

Macroinvertebrate community

- 6.27 The samples collected in January 2021 confirmed the assertion made in my original AVEE that the macroinvertebrate communities are suggestive of poor-quality habitat and are dominated by low MCI scoring taxa which are highly tolerant of adverse conditions.¹⁰ The results suggest the systems have poor water quality and/or severe pollution.
- 6.28 Detailed results of the January 2021 macroinvertebrate sampling were included as Appendix 2 of my First Section 92 Response.

7. ECOLOGICAL VALUES

- 7.1 Section 5 of my AVEE discusses the ecological values of the various elements of the Site's ecology, including habitats, communities, and species. I have assessed the ecological values in accordance with the EIANZ (2018) guidelines.¹¹ These guidelines utilise four criteria (representativeness; rarity/distinctiveness; diversity and pattern; ecological context) for terrestrial considerations, with the same four plus ecological integrity for freshwater considerations. Each habitat, community, feature, is then accordingly assigned a 'value' ranging between negligible and very high. Species are scored according to their DOC-derived conservation status.¹²
- 7.2 The detailed assessment of ecological value is included in section 5 of the AVEE and is summarised below.¹³

¹⁰ Classifications as listed in:

- For freshwater fish - Dunn *et al.* 2018. Conservation status of New Zealand freshwater fishes, 2017. *New Zealand Threat Classification Series 24*. Department of Conservation, Wellington.
- For avifauna - Robertson *et al.* 2017. Conservation status of New Zealand birds, 2016. *New Zealand Threat Classification Series 19*. Department of Conservation, Wellington.
- For vascular plants - de Lange *et al.* 2018. Conservation status of New Zealand indigenous vascular plants, 2017. *New Zealand Threat Classification Series 22*. Department of Conservation, Wellington.
- For herpetofauna - Hitchmough *et al.* 2016. Conservation status of New Zealand reptiles, 2015. *New Zealand Threat Classification Series 17*. Department of Conservation, Wellington.
- For freshwater invertebrates - Grainger *et al.* 2018. Conservation status of New Zealand freshwater invertebrates, 2018. *New Zealand Threat Classification Series 28*. Department of Conservation, Wellington.

¹¹ EIANZ (2018) guidelines, section 5.2 and 5.3, pages 63-71.

¹² EIANZ (2018) guidelines, table 5, page 67.

¹³ AVEE, section 5, pages 20-26.

Terrestrial environment

Terrestrial vegetation

- 7.3 The native amenity plantings have negligible ecological value due to their young age, homogeneity, lack of species diversity, and typical proximity to dwellings (ie they have been planted for landscaping, rather than ecological purposes).
- 7.4 The exotic plantations also have negligible ecological value as they are monoculture communities with little local indigenous faunal resource value and are not at all representative of a natural community. However, I considered their ecological contextual value as moderate as these are the only patches of dense, tall, mature vegetation within the landscape and may act as shelter and stepping-stones for some fauna. However, using the valuation approach described in the EIANZ (2018) guidelines, the overall value is still negligible.
- 7.5 I consider the agricultural vegetation to have negligible ecological value due to their management to support agricultural / farming practices and regular periodic harvest (removal).

Avifauna

- 7.6 Under the EIANZ (2018) guidelines, the ecological value of species is primarily related to rarity.¹⁴ The avifauna communities and all species within it that the Site currently provides primary habitat for have, at most, low ecological value.

Herpetofauna

- 7.7 Based on the habitats present within and surrounding the Site, it is highly unlikely any rare or threatened herpetofauna species are present within the Site. I conclude the herpetofauna community has a low ecological value.

Aquatic environment

Wetland environment

- 7.8 As set out above, no natural wetland habitats have been identified within the Site.

¹⁴ AEVE, Table 1, page 6.

Stream environment

- 7.9 I consider Stream system 1 to have low ecological value as it does not contain any rare or distinctive features, and only provides uniform, simple, aquatic habitat, and has been subjected to prolonged agricultural land use effects.
- 7.10 The northern tributary of Stream system 2 is modified and subjected to regular disturbance relating to stock access, it does not contain any rare or distinct features and does not have ecological integrity. Therefore, I assess the section that flows through the Designation Extent to have low ecological value. I did consider its value as a fish passageway to better habitats upstream as moderate in its own right, but this was not enough to increase the overall ecological value.
- 7.11 I also assessed the ecological value of the northern tributary of Stream system 2 upstream of Site so that this could be considered when assessing the potential fish passage effects of the Freight Hub. Overall, this section of the tributary has low ecological value. It does provide better habitat for fish as stock are excluded from it (at least throughout the accessed reach) and the incised nature of the channel provides beneficial shading that is not present throughout the Designation Extent, but it is still a modified waterway that has been subjected to prolonged agricultural land use.
- 7.12 The absence of aquatic habitat within the southern tributary of Stream system 2 means its only aquatic value is as a hydrological flow path to downstream aquatic environments. Therefore, I have assessed this tributary to have negligible ecological value.

Aquatic fauna

- 7.13 Longfin eel (at risk - declining) is the only conservation-valued freshwater species which I believe could have the potential to reside within the Site. This species is considered to have high ecological value (although I note that the most recent DOC threat publication for native fish states that the data suggests longfin eel is trending towards being, if not already, no longer be an "At risk" species).¹⁵ All other indigenous freshwater fauna which may be present throughout the Site are expected to be not threatened meaning they have low ecological value. Exotic species have negligible ecological value.

¹⁵ Dunn *et al.* (2018) - *Conservation status of New Zealand freshwater fishes, 2017*. New Zealand Threat Classification Series 24. Department of Conservation, Wellington.

Summary of ecological values

7.14 The following is a summary of the ecological value of the habitats, communities, and species within the designation extent:

(a) Terrestrial environment:

- (i) Vegetation – **Negligible.**
- (ii) Avifauna habitat – **Negligible.**
- (iii) Avifauna species (indigenous) – **Low.**
- (iv) Avifauna species (introduced) – **Negligible.**
- (v) Herpetofauna habitat – **Negligible.**
- (vi) Herpetofauna species – **Low.**

(b) Aquatic environment:

- (i) Wetlands – None identified.
- (ii) Aquatic habitat:
 - (aa) Stream system 1 – **Low.**
 - (bb) Stream system 2 (Northern tributary) – **Low.**
 - (cc) Stream system 2 (Southern tributary) – **Negligible.**
- (iii) Aquatic fauna:
 - (aa) Longfin eel (small possibility and in low numbers) – **High** (due to At Risk – Declining conservation status).
 - (bb) All other potential indigenous fauna – **Low** (due to Not Threatened conservation status).
 - (cc) All other potential introduced fauna – **Negligible.**

8. ASSESSMENT OF POTENTIAL ECOLOGICAL EFFECTS

- 8.1 The overall level of assessed ecological effects is determined using the process provided in the EIANZ (2018) guidelines,¹⁶ which is described in my AEVE.¹⁷ The results are provided in detail in section 6 of my AEVE¹⁸ and are summarised below.

Vegetation clearance and loss of avifauna and herpetofauna habitat

Vegetation clearance

- 8.2 Any vegetation clearance relating to the Freight Hub will (because of its type, extent and functional value) result in no more than a minor shift from the existing baseline within the wider landscape. I have concluded that this equates to a low magnitude of effect on vegetation communities in this landscape that have negligible ecological value meaning the level of effect is very low (the lowest possible effect short of a beneficial effect).

Loss of avifauna and herpetofauna habitat

- 8.3 Vegetation clearance within the Site will not change the underlying character, nature, or resource base of the local avifauna and herpetofauna and will not affect any local populations of, at most, low value species. I conclude that this low magnitude of effect on, at most, low value species results in a very low level of effect.
- 8.4 In my opinion, the proposed stormwater treatment ponds will provide suitable habitat (that currently does not exist) for many of the threatened or at risk avifauna species. Therefore, during the operation phase of the Freight Hub, there is the potential that some of the species identified within the OSNZ square (see paragraph 6.5 above for explanation of the OSNZ square), but which do not currently have primary habitat within the Designation Extent, will begin to utilise and reside within the Site and surrounds. If this occurs, it would be a positive effect.

Stream loss

Stream system 1

- 8.5 Approximately 2,352 linear meters of stream is expected to be lost from the Freight Hub which equates to approximately 12% of stream length within this

¹⁶ EIANZ (2018) Guidelines, section 6.4, pages 82-85.

¹⁷ AEVE, section 3.1, pages 5-7.

¹⁸ AEVE, pages 26 to 31.

sub-catchment. I consider this loss will result in a very slight change from the existing baseline. This is a low magnitude of effect on a low ecological value system meaning a very low level of effect.

Stream system 2

- 8.6 Approximately 835 linear meters of the northern tributary is expected to be lost which equates to approximately 4% of stream length within this sub-catchment. I consider this would also be a very slight change from the existing baseline. In this low value system, a low magnitude of effect results in a very low level of effect.
- 8.7 Approximately 590 linear meters of the ephemeral southern tributary is expected to be lost which equates to approximately 3% of stream length in this sub-catchment. This will also result in only a very slight change from the existing baseline. This low magnitude of effect on the negligible value southern tributary results in a very low effect.
- 8.8 Overall, approximately 1,425 linear meters of Stream system 2 is expected to be lost which equates to approximately 7% of stream length in the sub-catchment. When combined, I believe this will still only result in a very slight change from the existing baseline in the catchment. Therefore, the overall effect remains very low.

Mangaone stream catchment

- 8.9 In the context of the Mangaone Stream catchment, approximately 3,777 linear meters of stream is expected to be lost which equates to <1% of the mapped stream length. This will cause a negligible change from the existing baseline. Overall, a negligible magnitude of effect on the, at most, low value streams, results in a very low level of effect.

Fish passage impediment

- 8.10 I consider fish passage is currently unfavourable through the Site of the northern tributary of Stream system 1 due to, for example, current stock access, poor riparian conditions, isolated drying, and raised temperatures during summer. I consider that if culverts / pipes are installed in accordance with the stream simulation approach as described in the National Institute of Water and Atmosphere Research ("**NIWA**") fish passage guidelines¹⁹ (some of these details are included in the NES-F culvert installation provisions), the

¹⁹ Franklin *et al.* (2018) - *New Zealand Fish Passage Guidelines: For structures up to 4 metres*. NIWA, Hamilton.

Freight Hub could have a positive effect on fish passage in this tributary. Successful installation would provide for unimpeded passage through a reach that could offer shade and cover that was not present prior to the development of the Freight Hub. This positive magnitude of effect results in an overall net ecological gain relative to fish passage.

- 8.11 It is often considered that culverts/pipes do not provide habitat values and are as such dismissed or treated adversely. If the culverts / pipes are installed according to the stream simulation approach of the NIWA fish passage guidelines, then, especially in soft bottomed streams, it is highly likely aquatic habitat provision within the Site will be improved. The fish passage guidelines also acknowledge that physical habitat continuity and ecosystem process can be achieved, which I believe would achieve an overall improvement on the current condition.
- 8.12 While there is limited understanding of the ecological value within culverts, there is increasing literature on aquatic fauna within cave systems,²⁰ including research showing freshwater systems flowing through caves can still support a fauna that has comparable relative abundances to the inflowing surface stream.²¹ Therefore, I consider it is highly likely that long culverts, if installed according to the stream simulation approach, can support an aquatic fauna.
- 8.13 Overall, the lack of existing knowledge and research in this matter means I have taken a conservative approach and not assessed it as a positive effect.
- 8.14 If culverts are installed incorrectly and result in impeded passage (eg lips, laminar flows, high velocities) then migrating fish may not be able to access favourable habitats upstream of the Designation Extent. I consider this equates to a major alteration to the existing baseline due to the loss (via inaccessibility) of a high proportion of available habitat in this system. A high magnitude of effect on a low value system equates to a low level of effect if improper installation occurs.
- 8.15 I have not assessed the effect of culvert / pipe installation on fish passage within the other tributaries due to the absence of stable perennial habitat upstream of the Site.

²⁰ For example May (1963) - New Zealand Cave Fauna. II - The Limestone Caves Between Port Waikato and Piopio Districts. *Transactions of The Royal Society of New Zealand: Zoology*, Volume 3, issue 19; McNie (2015) - Left in the Dark: The effect of agriculture on cave streams. *Master of Science Thesis*. Massey University, Manawātū.

²¹ Death (1989) - The effect of a cave on benthic communities in a South Island stream. *New Zealand Natural Sciences*, 16, 67-78.

Erosion and sedimentation

- 8.16 I have assumed that streams under the Freight Hub will be piped prior to earthworks commencing which greatly reduces the potential for erosion of the stream edges and reduces the potential for sediments to enter the watercourses. I have also assumed that erosion and sediment control measures thereafter will be according to industry standard. Given the prevailing soft-bottom conditions in the affected stream both within and downstream of the Designation Extent, any sediment inputs will result in, at most, a low magnitude of effect, which would result in a very low level of effect regardless of which stream.

Stormwater discharges

- 8.17 At this stage of the process, stormwater treatment measures have not been subject to detail-design. However, an assessment has been made of the area of land required to treat stormwater before it is discharged from the Site - as discussed in the evidence of Mr Leahy.²² This has been included in the Designation Extent. Therefore, I have assumed stormwater will be treated using a combination of bio-retention basins before it is discharged.
- 8.18 Assuming these measures are utilised, the magnitude of effect on aquatic ecological values is predicted to be negligible, resulting in a very low effect.

Summary of overall effects

- 8.19 In summary, the potential effects from the Freight Hub on the local ecology (including habitats, communities, and species) are expected to be, at most, very low due to the absence of highly or moderately valued (sensitive) ecological components within the Designation Extent or in receiving environments. The expected level of effects are summarised below:
- (a) Terrestrial environment:
 - (i) Vegetation clearance/loss – **Very Low.**
 - (ii) Avifauna habitat loss – **Very Low.**
 - (iii) Herpetofauna habitat loss – **Very Low.**

²² Evidence of Allan Leahy, dated 9 July 2021, at section 7.

- (b) Aquatic environment:
 - (i) Wetlands – None identified.
 - (ii) Stream loss – **Very Low.**
 - (iii) Fish passage impediment (if structures poorly installed) – **Low.**
 - (iv) Erosion and sediment discharges – **Very Low.**
 - (v) Stormwater discharges (assuming appropriate management) – **Very Low.**

8.20 Overall, I consider that the effects of the Freight Hub are likely to be very low to the local ecology, and in some cases, provides an opportunity to improve the condition of ecological features.

9. MEASURES TO ADDRESS EFFECTS

9.1 In determining the ecological mitigation recommendations, I was mindful of both the results of my effects assessment described above and in my AEVE, and of the relevant policies and objectives of key national and regional policy documents. These include:

- (a) The NPS-FM:
 - (i) Policy 6 - There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted;
 - (ii) Policy 7 - The loss of river extent and values is avoided to the extent practicable; and
 - (iii) Policy 9 - The habitats of indigenous freshwater species are protected.
- (b) The NES-F, which describes what is expected when dealing with natural wetlands, and potential fish passage effects from the placement of certain structures.

(c) Regional Policy Statement - The One Plan:

- (i) Policy 5-23 (Chapter 5) - Activities in sites with a Value of Natural State, Sites of Significance - Cultural, or Sites of Significance - Aquatic.

9.2 I am aware that, in terms of the EIANZ (2018) guidance, it is considered that often very low and low levels of effects do not require mitigation. However, the above statutory documents prescribe measures and expectations that supersede the EIANZ (2018) level of effect outcomes, particularly when considering loss of extent of aquatic features. Therefore, I have presented a series of recommendations tailored to each assessed ecological component to ensure these effects remain as assessed during the detailed design phase of the Freight Hub, such that best ecological outcomes can be achieved as part of this project.

9.3 I am also aware that further measures will likely result from the regional consenting phase, including the quantum of offset that may be required to resolve residual effects. However, I am confident that the ecological values present mean any such offset package can be achieved. I do not consider that the need to offset would make the project infeasible. The detailed design phase will direct the quantum of mitigation or offset that is required and where this is to occur. Therefore, in the following paragraphs I only discuss the concepts and not in detail.

Terrestrial environment

9.4 Herpetofauna (expected to be limited to the Not Threatened northern grass skink) should be salvaged prior to earthworks commencing to ensure they are protected as required under the Wildlife Act 1953.²³

9.5 Prior to vegetation clearance, checks should be undertaken for nesting indigenous avifauna during the nesting season as indigenous species are also protected under the Wildlife Act 1953. If nesting indigenous birds are found, measures should be put in place to ensure the nest is not disturbed and clearance is delayed until the nest is no longer in use, or, in some cases, an expert translocates the nest. Nest translocation should be a last resort, and its viability will be dependant on the concerned species.

²³ Hitchmough et al. (2016), Conservation status of New Zealand reptiles, 2015, *New Zealand Threat Classification Series 17*, Department of Conservation, Wellington.

