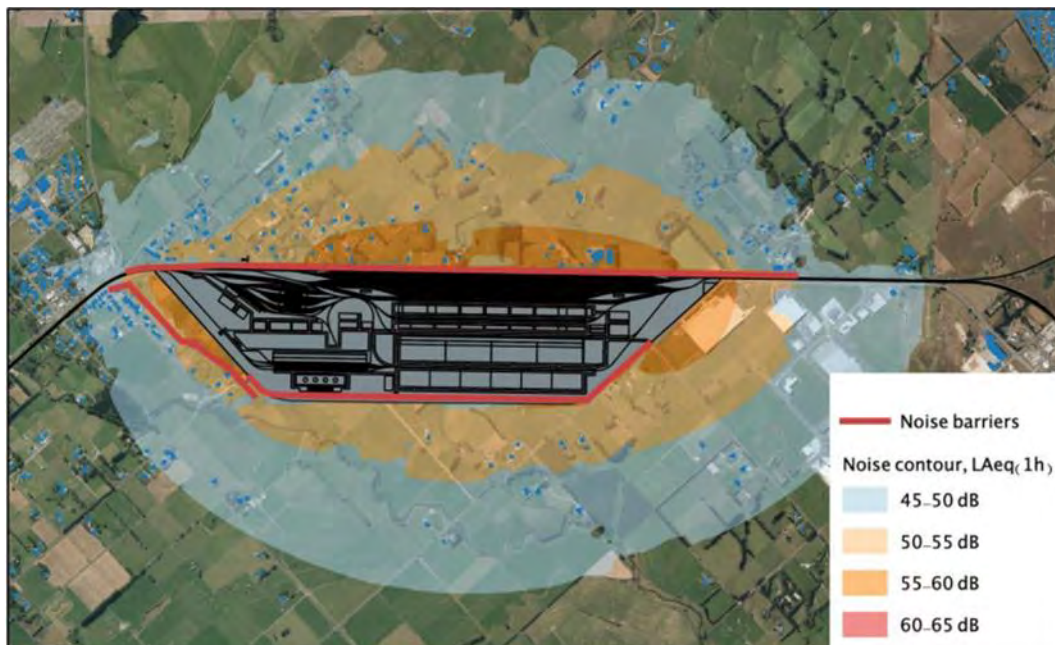


Figure 4. KiwiRail Freight Hub Noise Contours

10. Conclusions

The Council seeks to examine the future potential for industrial land (and associated dwellings) to the north of Palmerston North City and associated with the existing NEIZ and KiwiRail Freight Hub. This report identifies where noise issues may arise, including transitional noise where the land use changes to industrial. Transportation noise is also considered.

To manage new industrial noise during the transition, the NEIZ noise provisions could apply. Rule 12A.10.1 controls noise at the interface between the new Industrial Zone and surrounding Rural and Residential land and also provides some protection for existing dwellings within the new zone during the transition period.

Noise should be considered for new transport routes, which would ideally route noisier heavy vehicles away from residential areas. By designing a convenient and efficient new east west route then this would reduce the impact of heavy vehicle noise in urban and residential areas as currently occurs.

The opportunity exists to provide for a Master Plan for an extension of the NEIZ to the east of the current zone (and Railway Road) in areas where impacts on residential areas would be minimised as far as practical. If the new industrial area were to be located within the predicted noise contours for the KiwiRail Freight Hub then this would cushion the impact of the establishment of industrial activity on land already predicted to be exposed to industrial (Freight Hub) noise.

Future tracking of demand should indicate whether this retention of the land is necessary. The land can be released if it is not required.