Potential natural wetland environment

- 9.6 To date no natural wetlands have been located within the Site.
- 9.7 If, during the regional consenting process, more detailed Site wide investigations do discover as yet un-noticed small natural wetlands, they are highly likely to be largely exotic, and can be simply mitigated or offset through recreation so as to ensure that there is no local loss of extent or value. The stormwater management system will offer opportunities for this.

Stream environment

- 9.8 Undertake salvage efforts for all fish and kōura (freshwater crayfish) within the affected reaches of stream prior to any works within the stream environment(s).
- 9.9 Where possible, recreate open stream channel(s), preferably around the northern margin for the Freight Hub rather than through it. The proposed naturalised stream channel addresses this. While the piped solutions will offer aquatic habitat (and passage), I am conscious of the NPS-FM (2020) direction to avoid loss of extent of stream and the difficulty Council may have in viewing the piped system as quality aquatic habitat. When regional consents are sought, I expect a stream recreation offset to be put forward to manage the loss of surface open waterway. This will be considered and detailed during the regional consenting phase.
- 9.10 As set out in my AVE at section 7.4, I recommend that:
- (a) KiwiRail ensure best practice sediment management is undertaken;
 - (b) KiwiRail install appropriate and sufficient stormwater treatment devices to ensure any discharged water is of ecologically acceptable quality; and
 - (c) where possible, treated stormwater should be discharged into the remaining and/or replaced reached of the affected Stream system 1 and northern tributary of Stream system 2.

10. RESPONSE TO SUBMISSIONS

- 10.1 A number of submissions have been received on the NoR that relate to the ecological effects of the Freight Hub on the environment.

10.2 I respond to these submissions by way of themes rather than individual submissions. The themes include:

- (a) impacts on aquatic ecosystems, including effects on receiving environments, stream loss, wetland loss and run-off;
- (b) impacts on terrestrial ecosystems, including alteration to greenspace and effects on terrestrial fauna;
- (c) residual uncertainty on the level and extent of ecological effects; and
- (d) consideration of alternative sites.

Impacts on aquatic ecosystems

Effects on receiving environments

10.3 A number of submitters have raised concerns about the effects on waterways both within the Site and on the downstream receiving environment.

10.4 Specific surveys of receiving environments will be undertaken at the regional consenting phase, including physical habitat surveys, more macroinvertebrate community sampling, and fish community surveys. However, I consider the surveys done to date to be enough to understand the values and condition of the Site with a level of confidence. The subsequent and detailed surveys will provide an understanding of the aquatic health of the receiving environment (Mangaone Stream) at the potential point(s) of discharge that cannot be gleaned from the Horizons Regional Council ("**HRC**") State of the Environment ("**SOE**") monitoring data. This information will then be fed into the design and construction methodology of the Freight Hub to ensure that potential adverse effects on the receiving environment are minimised, if not avoided.

10.5 Based on the existing ecological information that is available for the Mangaone Stream, coupled with the habitats that I have been able to observe and the modified condition of the Mangaone Stream, I consider that it is highly unlikely that there will be any ecologically sensitive areas, habitats, or features that will have a material influence on the design for the Freight Hub. Furthermore, any discharges from the construction or operational phase of the Freight Hub, as highlighted in my AEVE and Mr Leahy's evidence,²⁴ will be subjected to New Zealand industry standard treatment. In my experience, this level of treatment is highly unlikely to have an adverse effect on the receiving aquatic environment, especially in modified landscapes like this.

²⁴ Evidence of Allan Leahy, dated 9 July 2021, at section 7.

- 10.6 Overall, the receiving environment will be assessed and considered during the regional consenting and detailed design phase such that I am confident that the Freight Hub will not have an adverse or measurable effect on the receiving environment.

Stream loss

- 10.7 A number of submitters have raised concerns regarding the level of disturbance and stream loss within the Site. My evidence addresses only the aquatic ecology considerations related to disturbance and stream loss. Mr Leahy addresses flooding aspects in his evidence.²⁵
- 10.8 Overall, there is likely to be a reduction in stream length as a result of the Freight Hub development. However, as discussed in paragraphs 8.10 - 8.12 above, I consider that there is the potential for ecological values to develop within the pipes / culverts, assuming that they are designed in accordance with the stream simulation approach within the NIWA fish passage guidelines.²⁶ Therefore, while the streams may no longer be 'visible', it is my opinion that they will provide conditions and values that allows biota to survive within them which is of similar value to that which exists today. Therefore, in my opinion, the quantum of stream loss will not be as severe as it appears from the surface.
- 10.9 Additionally, my AEVE has taken a conservative approach when quantifying the length of stream loss. These lengths will be scrutinised during the detailed design phase for the Freight Hub and opportunities to minimise the length of piped stream will be sought, where practicable.
- 10.10 Where piping cannot be avoided and there is a net reduction in stream length, there are statutory and legislative provisions that ensure there will be appropriate offsetting or compensation. For example, in the NPS-FM, Policy 7 requires that the loss "of river extent and values is avoided to the extent practicable", and Policy 9 requires that the "habitats of indigenous freshwater species are protected". In the first instance, I understand that opportunities to offset any residual loss in stream extent will be sought within the Site (for example the provision of a naturalised stream channel around the northern margin of the Site), followed by within the catchments of the affected tributaries, before looking for opportunities within the wider Mangaone Stream catchment. This directive to offset or compensate for, in this case, loss of

²⁵ Evidence of Allan Leahy, dated 9 July 2021, at section 8.

²⁶ Franklin *et al.* (2018) - *New Zealand Fish Passage Guidelines: For structures up to 4 metres*. NIWA, Hamilton.

stream extent remains irrespective of the value and overall level of effect of the impacted systems.

- 10.11 I consider this provides an appropriate level of certainty that any loss of stream extent will be appropriately managed in accordance with the effects management hierarchy, and I further consider that this will result in an overall benefit to the aquatic ecosystem health and habitat condition provided fish passage is ensured through the piped network.

Wetland loss

- 10.12 A number of submitters have raised concerns regarding the Freight Hub's impacts on wetlands. Some submitters have raised concerns regarding loss of habitats, and I have interpreted these concerns as relating to indirect effects on wetlands. As highlighted in paragraph 6.13 above, no natural wetland habitats have been identified within the Site as at the date of this evidence. The wetland potential areas surveyed have been dominated by exotic vegetation and currently have low-negligible ecological value. They appear to be derivatives of land use modification and, in my opinion, are not inherently resilient as a result.
- 10.13 Additionally, while not installed as ecological mitigation or offsetting, in my opinion the stormwater ponds could be created such that they could be indigenous wetland habitat and become habitat for wetland adapted fauna. Where this occurs, I consider that the Freight Hub will result in an overall net gain in wetland habitat within the landscape.

Run-off

- 10.14 A number of submitters have raised concerns regarding the quantum and condition of surface water entering receiving environments. While I defer to Mr Leahy to address the quality of water run-off from the Site, I provide comment on the receiving environment in my evidence.
- 10.15 The macroinvertebrate sampling undertaken during the January 2021 Site visit indicates the condition and health of the waterways directly affected by the Freight Hub are in poor condition and the macroinvertebrate community is dominated by taxa that are highly tolerant of poor conditions. As detailed in Mr Leahy's evidence, measures will be put in place to ensure any discharged stormwater meets industry standard.²⁷ Given the current poor macroinvertebrate community health, this is likely to result in an improvement

²⁷ Evidence of Allan Leahy, dated 9 July 2021, at section 7.

in run-off quality at least within the Site. In my opinion it is highly unlikely run-off from the Freight Hub will have an adverse effect on the instream water quality and instream fauna.

Impacts on terrestrial ecosystems

Alteration to greenspace

- 10.16 A number of submitters have raised concerns with the change of land use and the effects on the landscape. While some of these concerns are a landscape and visual issue and addressed in Ms Rimmer's evidence,²⁸ I believe it is worthwhile considering these concerns in the context of terrestrial ecology.
- 10.17 As highlighted in paragraph 4.2 above and detailed in section 4.2 of the AEVE,²⁹ the Manawātū Region, including within the Site, is highly modified, with very little indigenous terrestrial features existing within the Site. The development of the Freight Hub will result in a different land use than has existed since the 1800's, however, it provides an opportunity to increase the amount of indigenous vegetation within the Site.
- 10.18 Additionally, features proposed within the Site (specifically the landscape planting and the stormwater ponds) will be an overall betterment in terms of avifauna habitat. For example, there will be considerable habitat for pūkeko,³⁰ and black-fronted dotterel should they continue to frequent the Bunnythorpe area.³¹
- 10.19 Overall, I consider that there will be an overall improvement in ecological condition and values as a result of the Freight Hub.

Effects on terrestrial fauna

- 10.20 A number of submitters have raised concerns about the loss of habitat, or disturbance on, terrestrial fauna. In terms of the loss of habitat, as I have indicated in a number of places in my evidence, I consider that the Freight Hub will provide a range of habitats for terrestrial fauna irrespective of whether the features are an ecological requirement. There will be an increase in indigenous vegetation than currently exists, and there will be an increase in habitat for avifauna that utilise wetted habitats. Only common herpetofauna

²⁸ Evidence of Lisa Rimmer, dated 9 July 2021, at section 7.

²⁹ AEVE, Section 4.2, pages 10 to 14.

³⁰ Pūkeko habitat concerns were specifically raised by Submitter 70.

³¹ As indicated by Submitter 61.

are expected and the conversion of pastoral land to the Freight Hub will not result in a measurable reduction in herpetofauna habitat.

- 10.21 In terms of the potential direct effects on terrestrial fauna, I have included recommendations to manage avifauna and herpetofauna to assist with their protection. Measures to manage herpetofauna and avifauna are also required under the Wildlife Act 1953. Therefore, with the adoption of the proposed management regimes, I do not consider that there will be any measurable effect on the terrestrial fauna.

Residual uncertainty on the level and extent of ecological effects

- 10.22 A number of submitters have also raised concerns relating to the level of effort and field data collection which was undertaken to support the AEVE. Detailed Site investigations will occur as part of the regional consenting stage to support a new assessment of ecological effects that are relevant to the revised design. The results of that additional detailed Site investigations will be used to inform and adjust the final design of the Freight Hub such that effects on the local ecology and receiving environment(s) can be minimised as much as practicable.
- 10.23 Once this has occurred and the actual effects are known, a detailed mitigation and offset package will be developed to address any residual effects that could not be avoided through alterations to the design. In my opinion enough information has been gathered to confirm that the Freight Hub will not have a measurable effect on ecology at the landscape level, with site-specific details to be considered and confirmed at the regional consenting phase.

Consideration of alternative sites

- 10.24 There were a number of submissions relating to the Site selection and assessment of alternative sites. BML were not involved in the Site selection phase and as such I cannot comment on the suitability, or otherwise, of alternative sites with respect to ecology.

11. RESPONSE TO SECTION 42A REPORT

- 11.1 I have reviewed the sections of the Section 42A Report relevant to my evidence, particularly section 9.6 of the S42A Technical Evidence: Planning report (pages 145 to 156) and the S42A Technical Evidence: Ecology report.

11.2 The key ecological issues include:

- (a) lack of investigation of existing or potential ecological values;
- (b) loss of existing or potential freshwater values associated with streams and wetlands;
- (c) effects on fish passage;
- (d) effects on water quality;
- (e) loss of terrestrial habitat; and
- (f) pest control.

Lack of investigation of existing or potential ecological values

Fauna Habitat

11.3 The Section 42A Report expresses concern that the ecological survey undertaken for the purposes of the AEVE has misrepresented the fauna habitat available on Site.³² The Section 42A Report refers to the point raised in submission 61, which suggests that black-fronted dotterel do frequent the Bunnythorpe area.³³

11.4 In my opinion, which has been corroborated by BML ornithologist Ms Karin Sievwright, the Bunnythorpe area does not provide suitable primary habitat for black-fronted dotterel, including for key life stages such as nesting and breeding. While it is plausible that black-front dotterel do frequent the Bunnythorpe farmlands to forage, it is my opinion that there is ample foraging habitat for this species in the wider landscape such that any disturbance within the Site will not adversely affect the foraging capabilities of black-fronted dotterel.

11.5 Furthermore, I consider that the Freight Hub provides an opportunity to introduce black-fronted dotterel nesting and breeding habitat via the stormwater ponds and the created stream along the northern boundary of the Site.

³² Section 42A Report, dated 18 June 2021, at paragraphs 504 to 507.

³³ Section 42A Report, dated 18 June 2021, at paragraph 505.

Understated ecological effects

- 11.6 The Section 42A Report also raises a concern the ecological values have been understated in the A EVE, and consequently the mitigation and offset measures required to appropriately apply the effects management hierarchy have also been understated.³⁴
- 11.7 I do not agree. I am confident that I have assessed appropriate values to the ecological features across the landscape. As stated in paragraph 4.2 above and further discussed in my response to submitters, the existing landscape has been subjected to agricultural practices for over a century. The current ecological values identified in the A EVE reflect this. I am confident the various ecological features have been accurately assessed.
- 11.8 In the event that sub-areas or sub-features have increased or decreased in ecological value since my assessments, the detailed surveys that will occur as part of the regional consenting phase will serve this purpose, but in my opinion, it is highly unlikely that increased values will be found. The mitigation and offset package that will arise from the regional consenting and detailed design phase will accommodate any discrete adjustments. Overall, I am confident the values have been assessed appropriately from a landscape-scale. Further, as highlighted throughout my evidence, the mitigation and offset package may extend outside of the Site, but given the Freight Hub is only subject to preliminary design, I considered it inappropriate to include additional land in the NoR for this purpose.

Loss of existing or potential freshwater values associated with streams and wetlands

- 11.9 The Section 42A Report has expressed concern that the potential effects on streams and wetlands has not been adequately considered in light of the NPS-FM and NES-F which may result in "significant adverse effects on the values of the waterbodies within the site".³⁵ It also acknowledges KiwiRail can utilise the effects management hierarchy in the event effects cannot be avoided.

³⁴ Section 42A Report, dated 18 June 2021, at paragraph 506.

³⁵ Section 42A Report, dated 18 June 2021, at paragraph 498.

- 11.10 Further, paragraph 516 of the Section 42A report suggests analysis of water body effects against the NPS-FM effects management hierarchy should be considered during the NOR process.³⁶ The Section 42A Report states that this would:
- (a) support a more complete assessment of the effects of the proposal;
 - (b) highlight alternative effect avoidance and mitigation options available; and
 - (c) assist in determining the appropriateness of the designation extent and Freight Hub design, in light of additional mitigations and offsets that might need to be incorporated.
- 11.11 This is addressed from a planning perspective in Ms Bell's evidence.³⁷ Detailed assessment against the NPS-FM will be undertaken at the regional consenting stage. In my opinion, this is an appropriate approach as it will allow for the mitigation and offset package to be reassessed and refined as the design progresses.
- 11.12 Utilisation of the effects management hierarchy will ensure that there are no residual adverse effects on significant ecological features. My conclusions regarding Low and Very Low overall levels of effect³⁸ reflects the approach adopted by the EIANZ (2018) guidelines and does not consider statutory requirements placed on significant or specified ecological features. Policies contained within the NPS-FM require effects to be managed on stream and wetland environments irrespective of their value and the subsequent overall level of ecological effect. It is my expectation any potential stream loss and/or wetland loss will be appropriately considered under the NPS-FM and NES-F during the regional consenting stage, with the effects management hierarchy being used to ensure a no net loss scenario is achieved. I recommend any such measures will be developed in consultation with HRC and local iwi.
- 11.13 I agree with Ms Quinn that no construction works should take place on Site until further ecological surveys are undertaken. Ms Bell addresses the appropriateness of this being included as a condition on the designation.³⁹

³⁶ Section 42A Report, dated 18 June 2021, at paragraph 501.

³⁷ Evidence of Karen Bell, dated 9 July 2021.

³⁸ AEVE, Section 7.3, page 32. **Correction:** the second paragraph under section 7.3 (page 32) of the AEVEs92 should state that "The replacement of equal or better value/quality open-channel aquatic habitats is required..." rather than implying it is not required.

³⁹ Evidence of Karen Bell, dated 9 July 2021.

However, irrespective of a condition imposed on the designation, this would be expected as an industry standard for the regional consenting phase. I address the details of the proposed condition in paragraphs 11.26 and 11.27 below.

Effects on fish passage

- 11.14 The Section 42A Report raises concerns in relation to the ability of the Freight Hub to accommodate the stream simulation approach within the design as well as the provision of fish passage for some species.
- 11.15 I have discussed the benefits of the stream simulation approach to fish passage in section 8, paragraphs 8.9 to 8.13 above. My assessment that the Freight Hub will have a positive effect on fish passage assumes this approach will be adopted and is achievable (which I consider it is). If this cannot be achieved and fish passage is not provided for, the AEE assesses the culvert installation(s) will have an overall low level of effect. In my opinion, the Freight Hub presents an opportunity to improve fish passage through the Site.
- 11.16 The flat topography allows for low-gradient pipes to be installed which should limit the potential for velocity barriers to occur meaning the length of darkness is likely to be the only potential barrier to fish migration / passage. While extensive length of darkness may be an issue to inanga, I consider it unlikely that inanga are present in high numbers throughout the stream system given the distance to sea and the presence of existing impediments. Therefore, I believe it unlikely the preclusion of passage for inanga does not present an adverse shift from the existing baseline. These details will be further confirmed at the regional consenting phase.

Effects on water quality

- 11.17 The efficacy of sediment controls and the potential effects on instream values has been questioned in the Section 42A Report.⁴⁰ The efficacy of sediment retention controls, and the treatment of other discharge types, is addressed by Mr Leahy and I understand will be subjected to New Zealand industry standards captured within an Erosion and Sediment Control Plan.⁴¹ This matter will receive full and proper scrutiny and solutions at the regional consenting stage, as it is a resolvable issue.
- 11.18 With regards to potential instream effects, I disagree with Ms Quinn's summation that sediment inputs into the streams surrounding the Freight Hub

⁴⁰ Section 42A Report, dated 18 June 2021, at paragraphs 526 to 529.

⁴¹ Evidence of Allan Leahy, dated 9 July 2021, at section 7.

may "fundamentally alter the in-stream conditions"⁴² due to the prevailing soft-bottom conditions. The streams surveyed already have thick layers of deposited fine sediment (<2 mm). The assessment of the macroinvertebrate community confirms the benthic community is dominated by highly tolerant taxa that are adapted to soft-bottom conditions and can readily recover from new sediment inputs. An adverse sediment input would require, in my opinion, the stream to be completely buried.

- 11.19 The prevailing agricultural land-use means it is highly likely turbidity levels within the watercourses become readily elevated during and following rainfall events. The instream aquatic fauna is likely to be adapted to these conditions (as supported by the macroinvertebrate sampling) and given any sediment pulses entering the stream(s) from the Freight Hub are, assuming best-practice sediment control measures are in place, likely to occur during adverse weather events, I consider that the assessment of effects contained within the AEVE are correct.

Loss of terrestrial habitat

- 11.20 Ms Quinn suggests the magnitude of effect from vegetation clearance is likely moderate rather than low, given 177.7 ha will be potentially affected, however, Ms Quinn does not provide any justification for this assertion.⁴³
- 11.21 The EIANZ (2018) guidelines consider a low magnitude of effect to be a:⁴⁴

Minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible, but underlying character, composition and/or attributes of the existing baseline condition will be similar to pre-development circumstances/patters; AND/Or Having a minor effect on the known population or range of the element/feature.

- 11.22 I consider Low is an appropriate representation of the magnitude of effect in the sub-catchment of the Freight Hub at the landscape scale. In any case a negligible terrestrial vegetation value set against either a low or moderate magnitude of effect both result in a very low level of effect.
- 11.23 I agree with Ms Quinn in that the management plans recommended in the AEVE are adopted as conditions of consent. These management plans will ensure terrestrial fauna are adequately managed and protected.

⁴² Section 42A Technical Evidence - Ecology, dated 18 June 2021, at paragraph 83.

⁴³ Section 42A Report Technical Evidence – Ecology, dated 18 June 2021, section 6.3.

⁴⁴ EIANZ (2018) Guidelines, table 8, page 83.

Pest control

- 11.24 I agree with Ms Quinn's recommendation to include pest control along planted corridors and within and around the Site.

Response to recommended conditions

- 11.25 The Section 42A Report Planning Evidence: Effects and Recommendations Summary Table: KiwiRail Freight Hub Notice of Requirement ("**Summary Table**") includes a series of recommended conditions or amendments to conditions. I address the condition requirements contained within Section 9.6 Ecology section of the Summary Table. Where I do not comment on a particular recommended condition it is because I either agree with its proposition or I believe any commentary is outside my area of expertise (ie cultural monitoring) so it would be inappropriate to comment on its applicability or otherwise.

Condition requirement 76

- 11.26 The Council's proposed condition requirement 76 recommends a condition that requires detailed ecological investigations are undertaken before any works commence. It also recommends a minimum suite of surveys, including surveys to establish stream classification, extent, and values, erosion prone locations, wetland extent and values, vegetation extent and values, lizard presence and values, bat presence, bird presence and values, and freshwater fauna presence.
- 11.27 I consider that many of the recommended surveys are appropriate for incorporating into the regional consenting phase. While I recommended a number of changes to the surveys proposed, I do not address these further as they will be covered at the regional consent phase.

Condition requirement 77

- 11.28 This requires water quality parameters to be measured and assessed, including as related to urban and industrial run-off, suspended and deposited sediment, and the presence of periphyton and macrophytes.
- 11.29 I assume this also relates to baseline monitoring prior to construction works which, if this is the case, I believe would be useful for informing regional consenting assessments.

Condition requirement 85

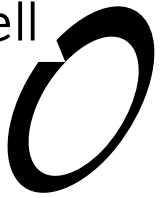
- 11.30 I consider that a suitably qualified and experienced ecologist would suffice to ensure appropriate protocols are determined and established (and enacted). I do not see the need for the ecologist to be 'independent' in part because it is unclear what this would mean, and the protocol(s) will be reviewed and confirmed by Council(s).

Jeremy Garrett-Walker

9 July 2021

APPENDIX 1 - JUNE 2021 POTENTIAL WETLAND STATUS SURVEY REPORT

Boffa Miskell



KiwiRail Hub Wetland Identification Surveys:



Assessment of potential wetland status

Prepared for KiwiRail

7 July 2021



Document Quality Assurance

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1.0 Summary

KiwiRail, in exploring the potential for a new rail “hub” at Bunnythorpe, has recently gained access to some areas of the Designation Extent not previously visited. Previous site wide ecological survey and assessment that informed Technical Report F – Assessment of Ecological Values and Effects, and KiwiRail’s section 92 response dated 15 February (“**First Section 92 Response**”) had to make assumptions on the potential presence of natural wetland and stream condition in these areas of land based on aerial photography and what could be seen from the roads. Now, with access, the ecologists on the project (Boffa Miskell) have been able to undertake on-site survey to test for potential natural wetlands. This report is the June 2021 results of on-site investigations and testing areas for natural wetlands following the recent NPS Freshwater Management (2020) guidance on the Gore & O’Rilley property (sites 3-6), on the Tipene property (site 9), and in three other areas (see Figure 1).

On the basis of the onsite investigations, none of the 9 sites are natural wetlands.



Figure 1. Potential natural wetlands visited June 2021.

2.0 Background

The area in and around south Bunnythorpe is farmland (dairying mostly but other livestock types also, as well as cropping) and has been so for at least 100 years. Prior to the arrival of local Iwi (some 183 years previously) and European settlement (post 1870) the Manawatū plains was extensive forests, and some of that forest was wetland or swamp forest. Esler (1978)¹ describes the botany (and soils) and indicates the proposed KiwiRail hub sits mostly on a raised terrace above an expanse area of river flats westward beginning around the Mangaone Stream. The area was historically fully forested, mostly in podocarp (totara, matai, kahikatea, rimu). The soils of the river flats are predominantly alluvium although variable, but in the very low-lying areas peaty soils exist. The soils of the terraces are formed from loess and are characterised by greyish brown loamy topsoil with yellowish brown mottling. The soils are typically acidic and poorly drained, with some gravelly and better draining areas.

The area in question holds no recognised “priority” wetlands (Lambie 2008²) probably due to the extent of landscape modification but also in relation to the better drained terraces and only very small non-peaty wetland potential along stream margins.

3.0 Approach to assessing wetlands – Natural wetland Identification

3.1 National Policy Statement for Freshwater Management 2020 and the National Environmental Standards for Freshwater

Irrespective of the OnePlan’s position on, and definitions of, wetland (see Schedule F), the National Policy Statement for Freshwater Management 2020 (“**NPS-FM**”) at subpart 3 provides a definition of natural wetland.

This is anything that meets the RMA definition of wetland, but excludes the following:

- a) a wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing or former natural wetland); or
- b) a geothermal wetland; or
- c) any area of improved pasture that, at the commencement date, is dominated by (that is more than 50% of) exotic pasture species and is subject to temporary rain derived water pooling

¹ Esler A.E. 1978. Botany of the Manawatu District. New Zealand. Botany Division of the D.S.I.R. Keating Government Printer, Wellington, NZ.

² Lambie, J. 2008. Revised Regional Wetland Inventory and Prioritisation. June 2008, Horizons Regional Council, Report No. 2008/EXT/892.

Where a natural wetland exists the NPS-FM then directs regional councils to include the following policy in their regional plans: *"The loss of extent of natural inland wetlands is avoided, their values are protected, and their restoration is promoted"*.

There is currently some debate as to how to interpret "loss of extent" and at what scale that is to apply. As the Policy reads there appears to be the direction to avoid loss of natural wetland irrespective of potential mitigation and offset options and outcomes, unless the activity is necessary for the construction of "specified infrastructure" under (b).

We understand that KiwiRail complies with the definition of "specified infrastructure". This means that construction of the Freight Hub is regulated by clause 45 of the National Environmental Standards for Freshwater ("**NES-F**"). 'Construction of specified infrastructure' and vegetation clearance or earthworks in a wetland or within 10m set back of a wetland is a discretionary activity which allows the effects management hierarchy to be applied.

The effects management hierarchy specified at 3.21(1) of the NPS-FM follows:

- a) *adverse effects are avoided where practicable; and*
- b) *where adverse effects cannot be avoided, they are minimised where practicable; and*
- c) *where adverse effects cannot be minimised, they are remedied where practicable; and*
- d) *where more than minor residual adverse effects cannot be avoided, minimised, or remedied, aquatic offsetting is provided where possible; and*
- e) *if aquatic offsetting of more than minor residual adverse effects is not possible, aquatic compensation is provided; and*
- f) *if aquatic compensation is not appropriate, the activity itself is avoided*

3.2 Determining if a natural wetland is present

There is a stepped process of identification. The diagram in Figure 2 below outlines the process.

The approach, following the NPS-FM guidance, involves a rapid visual examination to determine obvious wetland species dominance at a feature-scale. Then, where a feature is not obvious, i.e. there appears a mixture of wetland and upland plant species and some indicative abiotic features, a plot-based vegetation survey is undertaken to determine the dominant vegetation type (if any) following the Clarkson (2013) method.

Where the dominant vegetation cover is made of more than 50% pasture species then under the improved pasture exception (section 3 of the NPS-FM), the feature is not defined as a natural wetland. Where the area in question is not pasture, it must be dominated by wetland affiliated vegetation (i.e. vegetation species that are adapted to varying levels of wetted soils/conditions; see Clarkson et al. (2021) for a list of species and their assigned wetland-affiliated code).

Where it is not dominated by facultative wetland³ or obligative wetland⁴ species, or where the dominance is of facultative wetland species alone, soil cores should be taken to determine if hydric soils are present (in accordance with Fraser et al. (2018)). If hydric soils are present, then a prevalence index is calculated. A prevalence index below 2.5 indicates a wetland, an index

³ Facultative Wetland (FACW): occurs usually in wetlands (67–99%)

⁴ Obligate (OBL): occurs almost always in wetlands (estimated probability >99% in wetlands)

between 2.5 and 3.5 is ambiguous (Clarkson, 2013) and anything over 3.5 is not a natural wetland.

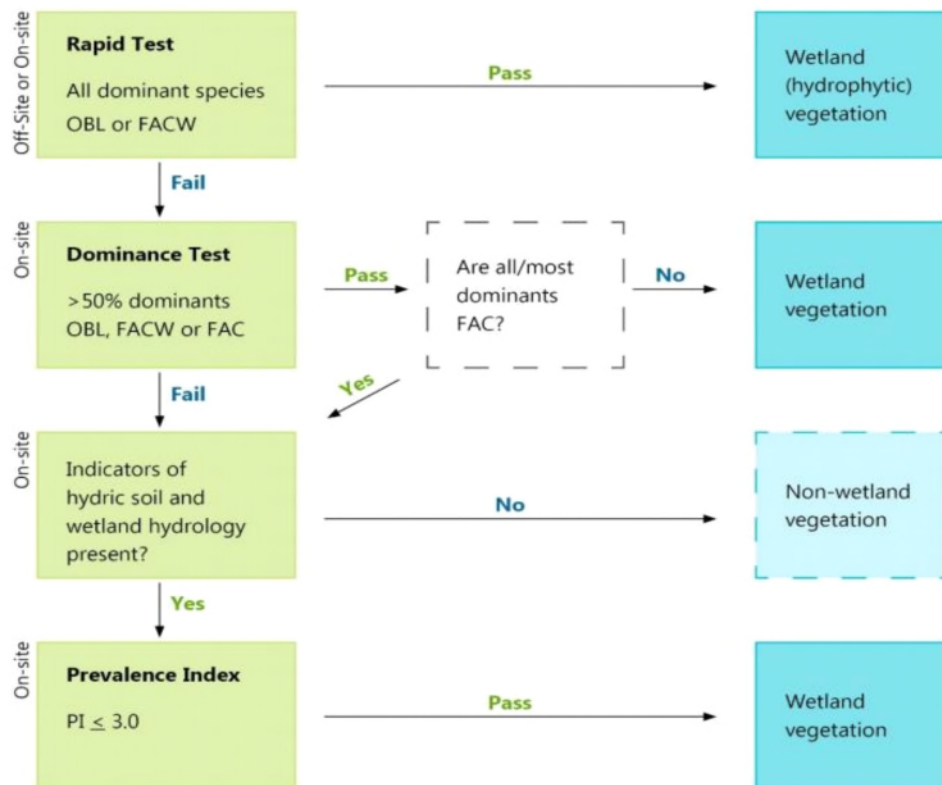


Figure 2. Outline of wetland identification process

This process works well when a feature being tested is obvious due to landform and hydrology, has a larger size, and is intact. Where small and fragmented potential wetlands sit inside a wider obviously non-wetland landform and condition (such as pasture with dimpled topography) this method becomes less reliable. There is no current guide to a minimum wetland size that should be considered appropriate and viable. The NPS-FM directs regional councils with identifying features 0.05 ha and above but does allow smaller features to be identified should the councils feel that is appropriate based on wetland assemblage type. There is also no ability to reflect on the species composition (if it is representative and “natural”) and richness, or whether the area in question was historically forest and not wetland (to some degree the soil tests assist with this). It also makes no determination in favour of indigenous over exotic wetland.

Often the issue on productive land is determining at what point clusters of rush/sedge in pasture are no longer classified as pasture but instead represent wetland. The NPS-FM guidance method (the Wetland delineation method (MfE 2021⁵) often referred to as the “Clarkson method”- with a focus on plot data) does not easily differentiate this. The approach taken in this

⁵ Ministry for the Environment. 2020. Wetland delineation protocols. Wellington: Ministry for the Environment.

assessment has been to consider what proportion the sedge or rush clusters contribute to the larger “pasture” area, following in effect, the dominance measure of the plots.

In this way we approached each area of potential wetland first visually, then by placing plots in wetland potential areas and then by determining the expanse of “wetland species” clusters of the wider area (in this case, paddocks). Photographs are included of the areas tested.

3.1 Schedule F of the One Plan

In addition to consideration of the NPS-FM, Schedule F of the One Plan is relevant because it identifies habitats and vegetation types that are significant in terms of section 6c of the RMA. There are three elements of the Horizons one plan schedule F (indigenous biological diversity) that have some potential to be represented on the property: Riparian margins and seepage and spring wetlands or marsh and swamp.

Riparian margins are described as : Any indigenous* or exotic woody vegetation* that is forest*, treeland*, scrub*, or shrubland*, that is not classified elsewhere in Schedule F as rare* or threatened*, within 20 m landwards from the top of the river^ bank adjacent to a site* identified in Schedule B as being a Site of Significance – Aquatic.

There is no woody vegetation generally within 20m along any of the streams in the surveyed area. A small area of the Willow and a small area of the southern macrocarpa hedge on the Tipene property was deemed insufficient to be “riparian” to the stream

Seepage and spring wetland are described as indigenous* sedgeland*, cushionfield*, mossfield* or scrub*, occur on slopes, and are fed by groundwater. A spring wetland^ occurs at the point that an underground stream emerges at a point source.

There were no such features on any of the nine surveyed areas.

Swamp and marsh wetlands are described as supporting indigenous* sedges, rushes, reeds, flaxland*, tall herbs, herbfield*, shrubs*, scrub* and forest*. These vegetation communities and features are not present on any of the nine sites surveyed.

4.0 Results

4.1 Clevely Line pond and draining gully – Sites 1 & 2

The observed potential wetland areas are shown on Figure 3. To the east of the road is the dammed pond to the west the drainage gully that on site does not clearly reach the Mangaone River.



Figure 3. Clevely line potential wetland features.

On the eastern side of Clevely Line there is a feature that is a formed pond with a planted edge of native vegetation (Figure 4). There are wetland plants along the edge which we consider are most likely to have been planted (*Carex secta* etc) and a loose shrubland. There is little sign of any naturally formed in-pond macrophyte community aside from Azolla (*A. rubra*) and duck weed (*Lemna disperma*). This pond evidently falls with the constructed wetland caveat in the NPS - FM (hydrology formed by earthworks and vegetation largely planted).

Downstream on the other side of Clevely Line is a shallow gully which is likely the remnant of the gully in which the pond sits and which the road (in part) has caused to pond. The shallow gully was damp and contained, at the time of survey, shallow water through which vegetation was abundant (Figure 5).

In terms of the potential to be a natural wetland, the vegetation cover was 70% Yorkshire fog (*Holcus lanatus*), especially throughout the low point. On the drier edges the fog is joined by small amounts of creeping buttercup (*Ranunculus repens*), occasional soft rush (*Juncus effusus*), selfheal (*Prunella vulgaris*), water pepper (*Persicaria hydropiper*), as well as clovers, dandelion, rye grass, and dock. The vegetation is 100% exotic and while mostly wetland facultative plants are present the cover is over 70% pasture. The feature is wet pasture and it is not considered a natural wetland feature.



Figure 4. Formed pond on the eastern side of Clevely Line



Figure 5. West Clevely road shallow gully.

4.2 The Gore & O'Reilly property – Sites 3 to 6

Off Te Ngaio Road is the Gore and O'Reilly property on which aerial photography suggests that there may be 2 (or more) wetland features. The potential features are labelled sites 3-6 on Figure 6.

In examining the features we investigated sites 3 and 4 in some detail (those considered to have the most potential) and viewed site 6 from a distance.



Figure 6. The potential wetland features cited on the Gore and O'Reilly property of Te Ngaio road.

4.2.1.1 Site 3

At site 3 the feature was walked, and two wetland plots were undertaken along with a general species list and photographs. The history of the feature was discussed with the landowners.

In essence the gully feature, which is part of an old flood plan of the adjacent stream, has been in part caused to be very wet by the Te Ngaio Road impounding water flow off this land. The feature encountered was a narrow linear depression with pooling water during winter (the landowners indicated the whole feature dries during summer months) and scattered *Juncus* with pasture giving way to wetland species prior to small areas of open water (Figure 7).

Looking horizontally there appears to be substantive *Juncus* coverage (*J. edgariae* in the main but also *J. effusus* and *J. sarophorus*) but as can be seen on Figure 7 the large *Juncus* tussocks are actually well spaced and concentrate to a degree in the lowest point.

Adjacent to the open water (which was a cloudy turbid colour at survey (the feature is open to stock)) is a small range of non-pasture plants adapted to wet conditions: duckweed, creeping buttercup, primrose willow (*Ludwigia peploides*), and jointed rush (Figure 8).



Figure 7. Site 3 looking from south to north at the wettest point



Figure 8. Site 3 plan view of the vegetation community adjacent to the open water area.

Two Clarkson 2x2m vegetation plots were undertaken, one adjacent to the open water on the east side in a wet area where pasture appeared prevalent.

The results of the southern plot are: 20% cocksfoot, 15% Yorkshire fog, creeping buttercup 24%, *J. sarophorus* 2%, creeping bent (1%), *Ludwigia peploides* (2%) and bare ground / dead grass 30%. By eye the area most resembles wet pasture with some wetland non pasture species.

The outcome of the southern plot data is a prevalence score of 3.2 (ie. tending towards a non-wetland feature with more upland species than wetland species) and a dominance of pasture species (35 of 65% (i.e. 53% pasture cover)) which implies the area is not a natural wetland.

The northern plot was: *Juncus articulatus* (20%), *J. sarophorus* (10%), *J. edgariae* (5%), creeping buttercup (5%), clover 1%, Yorkshire fog (5%), plantain (1%), dandelion (1%), willow herb (*Epilobium ciliatum*) (1%), selfheal (1%) and creeping bent (10%).

This visually appears more like a natural wetland than pasture, but exotic and induced. There is substantive pasture species present and adjacent. The prevalence indices is 2.0 which indicates this area is a natural wetland by the Clarkson (2013) method.

In summer the property owners noted that the feature is much drier and pasture likely becomes more prominent but that will also depend on the stock rate in this area. We understand that in the height of summer this area is surface dry.

The soil cores (Figure 9) show a gleyed silt with minor sandy lower components. It is wet and sticky and while there is ferric oxidation (red bits) it is not classically mottled. Following the Manaaki Whenua guide (Fraser et al., 2018), the soils may be hydric, but it is not clearly hydric (Chroma 3, colour value 6) for over 50% of core but it is uncertain if there is a deeper pan restricting the water or if it is the consequence of the road bunding.



Figure 9. Soil core 30-45 cm deep. A gleyed soil with silts and minor sandy component at the bottom and some ferric oxidation but not mottled.

The area in question inspected is around 300 m² (0.03 ha) with the area suggested as natural wetland by the Clarkson (2013) plot method is 55 m² (0.0055 ha) (Figure 10). This is a very small area of common, largely exotic and wetland opportunistic species, rather than a representative wetland assemblage. We consider, reflecting on the NPS guidance to Council to map wetlands 0.05 ha and larger, that while the very central wettest area of this small gully feature meets the prevalence indices(2), it is an induced condition amongst a wider wet pasture landscape with no causative wetland attributes other than the roading having caused impoundment of water.



Figure 10. Natural wetland area within the wider wet paddock (pale colour is open water)

To assist with the assessment, we have looked at the area via Google Earth aerial photography over time (Figure 11). What we see is a varied level of wet indicative vegetation from near none to more expansive Juncus and water. There was a very dry period between 2012 and 2018 where there appears to have been no ponding.



Figure 11. Google earth imagery of Site 3, showing apparent changes in condition since 2005. Dates are (reading left to right, top to bottom): March 2005, November 2012, November 2015, March 2017, March 2018, March 2019, February 2021

4.2.1.2 Conclusion

While a small area meets the wetland test for natural wetland (55m²), it is a technical qualification and the feature is too small and not of an assemblage one expects for a natural

wetland type. It is largely exotic opportunistic species reflecting the hydrology but also the pasture condition is a product of farming and water impoundment. Therefore, ecologically, we do not consider the feature as a whole to be natural wetland.

4.2.2 The Spring – Site 4

Further west and over a low hill line is a small valley between two low hill spurs that run west to east towards Stoney Creek Road. A range of planted trees (predominantly ti kouka and harakeke) are present but scattered. Blackberry is thick and covers the head of the small valley. At first sight the feature appears a well vegetated spring (Figure 12). The hydrology is certainly “wetland” inducing however, the vegetation is less indicative.

Predominantly the cover adjacent and throughout the valley floor is tall fescue (*Lolium arundinaceum* subsp. *Arundinaceum*). Tall fescue was introduced for agriculture in 1871⁶ and should be considered a pasture species. Lower in the valley the fescue is complimented by creeping buttercup. In one area we found a small growth of watercress (*Nasturtium officinale*) and several *Eleocharis acuta*, but otherwise few natives and limited actual wetland species.

The vegetation plot next to the central open water edge (avoiding the tall fescue) recorded 20% creeping butter cup, 2% dock, 5% *J. effusus*, 1% water pepper (*Persicaria hydropiper*), 5% Starwort (*Callitriche petriei*), 5% Yorkshire fog, 25% creeping bent, 2% watercress, 30% mud.

The second plot (away lateral from the open water) was dominated by Tall fescue: Tall fescue 85%, creeping butter cup 10%, dock 1%, Yorkshire fog 5%.

The third plot (Figure 13) was lower in the valley towards the stream. Those results were: 5% creeping butter cup, 1% *J. effusus*, 1% clover, 5% creeping bent, 80% rye grass, 5% Yorkshire fog.

The first plot is dominated by creeping bent and creeping butter cup, the second by tall fescue and the third by rye grass. The plots are dominated by pasture grasses (and pasture weeds for that matter). In all cases across the spring discharge and open water edge, pasture grasses reflect the historic modifications from farming and are considered improved pasture. Therefore site 4 is not a “natural wetland” as defined in the NPS-FM.

⁶ [Lolium arundinaceum subsp. arundinaceum • New Zealand Plant Conservation Network \(nzpcn.org.nz\)](https://nzpcn.org.nz/)



Figure 12. Looking west up valley through open water and edges of grass



Figure 13. The third plot, towards the stream showing a dominance of pasture

4.2.3 Site 5

The farm track west of the stream passes through a north-south gully (Figure 14) on the way up to the higher land where the piggery is. The low point of the gully has a damp bottom in which Yorkshire fog and creeping butter cup are dominant with occasional *J. effusus* with a small amount of creeping bent. This is damp pasture not a natural wetland.



Figure 14. Site 5 lower gully draining north.

4.2.4 Lower paddock – Site 6

On the south side to Te Ngaio Road, in the lower paddocks there is an observable collection of *Juncus* amongst the pasture (Figure 15). It is however, simply scattered rushes in pasture. The pasture has an appreciable amount of creeping buttercup due to its low lying and damp condition, but the area is entirely grazed and has been in dairy production use for at least 20 years. The area is not natural wetland.



Figure 15. View of Site 6 from the road edge.

4.3 Tipene Property – Site 9

Adjacent to the Gore & O'Rilley property to the east is the Tipene property. We accessed this property on the 25 June 2021. Prior to the field investigation we were gifted with a history from a local Kaumatua and both he and Ms Tipene shared their knowledge of the area, the stream and the wetland.

A path was walked zig zagging across the entire area from north to south. Plots were undertaken in the locations shown in Figure 16 (stars). Two stream channel features were observed, the central path of the main stream, into which an island has been constructed. North, and only loosely connected to the main stream, is a small channel that passes south and west under a small willow/macropcarpa stand and on to the neighbouring property. The main stem has limited aquatic macrophyte, small amounts of edge duckweed and *Glyceria*, and a few submerge curly pondweed (*Potamogeton crispus*). The non-flowing northern channel had a full cover of its approximately 1m wide water surface of a 50/50 mix of *Azolla* and duckweed.

Generally the wider area is dominated by large patches of black berry and outside of those, tall fescue, Yorkshire fog and creeping buttercup (stock or grazing animals have not been present for some time). The grasses are accompanied by wild carrot (*Daucus carota*), mallow (*Malva* sp.) and pea (*Lathyrus* sp.) along with smaller amounts of dock, hemlock, a few umbrella sedge,

an *Eleocharis acuta* (side drain), and several cabbage trees along with three poplar and a small willow treeland. One raised small area had 10 *Juncus edgariae* tussocks scattered in Yorkshire fog.



Figure 16. Tipene property, showing plots (stars) and other features

The following photographs illustrate the areas.

Figure 17 is an example (at plot 1) of the true right stream side. While blackberry occupies the slightly more raised land, Yorkshire fog, creeping butter cup and pea dominant the terrace.

A soil core taken from this area at 15-30cm deep (Figure 18) is damp grey-brown without mottling and has an ambivalent Chroma and colour value that looks to be at the edge of the hydric values of Fraser et al. (2018).



Figure 17. Establishing plot 1 on the true right lower stream terrace



Figure 18 Soil core sample from the 15-30 cm depth adjacent to plot 1.

Central-north the land rises a little more and the cover is predominantly Yorkshire fog and creeping butter cup and 10 scattered *Juncus edgariae* (Figure 19).



Figure 19. Central north pasture with scattered rushes.

Central to the feature at large is a branch of Stream System 1 (Figure 20). As the photo shows the area is largely exotic pasture and weeds which have become rank from the lack of grazers but few wetland species and no natural wetland.

The northern intermittent channel was not flowing and has a full cover of the water surface in Azolla and duckweed (Figure 21). It had raised banks and no lower terrace or wetland indicative plant cover. One poplar can be seen on the true left and willow in the background.



Figure 20. Central stream



Figure 21. Northern intermittent channel with duckweed and Azolla cover

Along the fenced eastern boundary with the Gore/O'Riley property the intermittent channel connects to the main stem via a swale type structure which had very little standing water at survey (Figure 22). In this drain was the only *Eleocharis* (*E. acuta*) found on site as well as several exotic *Cyperus* (ergotis) but in the main the cover is Yorkshire fog, creeping buttercup and pea.

Centrally and at the northern boundary is a small willow tree stand (Figure 23). While there are some karamu and poroporo the ground tier is montbretia (*Crocossima crocosiiflora*), wild carrot, cleavers (*Galium aparine*), and grasses.



Figure 22. Eastern "swale" drain connecting the main stream to the northern intermittent channel



Figure 23. Under the northern willow tree stand.

Just west of the willow is a depression in which it can be seen old *Persicaria* was present and the lower edges are dominated by creeping bent with occasional *J. effusus* (Figure 24). This is the nearest vegetation type to wetland we found but again it is pasture dominated.

Near the western property boundary (Figure 25) the stream has a lower true right terrace on which there is a single *J. effusus*, with greater creeping butter cup presence, as well as creeping bent with scattered *Juncus spp.*. This area however, is otherwise unremarkable in terms of wetland presence.

The area on the true left side of the stream and south of the house rises gently towards the road from the stream (Figure 26). Two harakeke (planted) are present. Aside from central areas of blackberry we located one spring and its path to the stream which was the wettest area present. While the wider area is of tall fescue and Yorkshire fog and the weeds already mentioned, the spring "drain" included more creeping butter cup and occasional *Juncus*. Again no natural wetland was evident. The southern most corner of the property (on the road reserve) includes harakeke and several mature Ngaio. Watercress is present here at the road side drain but not in the property.

Plot summary data are provided in Table 1 and shows Plot 5 complies with the NPS-FM caveat regarding improved pasture or pasture dominance but only where it is accepted that the pasture weed creeping butter cup, is a normal part of improved wet pasture communities in New Zealand. Creeping butter cup is a common exotic weed of damp pastures and is addressed in publications related to control options published by CRI and Massey University and therefore it cannot be seen as the cause of considering a feature a natural (and so valuable) wetland. The prevalence indices for this plot is 2.9 which lies on the ambiguous area of the Clarkson method. In considering Schedule F (Indigenous biodiversity) of the Horizons lone plan we do not consider that this community meets the outcome sought by either the One Plan or the NPS-FM in terms of "natural wetland".



Figure 24. Small low basin west of willow.



Figure 25. Western most stream edges.



Figure 26. True left (southern) side of the property

Table 1. Summary of the plot data collected from the Tipene property, including the relative percentage cover contributions of each species.

Plot vegetation	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5
Blackberry	1				
Pea	20	1			10
Yorkshire fog	60	75	70	3	15
Creeping bent	2			90	20
dock	2				1
Creeping butter cup	15	25	10	2	50
Montbretia			10		
Wild carrot			5		
Jerusalem cherry			10		
Tall fescue			10		
J. effusus				5	
Glyceria					5
Cover total	100	101	115	100	101
% pasture species	>60	>75	>70	>90	35%

4.3.1 Stoney Creek – Site 7

This is a small gully between roading near the centre of Bunnythorpe (Figure 27). It is the same stream as on the Tipene property. The stream is covered by Goats rue and is reasonably incised and does not give rise to low wet terraces (Figure 28). Off the intersection and hard site to the north west a swale drops down the slope to the creek (Figure 29). This swale holds the only wetland vegetation of any concentration. The wider gully is Yorkshire fog, creeping butter cup, dock, wild carrot, creeping bent and scattered rushes.

The swale with the greater concentration of wetland species is predominantly creeping bent and creeping butter cup with occasional *Juncus effusus* and *Cyperus ergotis*, *Juncus articulatus* and pea. It is very narrow and exotic dominated. We do not consider the feature to be anything other than an induced wet area that has some exotic wetland tolerant plant species. It is not a natural wetland.



Figure 27. Site 7, Stoney Creek gully at Bunnythorpe.



Figure 28. Stoney Creek with a riparian cover of Goats rue and the wider pasture gully floor.



Figure 29. lower swale

4.3.2 Foodstuffs – Site 8

Near the end of Roberts Line and the intersection with Railway Road there is a paddock over the road from the Foodstuff warehouse (Figure 30). The paddock along its south-western running boundary is the area of paddock waste (an edge into which soils and other deposits have been created). There are two low drain like structures that run from the north at the east end and from railway road from the east and drain out the south-western boundary near the centre of the Foodstuffs building. This “drain” is wetter than the paddock in general and contains tall fescue, Paspalum and Yorkshire fog.



Figure 30. Foodstuff paddock

In old vehicle tracks the pasture (Figure 31) gives way to dominant creeping butter cup and yarrow more than grasses. Along the boundary fence it is rank pasture. A narrow area in-between (2m wide) lies a depression in which tall fescue, cocks foot, Yorkshire fog, creeping bent, *Cyperus ergotis*, yarrow, clovers, creeping butter cup, selfheal, plantain, dock, dandelion, and *Juncus* species (*effusus*, *articulatus* and *sarophorus*).

One plot was undertaken – *J. articulatus* 20%, *J. sarophorus* 10%, *J. effusus* 5%, creeping butter cup 5%, plantain 2%, dandelion, 1%, dock 5%, clover 5%, Yorkshire fog 5%, selfheal 2%, creeping bent 10%, rye 5%, Cleavers 5%, unidentified grass sp. 5%, bare ground 15%.

Although there are a number of facultative wetland species and the greatest cover was (of one plot) *Juncus* sp. at 35%, the majority of vegetation belongs to pasture and pasture associated weeds. This long linear narrow feature is clearly induced and in context part of a pastoral farming / cropping landscape. Site 8 is not a natural wetland.



Figure 31 Foodstuff paddock with depressed vehicle tracks.

5.0 Conclusions

Site 1 & 2 (Clevely Rd)

The features present are a human made pond with plantings of wetland species and with self-colonised water surface species. A created wetland and not a natural wetland. The gully down stream is pasture species dominated and not a natural wetland.

Sites 3-6 (Gore & Riley)

Site 3 has one small area (55m²) that by plot registered as wetland, but given the species (largely exotic and opportunistic) and wider context and size, as well as the seasonal changes we do not consider this feature to be an actual functional natural wetland.

Site 4 is more complex with hydrology that can support a wetland, but the vegetation does not qualify the feature as natural wetland, being largely exotic pasture species and creeping butter cup dominated.

Sites 5 and 6 are clearly pasture dominated with scattered rushes. They are not natural wetlands.

Site 7 (Stone Creek)

The only potential feature is the stormwater swale/drain. While there are some wetland species the thin linear drainage feature is still dominated by pasture species and it is not a natural wetland.

Site 8 (Foodstuffs)

A “waste” area with a lower linear narrow zone in which increased *Juncus perseveres* and some deep-set tire tracks in which creeping butter cup dominants. In both cases the context is pasture, despite pasture species (without consideration of the pasture weeds) not being dominant and nether should be considered a natural wetland.

Site 9 (Tipene)

Despite the Stoney Creek and a smaller side channel and the flood plains are not so wet as to allow a more permeant wetland condition to prevail. The majority of the area is pasture and weeds and there was only one very small basin which could possibly be construed as natural wetland however, it is dominated by wet pasture except where there was “open” water. There are no natural wetlands on the property.

Appendix 1: Wetland species in pasture not often considered “pasture”

Creeping Butter cup

Creeping butter cup - *Ranunculus repens*. This butter cup is exotic naturalised in 1869 probably from Europe (also found in North Africa and south-west Asia). Its habitat is recorded as “wet pasture, waster places, ditches and roadsides”.

It is viewed here and in Australia as a weed of damp pastures (Popay et al 2010⁷). Massey university on line weed data base⁸ publication attribute its spread and persistence to tolerance of wide soil and wet conditions and is commonly found in the herbicide strips of orchards and in waste places because it is tolerant of amitrole, simazine and low rates of glyphosate. Its growth form makes it tolerant of mowing too.

It is also ignored by cattle and so becomes more represented in pastures where it is not managed.

Creeping bent

Agrostis stolonifera

Naturalised to NZ in 1878 from Europe, temperate Asia, and N. America.

The plant conservation network (Champion and Hofsta, NIWA) record the reason for its introduction as pasture.

Edgar and Forde record the history of *Agrostis* genus in NZ. Journal of botany 1991, vol 29. Pgs 139-161. They state that it is widely distributed throughout New Zealand but is of minor importance agriculturally (Levy, 19^{2A}). It is restricted in habitat requirement to damp ground in rather sparse open vegetation and does not compete successfully with stronger growing grasses which form a dense cover. L.

Creeping bent is used as a specialist turf grass.

⁷ Popay, I; Champion, P; James, T. 2010. An illustrated guide to common weeds of New Zealand (3rd edition). NZ plant protection society.

⁸ [Creeping Buttercup - Massey University](#)

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

**STATEMENT OF EVIDENCE OF ALLAN LEAHY
ON BEHALF OF KIWIRAIL HOLDINGS LIMITED**

STORMWATER AND FLOODING

1. SUMMARY

- 1.1 The proposed location for the Freight Hub ("**Site**") is part of the wider Mangaone Stream catchment of around 15,000Ha. The Mangaone Stream continues past the Site through western suburbs of Palmerston North, to join the Manawatu River to the city's southwest. The watercourses draining the northern and central catchments (comprising approximately 1,200Ha) through the Site also include floodplains predominantly associated with the flooding of the Mangaone Stream.
- 1.2 My stormwater and flooding assessment has been carried out at a reasonably high level for the purposes of identifying and providing preliminary sizing of the key components of the Freight Hub required to provide for appropriate stormwater management systems. I expect that the stormwater management system for the Freight Hub will comprise on-site or at source treatment and low impact design systems, stormwater detention ponds, stormwater treatment wetlands, culverts, on-site pipework and a naturalised stream channel. In coming to this conclusion, I have considered a range of mitigation options for the Site. Further work on the design of the system will be undertaken during the detailed design and regional consenting phases.
- 1.3 Once operational, the Freight Hub has the potential to result in a number of potential positive effects from a stormwater perspective. In my opinion, there is adequate room within the Site to manage and mitigate the potential adverse

effects relating to both construction and ongoing operation of the Freight Hub. As set out in the proposed conditions for the Freight Hub attached as Appendix 1 to Ms Bell's evidence ("**Proposed Conditions**"), the following outcomes are proposed in the conditions:

- (a) a Stormwater Management Report which will demonstrate, through further hydraulic modelling that the size and design of the stormwater detention ponds are appropriate to manage the effects; and
- (b) a Stormwater Management and Maintenance Plan which will demonstrate how the hydraulic neutrality and quality of the stormwater discharges will be managed for the Site, including the ongoing operation and maintenance of the stormwater management system.

1.4 I endorse these conditions with respect to stormwater management.

2. INTRODUCTION

2.1 My name is Allan Thomas Leahy. I am Principal - Growth Planning at Auckland Council Healthy Waters. At the time of lodgement of the NoR I was Principal Technical Specialist Stormwater Management at Stantec New Zealand. Since leaving Stantec in May 2021, I have continued my involvement in this project as a contractor to Stantec.

2.2 I hold the qualifications of Bachelor of Engineering (Civil) from the University of Auckland and am a Fellow of Engineering New Zealand (EngNZ), formerly known as the Institution of Professional Engineers New Zealand. I am a member of both the Institute of Public Works Engineering Australasia and WaterNZ. I was a founding committee member for the Stormwater Special Interest Group of WaterNZ. I was named Stormwater Professional of the Year in 2017. I have been a judge for the Association of Consulting and Engineering New Zealand (ACE New Zealand) Awards for over 20 years and am an honorary life member of ACE New Zealand.

Experience

2.3 I have over 30 years of engineering experience predominantly in stormwater management and design. I specialise in planning for, investigating, modelling, managing, designing and consenting systems to manage and mitigate the effects of stormwater discharges from various types of land use change and activities.

- 2.4 Between 1993 and 2008 I established and led a specialist stormwater management team within a large land development consultancy firm focussing on finding solutions to stormwater quantity and quality issues associated with land development projects, structure planning and rezoning proposals.
- 2.5 In 2009 I started work with MWH (now Stantec) as Principal Technical Specialist Stormwater Management. In my role at Stantec I advised on stormwater related projects (or parts of projects) throughout New Zealand.
- 2.6 In 2014 I developed and started delivering 1-day training courses on Stormwater Management and Design for EngNZ. I now deliver two stormwater related training courses (Stormwater Management and Design – An Introduction and The Principles of Stormwater Treatment) at multiple locations around New Zealand annually. I have trained over 1,000 people through these courses. In 2019 I became the lead New Zealand trainer for the American Water Environment Federation's Green Infrastructure Certification Programme – this is a five-day course on Green Infrastructure targeted at those who construct and maintain the infrastructure. The course is licensed in New Zealand by Auckland Council and delivered through WSP's Environmental Training Centre.
- 2.7 I have worked with a number of New Zealand Councils, from Northland to Southland on their stormwater infrastructure planning, consenting and implementation. I have also worked on the stormwater aspects of projects for private industry, developers and Waka Kotahi New Zealand Transport Agency. I have also worked for both district and regional councils in providing technical review and reporting on stormwater consent applications or NoRs for large and small infrastructure projects, including floodways, major transport projects, land development or zoning projects or individual house developments.

Involvement in the Freight Hub

- 2.8 My involvement in the Freight Hub project started in April 2020, once the Site had been selected.
- 2.9 In my role as stormwater and flooding specialist for this NoR, I have had input into the Freight Hub concept plan layout, the Site required for stormwater management and mitigation, and the formation of the upgraded northern stream channel. This involved working with KiwiRail and other technical specialists in the design of the Freight Hub. I have also discussed the stormwater and flooding context of the Freight Hub with Horizons Regional Council ("**HRC**") and Palmerston North City Council ("**PNCC**") officers and

local residents as part of the community engagement that KiwiRail has undertaken.

- 2.10 I prepared the Stormwater and Flooding Assessment that was appended to the Assessment of Environmental Effects ("**AEE**") for the Freight Hub. I also provided input to KiwiRail's Section 92 response dated 15 February 2021 ("**First Section 92 Response**"). The First Section 92 response included responding to questions relating to the interrelationship between stormwater discharges and ecology, the construction of culverts, the potential for improvements to the existing systems and the Proposed Conditions.

Code of conduct

- 2.11 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

- 3.1 This statement of evidence will:
- (a) provide an overview of the methodology used and the key conclusions of the Stormwater and Flooding Assessment;
 - (b) respond to the submissions received that relate to the stormwater and flooding effects on the environment; and
 - (c) address relevant matters raised in the Council's Section 42A Report ("**Section 42A Report**").

4. METHODS OF ASSESSMENT

- 4.1 The methodology used for the Stormwater and Flooding Assessment is set out in Section 3 of that document. The key assumptions used in the assessment and agreed with PNCC and HRC officers for that purpose were included in Appendix A to the Stormwater and Flooding Assessment.

- 4.2 In summary, the assessment considered the following:
- (a) the passage of stormwater flows through the Site from upstream catchments;
 - (b) the potential impact on downstream flood levels caused by the Freight Hub;
 - (c) the consideration of contaminants being transported from the Site through the stormwater system and affecting downstream environments and the mitigation of these effects;
 - (d) the potential loss of streams and the mitigation options for this loss as well as options considering fish passage; and
 - (e) the consideration for the onsite implementation of LID solutions. This includes practices such as volume reduction, onsite reuse, treatment, retention or enhancement of streams and options for the selection of neutral building materials for the Freight Hub.
- 4.3 The assessment has been carried out at a reasonably high level, to identify the Site and key components of the Freight Hub required to provide for appropriate stormwater management systems. Further work on the design of the system will be undertaken during the detailed design and regional consenting phases.
- 4.4 The assessment was carried out using a range of existing information sources including:
- (a) topographical information for the contributing catchments;
 - (b) flood models provided by the PNCC and HRC depicting the 200-year flood plain and flood depths for the Mangaone Stream;
 - (c) existing asset information in particular for the KiwiRail and road culverts in the vicinity of the Site;
 - (d) topographic information for the site and surrounds from a 2013 LIDAR survey;
 - (e) subdivision requirements for a recent subdivision downstream of the Site;

- (f) consideration of the One Plan and PNCC District Plan requirements for stormwater, in particular within the North East Industrial Zone ("NEIZ"); and
- (g) the results of discussion with PNCC and HRC officers and local residents following site visits.

4.5 The assessment has included carrying out hydrological calculations using conservative assumptions, to enable an estimate to be made of the quantities (both volumes and peak flow rates) of stormwater runoff from the Freight Hub to be managed. This estimate has formed the basis of the detention pond and treatment wetland footprints required to mitigate the stormwater effects of the Freight Hub.

4.6 Existing flood levels provided by PNCC and HRC for the 200-year event were used to confirm that the Site was free of flooding and to determine the minimum elevations on which to set the Site and the detention and treatment ponds.

4.7 Opportunities to provide for enhanced ecological outcomes were also considered. In particular the opportunity to create or improve watercourses from an aesthetic and ecological perspective were considered in conjunction with KiwiRail, the landscape and ecological specialists.

5. EXISTING ENVIRONMENT

5.1 The existing environment has been considered in terms of:

- (a) catchment context;
- (b) land use and zoning;
- (c) flood plains; and
- (d) ecology.

5.2 Further detail on the existing environment is contained within section 4 of the Stormwater and Flooding Assessment and is summarised below.

Catchment context

5.3 The Site is contained within a topographically flat to rolling catchment with predominantly rural pastoral land use. Approximately 1200ha of catchments drain through the Site from the east of Railway Road and the North Island Main

Trunk ("**NIMT**"), draining to the Mangaone Stream to the west of the Site. This comprises three areas:

- (a) the Northern Catchment drains just over 600Ha of predominantly farmland, immediately south and east of Bunnythorpe through the northern part of the Site via a series of culverts under Railway Road and the NIMT;
- (b) the Central Catchment drains just under 600Ha of predominately farmland through an open channel through the central part of the Site via a culvert under Railway Road and the NIMT; and
- (c) the Southern Catchment drains in the order of 20Ha of localised catchment immediately east of the NIMT and north of Roberts Line near the southern extent of the Site, also via culverts under Railway Road and the NIMT.

5.4 The relevant catchments are identified in Figure 2 in the Stormwater and Flooding Assessment. I have included a copy of this Figure in **Appendix 1** to this evidence.

5.5 As can be seen in Figure 2, the site is a part of the wider Mangaone Stream catchment of around 15,000Ha to the most downstream discharge from the Site. The Mangaone Stream continues past the Site through western suburbs of Palmerston North, to join the Manawatu River to the city's southwest.

Land use and zoning

5.6 As set out in Ms Bell's evidence, the Site is zoned as a mixture of rural and industrial land.¹ The industrial land is contained within the NEIZ and comprises approximately the southern third of the Site.

5.7 From a stormwater perspective the NEIZ includes provisions for the implementation of detention, retention, hydraulic neutrality, treatment and low impact design. All of these tools are expected to be used as part of the Freight Hub development and land has been allowed for them.

5.8 The One Plan has provisions around natural hazard management and in particular flood management. These provisions include the avoidance of adverse effects where possible and for developments to have no more than minor effects on adjacent properties as well as on the effectiveness of existing flood mitigation measures.

¹ Evidence of Karen Bell, dated 9 July 2021.

- 5.9 Figure 3 in the Stormwater and Flooding Assessment shows the Freight Hub site overlain on the PNCC District Plan map of the area, the extent of the NEIZ zoning and the extent of the plotted 200 year flood plains.

Flood plains

- 5.10 The watercourses draining the northern and central catchments (as shown within **Appendix A**) through the Site also include flood plains predominantly associated with the flooding of the Mangaone Stream.
- 5.11 These flood plains have been modelled and are shown on both the PNCC District Plan Maps and the HRC flood hazard maps. Some of these flood plains and associated channels will be filled as part of the Freight Hub development.
- 5.12 Figure 4 of the Stormwater and Flooding Assessment shows the modelled flood extents, based on PNCC data.

Ecology

- 5.13 The ecological values of water courses within the Site are outlined in the evidence of Mr Garrett-Walker. In summary, the watercourses through the Site are described as being highly modified and having low ecological value.²

6. ASSESSMENT OF POTENTIAL STORMWATER EFFECTS

- 6.1 The potential stormwater effects are discussed in Section 5 of the Stormwater and Flooding Assessment and are summarised below. These effects will be assessed in detail at the regional consenting phase of the Freight Hub, but it was necessary for me to consider them at a high level for the purposes of determining the concept design of the stormwater management system, to inform the area of the Site required to manage stormwater effects.

Positive effects

Operational

- 6.2 Once operational, the Freight Hub is expected to provide a number of potential positive effects from a stormwater perspective, including:

² Evidence of Jeremy Garrett-Walker, dated 9 July 2021, at Section 7.

- (a) reduced upstream flooding, due to specific culvert design and the ability to incorporate measures including allowances for climate change in the new culvert design;
- (b) the opportunity to provide improved fish passage, if needed, and an improved stream environment (further detail on this is outlined in the evidence of Mr Garrett-Walker);³
- (c) reduced sediment loads with the change from rural to urban land use and the construction of stormwater treatment systems (which remove sediment);
- (d) the on-site collection and use (often called reuse) of captured stormwater. The capture and reuse of stormwater is a low impact design technique which helps runoff mimic natural runoff processes. In these systems regular rainfalls are captured in a tank and used for other purposes on-site (washing, watering, sanitary systems) and thus they do not runoff. This technique mimics natural processes where the regular rainfalls do not contribute to direct runoff (as they are lost to interception, evapotranspiration and infiltration processes). This technique will also reduce the load on the public water supply; and
- (e) the scale of the development provides the opportunity to include a comprehensively planned and implemented mitigation package, that can provide better outcomes than a series of small developments will usually provide.

Adverse effects

- 6.3 The potential adverse effects from the Site without mitigation are described below.

Construction

- 6.4 Without mitigation, there would be potential stormwater related adverse effects during construction of the Freight Hub, including the generation of high levels of silt in the runoff from exposed earth when it rains.

³

Evidence of Jeremy Garrett-Walker, dated 9 July 2021, at Section 8.

Operational

6.5 Potential adverse effects of the operation of the Freight Hub include:

- (a) increased upstream flooding risk for example from constrained flows through poorly designed culverts or blockage of culverts, combined with raised overland flow paths;
- (b) loss of stream systems through the Site due to piping or culverting of watercourses;
- (c) loss of fish passage due to piping or culverting activities;
- (d) increased downstream flooding levels, extents or durations due to:
 - (i) the more rapid passage of flows from upstream;
 - (ii) the loss of flood plain storage by filling the Site; or
 - (iii) increased runoff from impervious or compacted surfaces;
- (e) stormwater quality deterioration through the change in land use, including:
 - (i) chemical changes as a result of spills and runoff from potentially high contaminant generating areas (such as refuelling areas, the log yard or chemical storage areas) and the risk of elevated contaminants from non-stabilised building materials;
 - (ii) in certain conditions another contaminant can be the increase in temperature of stormwater runoff from urban surfaces; and
- (f) erosion of downstream systems caused by greater runoff in regular rainfall events as a consequence of increased runoff from impervious or compacted surfaces.

7. MEASURES TO ADDRESS EFFECTS

7.1 Measures to avoid, remedy or mitigate the potential adverse effects are summarised below. As with the identification of potential effects in section 6 above, these measures are considered in terms of the construction and operation activities of the Freight Hub.

Construction

- 7.2 The management of silt generation from construction activities is regulated by the HRC and I understand will require regional consents. Management of these activities is well understood and there are a range of standard methods available to mitigate these effects. These include (but are not limited to):
- (a) limiting areas of exposed earthworks by staging both earthworks and vegetation clearance;
 - (b) limiting the duration of exposure of erodible surfaces, including by stabilising exposed areas as soon as possible after earthworks are complete;
 - (c) carrying out the works during drier seasons;
 - (d) limiting slopes in exposed areas;
 - (e) diverting clean water around exposed areas; and
 - (f) the construction and maintenance of sedimentation facilities (including the use of coagulants to enhance sedimentation).
- 7.3 The implementation of appropriate sediment and erosion control practices will be the subject of more detailed investigations and design. The HRC in their Erosion and Sediment Control Guidelines refer specifically to their having adopted the Greater Wellington Regional Council *Erosion and Sediment Control Guidelines for the Wellington Region* as a minimum standard for designing an erosion and sediment control plan for earthworks sites. This will be a key process to be carried out as part of the regional consenting stages of the Freight Hub.
- 7.4 I am comfortable that given the nature of the landforms and the size of the Site that there is adequate room within the Site to allow for staged erosion and sediment control measures, to integrate with the staged Site development.

Operational

- 7.5 As outlined above, detailed stormwater management design will be assessed at the regional consenting phase. For the purposes of this NoR, the focus of my assessment has been in ensuring that the land required for the Freight Hub is able to accommodate a stormwater management system that can manage the potential effects of the Freight Hub.

7.6 I have considered the types of activities to be carried out as part of the stormwater mitigation for the Site and carried out high level calculations of the likely size and therefore footprint to be required for mitigation to be implemented. This assessment has formed the basis of the stormwater mitigation expected to be required for the Freight Hub. In order to manage the adverse effects described above, I expect the stormwater management system to comprise the following components:

- (a) on-site or at source treatment systems;
- (b) stormwater detention ponds;
- (c) stormwater treatment wetlands;
- (d) culverts;
- (e) on-site pipework; and
- (f) a naturalised stream channel.

On-site or at source treatment systems

7.7 As part of my assessment, I have considered the likely impacts of on-site or at source management systems on the land requirements for the designation.

7.8 On-site systems will be used to both provide treatment to high risk areas and also to allow for hydrological mitigation to minimise impacts of the changed hydrology. These are likely to range from building material controls, to proprietary devices that would usually be located underground, to tanks (either above or below ground to store water), to bespoke treatment systems such as swales or raingardens, possibly with associated infiltration systems. Each of these devices will be located and associated with particular water sources, such as the log yard, refuelling areas, chemical or hazardous substance storage areas, workshops, carparks and potentially on-site roads,

7.9 Given the dispersed nature of the particular sites of interest as shown on the proposed Site layout, I consider that there are ample opportunities to locate at-source treatment systems within the operational areas of the Site and further land is not required nor can sensibly be detailed for them at this time.

7.10 The detail of these systems will be a detailed design matter and will be the subject of the Stormwater Management and Monitoring Plan described in the Proposed Conditions.

Stormwater detention ponds

- 7.11 The key (and most commonly used) mitigation for managing flooding effects is by the provision for the storage of excess stormwater runoff to reduce peak flow rates from a site so that there is no increase in flooding downstream. This effect will need to be carefully considered in conjunction with hydraulic modelling of the catchment to confirm the final sizing of the storage and outflow controls at the detailed design stage.
- 7.12 The need for this work has been anticipated in the Proposed Conditions which set out the modelling requirement and the items to be included within a proposed Stormwater Management Report.
- 7.13 For the purposes of the designation, simplified sizing (as detailed in the Stormwater and Flooding Technical Assessment, Appendix A "Flooding and Stormwater Impacts Assessment Assumptions") of the stormwater detention ponds has been carried out using a technique which is known to slightly over-estimate detention volumes. The technique involves a simple subtraction of runoff hydrograph volumes of the predevelopment hydrograph from the post-development hydrograph and by allowing for the storage of that volume difference.
- 7.14 This approximate approach was agreed with PNCC (including Mr Arseneau and Ms Baugham) prior to lodgement of the NoR.
- 7.15 For the NoR I considered a range of options for the siting of detention storage facilities including upstream, downstream, within the Site and both on-line on the streams and off-line away from the main streams. Based on my analysis of the options I concluded that location of detention storage downstream of the Site and out of the existing flood plains (off-line) was the most appropriate options as it:
- (a) did not require further land to be taken on upstream properties;
 - (b) would not increase flood levels on upstream properties, as on-line storage option would;
 - (c) allowed the unimpeded passage of flows (and fish) from upstream properties, by not siting dams on the main streams from them;
 - (d) enabled incorporation of the detention storage with the terminal stormwater treatment device for the Site; and

- (e) enabled discharges from the Site to closely approximate existing discharges and discharge points, thus not creating effects where they would not previously have been experienced.

- 7.16 The detention pond arrangement I settled on included three ponds one within the operational area of the Site (southern site) and two (northern and central ponds) outside the operational areas west of the realigned Railway Road. Each of these will discharge to systems at the locations that the natural discharges from the Site would discharge to. In the on-site pipework section below I describe how I have confirmed the elevations for these devices is achievable.
- 7.17 The detention ponds will be the subject of detailed design and modelling at the design and consenting stages, as allowed for in the Stormwater Management Report in the Proposed Conditions.

Stormwater treatment Wetlands

- 7.18 The terminal treatment facilities allowed for within the designation are three wetlands, one within and two outside of the operational areas of the Freight Hub. These are shown in Figure 1 below which has been adopted from the Landscape Plan included in Ms Rimmer's evidence. These wetlands will receive general site discharges and discharges from the at source treatment devices.

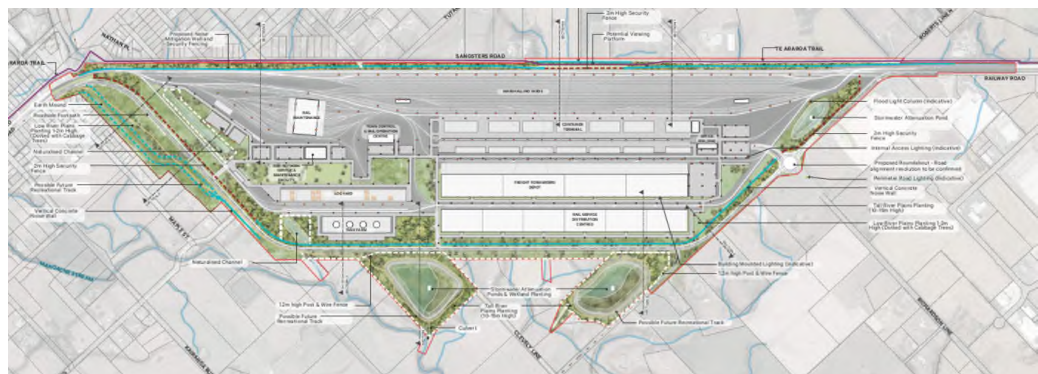


Figure 1: Snip from Landscape Plan showing location of stormwater detention ponds and treatment wetlands.

- 7.19 These devices have been sized using Auckland Council's GD01 sizing methodology, using conservative assumptions. I have also made an allowance in their footprint for the required maintenance access.

- 7.20 The stormwater treatment wetlands have been sized using Auckland Council's GD01 sizing methodology.⁴ The Freight Hub will require a total stormwater treatment footprint of approximately 41,000m², including allowance for treating the Perimeter Road and the realigned NIMT. This footprint is based on the conservative assumption that the contributing catchment is 100% impermeable, with a ponding depth coefficient of 0.5 and no allowance for reduction of the Permanent Water Volume from the provision of live storage. The footprint area available to locate the wetlands in the base of the detention pond systems is approximately 97,000m².
- 7.21 Each wetland fits within the base areas of an associated detention pond within the Site. In this location each wetland will take both the low flow (piped discharges) and the high flows (overland flows) from the Site. The detailing of these devices will be the subject of detailed design and regional consenting processes.
- 7.22 As outlined in the Proposed Conditions a Stormwater Management and Maintenance Plan is proposed, which is intended to demonstrate how the quality of stormwater discharges will be managed for the Site. I expect it will also form the basis for subsequent regional consenting.

Culverts

- 7.23 Mitigation of upstream flooding will require the sizing of culverts to take anticipated flows, including an allowance for climate change and the risk of blockage from debris in order to manage upstream flooding effects. I have not carried out analysis for the sizing of culverts at this time, as they will be contained within the Site and will need to convey flows from each of the existing culverts that currently discharge across the NIMT and Railway Road and through the Site.
- 7.24 Design of culverts through the Site will be subject to analysis in both the Stormwater Management Report and the Stormwater Management and Monitoring Plan detailed in the Proposed Conditions. In the case of the culverts, I expect the design and reporting will incorporate integration with ecological issues and expert inputs, especially around fish passage.

⁴ Auckland Council Guideline Document 2017/001, Stormwater Management Devices in the Auckland Region.

On-site Pipework

- 7.25 The ability to drain such a large flat site was a particular concern of mine. In conjunction with considering the location levels and sizing of the wetlands and detention areas, I had to also consider the ability for the Site to drain to these devices and also for the devices to drain to the receiving systems.
- 7.26 To satisfy myself of this I considered the level of the Site (RL50), the longest drainage paths on the site, pipe cover, minimum pipe gradients and ponding levels in the detention ponds. I also considered the 0.5%AEP flood level to ensure that the proposed system could drain out. I am satisfied having done this analysis that a solution is possible for this Site with the arrangement proposed.
- 7.27 The detailed design will be the subject of both the Stormwater Management Report and the Stormwater Management and Monitoring Plans included in the Proposed Conditions.

Naturalised Stream Channel

- 7.28 It is not possible from a stormwater engineering perspective, considering the operational imperatives of the Site, to avoid piping or culverting some of the streams within the Site. However, the opportunity exists to enhance the stream that drains the northern catchment through the Site. It is proposed to enhance this stream by keeping it open, creating a meandering baseflow channel and wetlands thus creating a more natural stream. The detailed design will be developed through the design and consenting process.
- 7.29 Design of the naturalised northern stream will be subject to analyses in both the Stormwater Management Report and the Stormwater Management and Monitoring Plan detailed in the Proposed Conditions. I am comfortable that enhancement, integrated with ecological and landscape inputs will result in a good stormwater outcome.

8. RESPONSE TO SUBMISSIONS

- 8.1 I have reviewed relevant submissions relating to the stormwater and flooding effects of the Freight Hub.⁵

⁵ Sonia and Neal Watson (1), Bruce and Alison Hill (4), Central Economic Development Agency (12), Nga Kaitiaki O Ngati Kauwhata Incorporated (14), Kevin and Yvonne Stafford (18), Horizons Regional Council (20), Ian Alexander Shaw (21), Fiona Hurley (22), Mike Tate (23), Peter Hurly (26), Helen S Thompson (36), Ian Harvey (37), Logan Harvey (38), PMB Landco Ltd, Brian Green Properties Ltd and Commbuild Property Ltd (45), Aaron Fox (47), Ngati Turanga (49), Joanne Kathrine Whittle (59), Peter Gore and

- 8.2 I respond to these submissions by way of themes rather than individual submissions and I have summarised my understanding of the themes from my review of the submissions listed above.

Downstream and upstream flooding concerns

- 8.3 A number of submissions have expressed concern either in detail or in high level terms about an increase in local flooding or upstream or downstream flooding as a consequence of the Freight Hub.
- 8.4 This was a matter which I considered carefully through my technical analysis for the designation to ensure that adequate land was set aside. As discussed above, increased flooding is a potential effect. However, appropriate measures have been allowed for to manage this potential effect. These are discussed in section 7 of my evidence above and include:
- (a) the provision of culverts through the site to convey flows;
 - (b) the provision for detention ponding to reduce flows from the Site;
 - (c) the siting of the detention ponds off-line of the stream systems; and
 - (d) the requirement for flooding effects to be addressed in detail by way of the Stormwater Management Report.
- 8.5 A number of the submissions discussed flooding, pipe capacities and sewer overflows in locations around the Site. While this level of detail will be addressed more fully at the design and regional consenting stage, I have considered the issues identified at a high level and conclude that:
- (a) The Freight Hub is not expected to contribute to sewer overflows at the Kairanga Bunnythorpe Road. The stormwater runoff from the Site will not be discharging to the sanitary sewer system. It will discharge to the existing stream systems via the Site stormwater management system.
 - (b) The Freight Hub is not expected to contribute to local flooding at the Kairanga Bunnythorpe Road. At this stage I do not consider that local flooding experienced at this location will be affected by the

Dale O'Reilly (61), Mary Anne Chapman (62), Central New Zealand Distribution Hub Stakeholder Group (63), Te Ao Turoa Environmental Centre / Bestcare Whakapai Hauora Charitable Trust (69), Renee Louise Thomas-Crowther (70), Danelle O'Keeffe and Duane Butts (72), William John Bent (77), Dianne M C Tipene (81), June Irene Hurley (86), Max Houghton (89), Te Runanga O Raukawa (96).

Freight Hub, as this area has a higher elevation than the Site and is not on the routes for stormwater discharge from it.

- (c) The Freight Hub is not expected to contribute to local flooding such as in the area around the Roberts Line / Railway Road intersection, and may assist to alleviate existing ponding in this area through standard drainage design and operation practices such as culverting. I am aware that there is already shallow ponding (flooding) occurring at this location and consider that the proposed works provide an opportunity to alleviate that ponding.

- 8.6 Local flooding of the Site will be managed by providing positive drainage (that is a piped drainage system) on the Site and by the elevation of the Site. I have considered the potential drainage line lengths and discharge points and am satisfied that drainage of the Site (including the need to treat and detain runoff) prior to discharge can be addressed and finalised through detailed design, as provided for in the Stormwater Management and Monitoring Plan required to be prepared under the Proposed Conditions. The Site elevation is well above the calculated 200-year flood level supplied in the current modelling of the Mangaone catchment, I am satisfied that the Site will not be subject to flooding from the Mangaone Stream flood levels.
- 8.7 Downstream flooding from the loss of flood plain storage or the increased impervious surfaces was considered in my assessment as discussed above. This has led to the three detention ponding areas that are proposed within the Site. Prior to allowing discharges from the Site to the existing stream systems (including the Mangaone Stream), flowrates from the Site will be reduced by the on-site detention so that there is no negative effect on downstream flood levels. The final design details of outlet configuration, detention volumes and depth and confirmation that flooding effects are managed will need to be confirmed at the design and consenting stage. I envisage that this will include considerable further analysis, not just of the Site but of the effects of runoff following mitigation on the existing downstream floodplains.
- 8.8 The detention areas set aside are outside of the existing flood plains and are sited so they will receive water from the Freight Hub. They are sited at an elevation above the identified 200-year flood plain. Located in this manner they allow for the mitigation of runoff without contributing to flooding effects themselves, because they do not sit within the floodplain areas.
- 8.9 The Proposed Conditions will require the preparation of a Stormwater Management Report to confirm that the stormwater detention ponds are

sufficient to mitigate the potential flooding effects of the Freight Hub. I consider that these conditions will ensure this issue is addressed.

- 8.10 Flooding risk upstream of the Site was also addressed in the Stormwater and Flooding Assessment. A submitter located upstream of the Site (submission 62) has concerns about extra flows into the streams through their properties. Extra flows to these upstream properties will not be able to occur from the Freight Hub as all discharges will be downstream of their property.
- 8.11 The key area of mitigation required, for upstream properties, will be to ensure that flood levels are not increased as a consequence of development of the Freight Hub. As in my evidence above there are two possible causes for an increase in flood levels:
- (a) either backwater from increased downstream flood levels; or
 - (b) restrictions imposed by the culverts through the Freight Hub.
- 8.12 I have discussed the mitigation of downstream flood levels above and consider this effect can be managed by detention to be detailed in the design and consenting phases on the land set aside within the designation. Detaining flood flows to reduce peak discharges from a development site is an accepted and standard method of flood control.
- 8.13 Avoidance of upstream flooding caused by culvert restrictions is also an engineering design issue that will be addressed at the design and regional consenting stages of the Freight Hub. As described in my evidence above, I am satisfied that there are mechanisms available to address this effect such as culvert sizing and management of the entry conditions to minimise any adverse effects. Some culverts will be replacing old existing culverts with culverts that meet the latest design standards, and so upstream flooding risks are expected to be reduced because of this.
- 8.14 Any upstream flooding risks are also matters that will be addressed through detailed stormwater management design which will be provided for as part of the Stormwater Management and Monitoring Plan as outlined in the Proposed Conditions.

Quality of stormwater discharged downstream

- 8.15 Some submitters have raised concerns about the effect of the Freight Hub on the quality of the water discharged from the Site and its effect on the downstream watercourses. I acknowledge that adverse effects on the water

quality of stormwater discharges is a potential effect of the operation of the Freight Hub as detailed in section 5.2.3 of the Stormwater and Flooding Assessment.

- 8.16 This issue will be addressed through the detailed design and consenting stages of development and the Stormwater Management and Monitoring Plan required in the Proposed Conditions. However, for the purposes of the NoR, an assessment has been carried out of opportunities for the management of the quality of the stormwater discharges and the opportunities to address those effects.
- 8.17 A range of measures are expected to be included within the consenting phases and site development to construct the Freight Hub that will address water quality issues. The types of measures to be considered could include:
- (a) the selection of neutral building materials;
 - (b) the provision of on-site low impact design type measures such as swales and raingardens to address hydrological changes and to provide at source treatment;
 - (c) the collection and reuse of water;
 - (d) the identification and isolation of particular contaminant generating sites and either diversion of runoff out of the stormwater stream or specific treatment of that runoff prior to discharge; and
 - (e) the provision of the treatment wetlands as the final treatment prior to discharge of stormwater runoff to the receiving systems.
- 8.18 While the detail of the final treatment solutions will not be finalised until detailed design and regional consenting, I have considered the options and consider that adequate provision exists within the Site to provide a range of treatment and mitigation options. The Proposed Conditions detail a proposed Stormwater Management and Monitoring Plan which has been offered to facilitate the addressing of hydraulic neutrality and water quality issues.

Extent of work to Satisfy Consent Assessment requirements

- 8.19 HRC's submission advises that with respect to the management of Natural Hazards that One Plan Objective 9-1, Policies 9-3 and 9-4 apply to the development of the Freight Hub.

8.20 Objective 9-1 states:

The adverse effects of natural hazard events on people, property, infrastructure and the wellbeing of communities are avoided or mitigated.

8.21 Objective 9-1 has been considered in the Site by allowing for land outside of the operational areas to be included within the designation to enable the reduction in flood flows from the site by detention and attenuation of those flows.

8.22 Policy 9-3 states:

The placement of new critical infrastructure in an area likely to be inundated by a 0.5% AEP (1 in 200 year) flood event (including floodways mapped in Schedule J), or in an area likely to be adversely affected by another type of natural hazard, must be avoided, unless there is satisfactory evidence to show that the critical infrastructure:

- a. will not be adversely affected by floodwaters or another type of natural hazard,
- b. will not cause any adverse effects on the environment in the event of a flood or another type of natural hazard,
- c. is unlikely to cause a significant increase in the scale or intensity of natural hazard events, and
- d. cannot reasonably be located in an alternative location.

8.23 Based on the flood plain information provided the 0.5%AEP flood level in the Mangaone Stream at the upstream end of the Freight Hub site is RL 46.2m. The Site operational level has been set as RL50m, that is 3.8m above the calculated flood level. I am comfortable that based on the flood plain information provided to date that the Site will be well above the calculated flood plain (sub clause a.) and understand that alternative locations (sub clause b. and d.) have been addressed in the evidence of others.

8.24 With respect to sub clause c, this is the purpose of the provision of the detention areas both within the southern end of the Site and outside of the operational site west of the perimeter road.

8.25 My analysis in the Stormwater and Flooding Assessment has given me confidence that enough land has been set aside to achieve the flooding related outcomes and conforms with the agreed methodology to achieve this as set out in Appendix A to the Stormwater and Flooding Assessment. In my view and as stated in the assessment report, I expect further work will need to be

carried out at the detailed design stage to numerically demonstrate that there are no adverse effects on the environment from a flood and that the proposal does not cause a significant increase in flood levels. To show compliance with Policy 9-3, sub clauses b) and c).

- 8.26 The Proposed Conditions relating to stormwater have been offered as a mechanism to demonstrate compliance and I would expect will be carried out in close consultation with both the HRC and PNCC. These conditions require the preparation of a Stormwater Management Report to confirm that the stormwater detention ponds are sufficient to mitigate the potential flooding effects of the Freight Hub.

Master Planning and Compliance with NEIZ Requirements

- 8.27 A number of submitters in support have commented on the positive benefit of the Freight Hub in facilitating comprehensive master planning of the site. I concur with this opportunity from a stormwater perspective.
- 8.28 One submission (PMB LandCo Ltd, Brian Green Properties Ltd and Commbuild Property Ltd) expressed concern that the designation includes 50Ha of the NEIZ and one Watercourse Reserve identified in Map 7.2 of the District Plan. The submitter has expressed concern that this Watercourse Reserve Area in the Structure Plan is proposed to be for detention and supplementary retention of stormwater from the wider area within the Zone including land owned and being developed by the submitters.
- 8.29 I have considered Map 7.2 and identified that the Watercourse Reserve identified by the submitter, is at the upstream end of the central watercourse adjacent to Railway Road. I agree that this Water Course reserve will be lost as part of the Freight Hub development.
- 8.30 The natural catchment to the identified Watercourse Reserve is wholly contained within the designation boundary. I do not consider that any other land within the NEIZ, outside of the proposed designation, would naturally drain to this site and there are other Watercourse Reserves identified on Map 7.2 that would better serve the remaining NEIZ sites. As such I do not agree that an alternative Watercourse Reserve site to service other NEIZ land (outside of the KiwiRail designation) is required as a consequence of the Freight Hub designation.
- 8.31 Notwithstanding my comment above, the plans supporting the designation show two stormwater management sites within the proposed designation to mitigate the effects of the Freight Hub development, particularly in the area

currently included within the northern extent of the NEIZ. The first is a small stormwater management site (detention and treatment wetland) within the KiwiRail operation area near the Roberts Line / Richardson Line intersection. The other is a large stormwater management area further down Roberts Line and west of the proposed Railway road realignment near the Roberts line intersection. These stormwater management areas are proposed for the mitigation of the Freight Hub development only.

9. RESPONSE TO SECTION 42A REPORT

- 9.1 I have reviewed the sections of the Section 42A Report relevant to my evidence, particularly:
- (a) Section 9.8 - Stormwater management and flooding;
 - (b) Technical Evidence Stormwater and Flooding; and
 - (c) Section 9.8 of the planning report companion document table of effects and recommendations.
- 9.2 Overall, the Council Officers have agreed that adequate land has been set aside within the designation for stormwater management and flooding purposes. We do though appear to have some differences in specific areas of implementation which I have commented on below.
- 9.3 The Technical Report on Stormwater states that decommissioning the Freight Hub is not addressed within the operational effects and that it should be.⁶ I am surprised by this suggestion (given the anticipated life of this project) and do not consider that it is necessary to assess the effects of the potential decommissioning the Freight Hub site as part of this process.
- 9.4 In any case, given the dispersed nature of the Site, and with its intended uses, I consider there would be adequate opportunity to incorporate decommissioning if and when the Site is closed.
- 9.5 Both the technical and planning reporting officers recommend that the Stormwater Management Framework ("**SMF**") be included in the Proposed Conditions. I agree that the items included in the SMF (with the exception of a decommissioning plan) are all items that will be required to be included within

⁶ Section 42A Technical Evidence Stormwater and Flooding, dated 18 June 2021 at pages [63], [66], [111] and [112].

resource consent evaluations. This was why I included them in my high level evaluation of stormwater requirements for the NoR.

- 9.6 However, I do not consider that it is appropriate to try to specify all of the detail of what should be included within the consenting process within the Proposed Conditions of this designation as this may restrict inclusion of items that become apparent during these more detailed considerations at the design and consenting stages. Ms Bell has addressed this matter, particularly relating to the appropriateness of the matters to be included in the Proposed Conditions in more detail in her evidence.⁷
- 9.7 The Stormwater and Flooding Technical Evidence seeks that a "*robust erosion assessment to demonstrate the effectiveness of the proposed stormwater system in mitigating*" downstream erosion.⁸ I do not agree that is appropriate. This would be a condition requiring an assessment for which there is as yet no agreed methodology in New Zealand. The assessment would be significantly complicated by the existing on-going channel erosion in the artificially formed and unstable channels that currently exist downstream of the Site. That is, there is no stable channel form, from which to base the assessment. The normally accepted practices to manage the risk of new erosion from a land use change is through either the use of extended detention or volume reduction methods (such as low impact design, infiltration or reuse) to mimic the pre-development hydrological conditions. However, this is a detailed matter that I would certainly expect to be addressed at consenting stage rather than within designation conditions.
- 9.8 Overall, I support the Proposed Conditions attached as Appendix 1 to Ms Bell's evidence.

Allan Leahy

9 July 2021

⁷ Evidence of Karen Bell, dated 9 July 2021.

⁸ Section 42A Technical Evidence Stormwater and Flooding, dated 18 June 2021 at page [112].

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

**STATEMENT OF EVIDENCE OF PAUL HEVELDT
ON BEHALF OF KIWIRAIL HOLDINGS LIMITED**

CONTAMINATED LAND AND AIR QUALITY

1. SUMMARY

- 1.1 A Preliminary Site Investigation ("**PSI**") undertaken within the Freight Hub ("**Site**") has identified at least two HAIL sites. Other areas of contamination are also expected in a rural agricultural environment and may be encountered, including historic sheep dip and burn pad sites. I recommend a Detailed Site Investigation ("**DSI**") be carried out prior to the commencement of construction activities as a means of identifying specific areas of soil contamination.
- 1.2 The site earthworks required for construction of the Freight Hub mean that emissions of dust during construction may be significant, given local wind conditions, and could give rise to nuisance effects and/or may include residual contamination. To manage these effects, I recommend a comprehensive construction dust management plan be prepared as an important tool to manage and minimise dust from construction activities. This will also mean dust contamination of roof rainwater collection systems for domestic supply can be appropriately managed.
- 1.3 The potential operational effects of the Freight Hub include ground contamination by fuels, oils and greases, and emissions to air from general locomotive and rolling stock activities and various commodities transported into, through and onwards from the Freight Hub. The Log Yard is also likely to be a potential source of particulate emissions once it is in operation and requires specific measures to minimise emissions to air. I recommend an operational dust management plan. This is different from but complementary

to the construction dust management plan that is also proposed. Specific compliance requirements for the on-site storage and use of hazardous substances at the Site have also been identified and recommended.

- 1.4 Overall, I am confident that any adverse effects relating to air quality or contamination can be appropriately and reasonably managed, subject to the conditions recommended in Ms Bell's evidence.

2. INTRODUCTION

- 2.1 My full name is Paul Frederick Heveldt. I have the position of National Environmental Science Specialist at Stantec New Zealand.

- 2.2 I hold the qualifications of Bachelor of Science (Hons) and PhD, each in Chemistry and obtained at the University of Canterbury. I was a Teaching Fellow in Chemistry at the University of Canterbury from 1972 to 1974 and a Post-Doctoral Research Fellow at the University of Cambridge, UK from 1975 to 1977.

- 2.3 I am a member of Responsible Care New Zealand (formerly the New Zealand Chemical Industry Council).

Experience

- 2.4 I have been an environmental scientist at Stantec (formerly MWH New Zealand Ltd) for the past 27 years and have had a professional career in the discipline of environmental consulting dating back to 1978. Over that period, I have specialised in air quality and odour assessments, contaminated land, environmental audits and assessments, hazardous substances management and the environmental management of large multi-disciplinary projects in New Zealand and other locations around the world.

- 2.5 Some examples of recent projects include:

- (a) the remediation of extreme arsenic contamination at the Prohibition gold processing site at Waiuta, West Coast;
- (b) Detailed Site Investigations at various Christchurch locations that suffered significant earthquake damage and loss of containment of hazardous substances that resulted in soil contamination;
- (c) the assessment and mitigation of discharges of odour to air from various wastewater treatment plants ("WWTP") in New Zealand, eg

at Carey's Gully (Wellington), Bell Island (Nelson), Rotorua, Mangere, Gisborne, Wainuiomata, Pukete (Hamilton), Tahuna (Dunedin), Moa Point (Wellington), Ruakaka, Greymouth, Feilding and Porirua WWTPs; and

- (d) soil contamination assessments for a wide variety of water and wastewater pipes renewal projects throughout New Zealand.

Involvement in the Freight Hub

2.6 I was engaged by KiwiRail as part of the Stantec project team to provide technical overview and specialist advice in the areas of contaminated land, air quality and dust issues, and the storage and management of hazardous substances at the Freight Hub.

2.7 The Preliminary Site Investigation report that was included within the Assessment of Environmental Effects for the Freight Hub was conducted under my supervision and with my review. I also provided input to KiwiRail's section 92 response on 15 February 2021 ("**First Section 92 Response**"). This included matters relating to:

- (a) the potential for dust generation during operational activities at the Freight Hub and the need for an operational dust management plan to manage these potential effects;
- (b) matters of layout, site design and related mitigation measures to prevent contamination of the receiving environment from operational activities;
- (c) the potential effects on amenity and public health of contaminated dust from rail operations, particularly dust falling on roofs that collect rainwater; and
- (d) the risks posed by bulk storage of hazardous substances, particularly diesel and possibly petrol at the Freight Hub.

2.8 I also provided input to KiwiRail's section 92 response on 24 May 2021 ("**Second Section 92 Response**"). This included matters relating to potential air quality effects from construction and operation of the Freight Hub.

Code of conduct

2.9 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with

it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

3.1 In this statement of evidence I will:

- (a) provide an overview of the methodology and key conclusions of the PSI;
- (b) discuss the effects related to contaminated land and air quality in the construction and operation of the Freight Hub and measures to effectively mitigate these;
- (c) outline the measures recommended to manage contaminated land and air quality effects; and
- (d) respond to the submissions received and matters raised in the Section 42A Report that relate to contamination and air quality effects on the environment from the Freight Hub.

4. METHODS OF ASSESSMENT

Contaminated land methods of assessment

4.1 In order to identify the likelihood of encountering contaminated soil within the proposed location for the Freight Hub, a systematic desktop assessment (known as a PSI) of historical and current land uses was conducted under my overview to narrow down the type, location and possible pathways of potential contaminant exposure with respect to the Freight Hub.

4.2 The PSI assessment relied on the following sources:

- (a) the Palmerston North City Council ("**PNCC**"), Manawatu District Council ("**MDC**"), and Horizons Regional Council ("**HRC**") online GIS maps, HAIL¹ listings and related documents;
- (b) Certificates of Title;

¹ HAIL is the Hazardous Activities and Industries List prepared by the Ministry for the Environment.

- (c) reviews of aerial photography images and a Google Earth imagery review; and
- (d) relevant technical reports prepared as part of this NoR, namely the Geotechnical and Stormwater Assessments.

4.3 The contamination information obtained was also relevant to the Multi Criteria Analysis ("**MCA**") used by KiwiRail to identify the preferred site for the Freight Hub. The relevant considerations for each possible site option with respect to contamination were:

- (a) the presence of known contaminated land;
- (b) the potential difficulty of any necessary remediation; and
- (c) the risks posed by possible discharges to the environment.

4.4 For the reasons I outline below, the preferred site ultimately selected for the Freight Hub has generally low contamination risk, based on these three criteria.

Air quality methods of assessment

4.5 The relevant air quality assessment criteria for emissions to air associated with the construction and operational phases of the Freight Hub have primarily focused on dust arising from construction activities, in accordance with the Ministry for the Environment's "Good Practice Guide for Assessing and Managing Dust"² and on odour, using the principles of the "Good Practice Guide for Assessing and Managing Odour".³

4.6 That guidance identifies that the effects of dust are often assessed and managed qualitatively. A qualitative assessment has therefore been undertaken, having regard to the FIDOL factors of:

- (a) frequency;
- (b) intensity;
- (c) duration;
- (d) offensiveness; and

² Ministry for the Environment. 2016. Good Practice Guide for Assessing and Managing Dust.

³ Ministry for the Environment. 2016. Good Practice Guide for Assessing and Managing Odour.

(e) location of impacts.

- 4.7 The assessment of air quality impacts that I have undertaken has been based on the concept design information that is available at this point in the Freight Hub project's development cycle. As detailed design has not yet been undertaken (which is appropriate at this stage of the process) it has therefore been necessary to take a qualitative approach to the likely impacts on air quality.
- 4.8 To assist with the assessment of air quality effects and the application of the FIDOL factors to the assessment, a wind rose has been derived from meteorological data for Palmerston North to understand the potential risks of emissions from site construction activities impacting on sensitive receptors. I present this in section 5 of my evidence in relation to descriptions of the existing environment.
- 4.9 Particulate concentrations in various size ranges (total respirable dusts, inhalable and respirable particulate, and fine particulate (PM_{2.5})) have all been considered in the assessment of air quality.
- 4.10 Assessment of odour has been considered using the "no offensive or objectionable odour at the property boundary" as the primary yardstick of acceptability, as discussed and endorsed by the "Good Practice Guide for Assessing and Managing Odour in New Zealand".
- 4.11 The two Good Practice Guides I referred to above set out a range of assessment criteria which, if applied rigorously to assessments of dust and odour respectively, will enable the potential adverse environmental outcomes to be identified and understood in each case and appropriate mitigation measures to be applied. If the mitigation measures are effectively scoped and implemented, and if they are broad enough to deal with the full range of anticipated effects, then the net environmental impacts post-mitigation will be reduced to acceptable levels.
- 4.12 The basic assessment criteria for dust include:
- (a) descriptions of both the site and the receiving environment with respect to sensitive receptors, the background air quality, and climatological factors, particularly wind strengths and prevailing directions;

- (b) an outline of the potential activities that will take place at the site and which are relevant to dust emissions, including duration and location within the large site area;
- (c) the potential nature and scale of dust emissions likely to be generated by various activities and/or stages of the project; and
- (d) the predicted levels of potential adverse effects on health and amenity, such as soiling, decreased visibility, loss of amenity and other factors due to the nature and scale of potential dust emissions.

4.13 These criteria have been taken into account, as much as the extent of design information about the Freight Hub has allowed, and the FIDOL factors have been used to determine the significance of each when set against the assessment criteria.

4.14 In the absence of a specific framework for the assessment of air quality impacts of rail projects in New Zealand I have also taken into account, to the extent that it is relevant and applicable, the advice provided in Waka Kotahi NZ Transport Agency's "Guide to assessing air quality impacts from state highway projects"⁴ (the AQI Guide). This covers such matters as background air quality, construction impacts on air quality and operational discharges to air and has allowed the potential impacts of construction dust emissions and exhaust emissions from diesel-powered locomotives (as applicable key examples) to be taken into account and given primacy in the air quality assessment of the Freight Hub's impacts, as I now outline.

4.15 The initial objective of the assessment based on this approach has been to establish whether the relative (qualitatively predicted) air quality impacts of the Freight Hub or the cumulative air quality impacts (ie the project emissions combined with the background expected air quality) are likely to result in air quality criteria being exceeded. Both construction and operational impacts on air quality have been included in this assessment.

4.16 At present, there are no quantitative data available about background air quality parameters and therefore monitoring of particulate concentrations (including PM₁₀, Total Suspended Particulate ("TSP") and deposited dust) should be commenced as soon as practicable to obtain this data, prior to the commencement of site works. The longer the background monitoring period then the more robust will be the data set obtained. For this assessment it is

⁴ NZTA. October 2019. Guide to assessing air quality impacts from state highway projects.

assumed that the background air quality in the vicinity of the Site will be broadly comparable with other semi-rural environments in the lower North Island. The NIWA report "Background PM₁₀ concentrations in NZ"⁵ suggests that a value of 10 µg/m³ as a 24-hour average is reasonable as a yardstick for a location such as the Site near Bunnythorpe. The proposed PM₁₀ monitoring will seek to confirm the validity of this.

4.17 Once the construction phase commences, ongoing monitoring will, over time, establish the typical concentrations of PM₁₀ (in particular), TSP and deposited particulate. For PM₁₀, the 24-hour assessment guideline of the NES of 50 µg/m³ will be the yardstick of acceptability. The trigger level for TSP is considered to be realistically set at 80 µg/m³ as a 24-hour average in this moderately sensitive environment and the trigger level for deposited particulate is set at 4 g/m²/30 days over a 30-day averaging period.

4.18 At present, the risk can be qualitatively assessed based on the approach of the AQI Guide, as follows:

TOPIC	KEY QUESTION
Scale of earthworks	Is total site area > 10,000 m ² – or is the total volume of material to be moved > 100,000 m ³ ?
Proximity to highly sensitive receptors	Are there more than 50 highly sensitive receptors within 200 m?
Anticipated truck and earthmoving equipment movements	Will there be more than 50 outward truck movements per day?

4.19 If the answers to all three questions are "no", then the risk is considered to be low. If more than one answer is "yes", then the risk is likely to be high, although mitigation measures can mean that a moderate risk is indicated.

5. EXISTING ENVIRONMENT

Current and historic land uses

5.1 With respect to current land uses, a review of aerial imagery showed that the Designation Extent predominantly comprises rural land used for cropping and

⁵ NIWA. 2028. Background PM₁₀ concentrations in NZ.

/ or grazing, some of which is consistent with "hobby-type" farming activities. Various dwellings and farm buildings are interspersed within the preferred location, including lifestyle blocks in the northern part.

- 5.2 The land uses surrounding the Freight Hub are also predominantly rural, with some areas of rural residential land. Immediately north of the site is the Bunnythorpe Cemetery, with the Bunnythorpe WWTP to the northwest. The applicable zone boundaries are shown in Figure 1 of my evidence.
- 5.3 The town of Bunnythorpe is located between Feilding and Palmerston North to the north of the Freight Hub and is bisected by the North Island Main Trunk Line ("**NIMT**"). The predominant land use in Bunnythorpe is smaller residential zoned sites occupied by dwellings. The closest residential zoned sites to the Freight Hub are located on Maple Street, Railway Road, Kairanga – Bunnythorpe Road, Stoney Creek Road and on Nathan Place. Other sites in Bunnythorpe are zoned Industrial, Local Business, and Recreation. Local facilities in Bunnythorpe include a tavern, dairy, rugby club, and school.

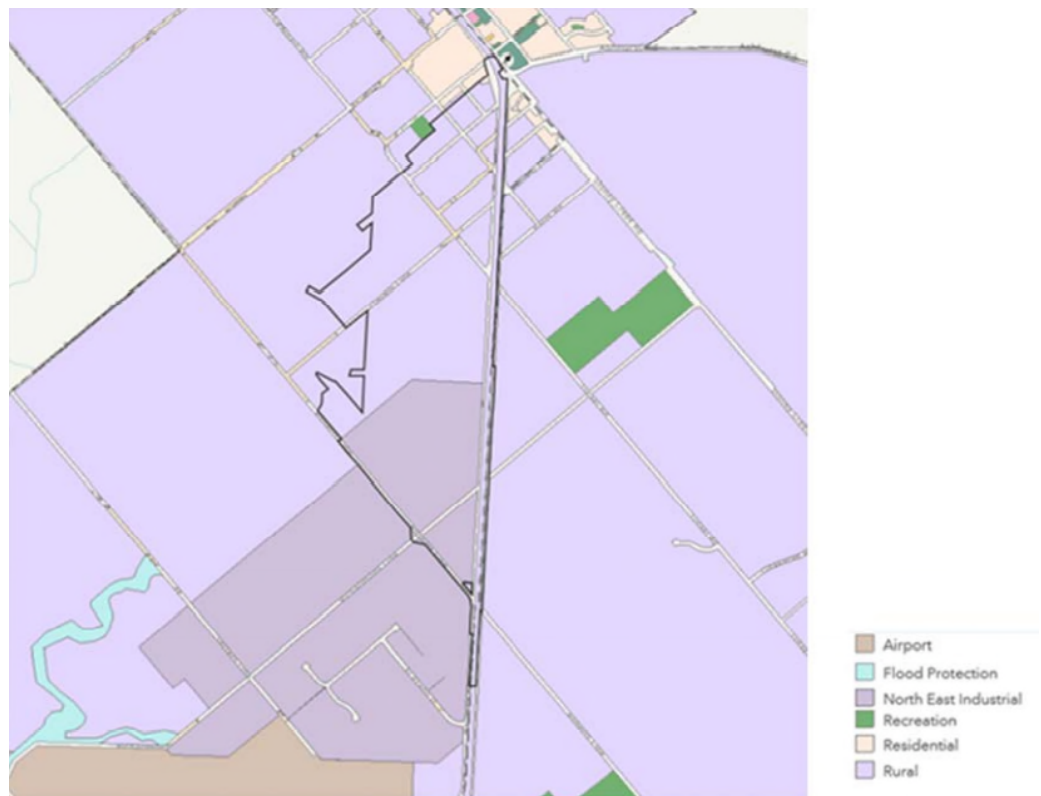


Figure 1: Designation Extent and Surrounding Land Use Zones

- 5.4 Bunnythorpe has had a history of industrial activity as it was the birthplace of the Glaxo company. Upon its closure, the Glaxo site was subsequently used as a manufacturing plant for BMX bikes and currently holds an Industrial zoning. Transpower's main switching point for the lower-central North Island

is located on the north eastern side of Bunnythorpe on a 16ha block of land zoned Rural.

Geology

- 5.5 Soil types in the environs of the Freight Hub location consist of recent alluvium and alluvial terrace deposits. The recent alluvium is geologically very recent and is represented by currently depositing alluvium in the base of gullies and on low lying ground west of the Site. This material is likely to consist of sand silt and clay, possibly with some peat.
- 5.6 The geological conditions at the site and their implications are discussed in greater detail in the evidence of Mr Mott.⁶

Hydrology

- 5.7 Recorded groundwater levels within the area vary and this is likely to reflect short-term conditions in the terrace alluvium deposits and seasonal variations. Pockets of high groundwater (2m below ground level) may represent "perched" or elevated pockets of groundwater. The main groundwater table would be expected to be below this depth, as outlined in the evidence of Mr Mott.⁷
- 5.8 Sixteen existing boreholes are located within the Freight Hub footprint and a further 35 or so boreholes are within approximately 100m of the boundary of the Freight Hub.

Air quality

- 5.9 The Site and surrounding landscape is characterised by:
- (a) relatively open, rolling contoured land with rural and recent rural-residential land uses characterised by general farming activities, interspersed with hobby farming on lifestyle blocks;
 - (b) predominant pasture landcover with minor patterns of vegetation;
 - (c) the existing NIMT line;
 - (d) the arterial roads connecting Palmerston North, Bunnythorpe, Feilding and the links to SH54 and SH3; and
 - (e) a grid pattern of connecting streets off Railway Road.

⁶ Evidence of Andrew Mott, dated 9 July 2021.

⁷ Evidence of Andrew Mott, dated 9 July 2021, at section 5.

- 5.10 These features contribute to an existing air quality that is typical of a rural agricultural environment. There will be emissions of odour associated with the non-intensive land uses from time to time, and limited traffic-related effects of vehicle exhaust emissions and road dust. The NIMT in its current location contributes minor emissions to air of dust and particulate, but these will be negligible in extent and degree of nuisance.
- 5.11 The prevailing winds of the Manawatu and in this locality in particular are westerly and north-westerly. However, winds from other directions occur from time to time. Prevailing winds across the Site are shown in Figure 2 below.

Monthly wind direction and strength distribution

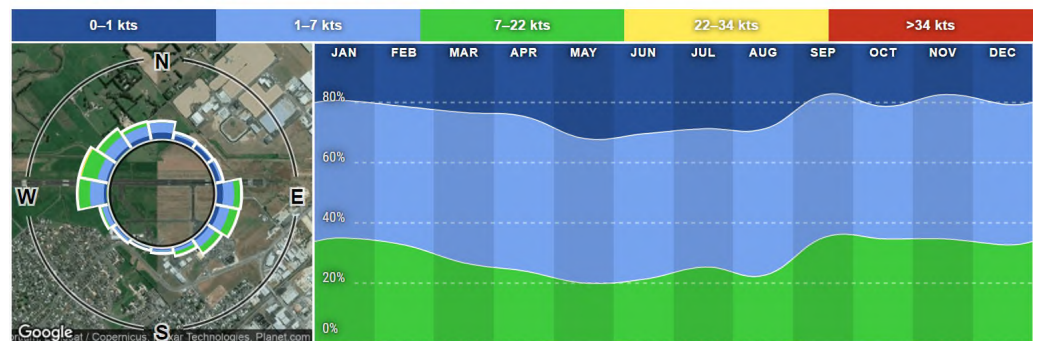


Figure 2: Wind rose and frequency data for Palmerston North

6. PSI FINDINGS AND CONCLUSIONS

- 6.1 The PSI did not identify any HAIL sites recorded within the Designation Extent. Two HAIL sites have however been identified by PNCC as being within 200m of the Designation Extent. These are:
- (a) The Bunnythorpe cemetery (HAIL Category G1), which is located immediately adjacent to the Freight Hub to the north. Contaminants of concern associated with cemeteries are lead, mercury, and nitrates. I consider it is unlikely however that any of these contaminants could have migrated into the Designation Extent at concentrations that could cause significant contamination of soils within the Designation Extent.
 - (b) The Bunnythorpe WWTP (HAIL Category G6), which was decommissioned in 2014. Wastewater flows now go directly to the Palmerston North WWTP at Totara Road. It is possible, although very unlikely, that trade waste flows having chemical wastes within them could have contaminated the soil at and in the immediate

vicinity of the WWTP. For this to have occurred would have required the nearby presence of an industrial activity that used hazardous substances of a persistent nature, released these into the sewer network and then from which leakage or overflows occurred that migrated into the soils of the Designation Extent. Overall, I consider the risk of this type of event to have occurred at the decommissioned WWTP to be negligible.

- 6.2 In a review of relevant resource consents issued by HRC, I found that one resource consent has been issued within the Designation Extent. This was for a truck wash facility but, based on the most recent aerial imagery on Google Earth (February 2020), this truck wash facility has not been constructed to date. Any potential contamination of soils associated with overflows from this activity will not have been realised.
- 6.3 Sheep dips and spray races (HAIL Category A8) are on-farm facilities that have historically been commonly used in rural New Zealand to treat sheep with chemical insecticides for economic and animal welfare reasons and so are common risks with rural sites. Areas containing sheep dips and / or spray races and surrounding land areas may possibly be impacted by contaminants such as arsenic, DDT and dieldrin which are (or were) typical components of sheep dipping formulations.
- 6.4 Historic aerial photographs from Retrolens and Google Earth were considered to identify the locations of any sheep dips and / or spray races (HAIL Category A8). The presence of sheep dips / spray races within the Designation Extent could not be confirmed through the PSI because a detailed scrutiny of all individual properties could not be undertaken in the time available and the constraints around Covid 19 (including the applicable lock down status) were also not conducive to fulfilling all of the components of a PSI. However, it is expected that both of these types of HAIL activities might have taken place in some locations of the Designation Extent (being 177.7ha of largely rural land). Identification of sheep dips and / or spray races, if present, could therefore indicate potential areas of contamination.
- 6.5 It has also been common practice in rural environments for general rubbish and treated timber to be disposed of by burning, along with other organic matter, as a means of disposal. These burn areas are generally called burn pads (HAIL Category G5) and they often result in the soil immediately below and surrounding the burn pads being impacted by arsenic, lead, and other contaminants, although only to a limited spatial extent. Due to the discrete nature of burn pads, impacted areas are usually restricted to clearly defined

and visually apparent areas of blackened soil. It is possible for burn pads to be located in the Designation Extent, but this could not be confirmed through a PSI, for the same reasons that I have explained in paragraph 6.4 of my evidence.

- 6.6 It is possible that discrete (but limited) areas of the soils of the Designation Extent may be affected by incipient contamination from these specific types of farming activities and from other rural activities involving agrichemicals application and / or fuels use in equipment and vehicles.
- 6.7 These possible sources of contamination and their associated potential outcomes should be the components of a DSI to be carried out at selected locations within the Freight Hub land, as I discuss later in my evidence.

7. ASSESSMENT OF CONTAMINATED LAND EFFECTS

Positive effects

- 7.1 In my opinion, the removal and off-site disposal of potentially contaminated soil material as part of the development of the Freight Hub will have a generally positive environmental effect, as the possibility of any contaminants impacting human or sensitive environmental receptors such as groundwater and / or surface water will be eliminated or mitigated through such works.

Earthworks and Construction effects

- 7.2 In relation to the potential HAIL activities identified across the Designation Extent, adverse effects may occur due to the development of the Freight Hub by creating a previously unconnected pathway between the source and receptor during the construction phase when soil disturbance is likely to take place. Such disturbance may lead to mobilisation and wider distribution of contamination by way of, for example, dust emissions or in surface water flows associated with stormwater. In both cases, potential receptors may be exposed to incipient contamination.
- 7.3 Contaminated soil could also contribute to dust emissions once disturbed. In turn, this dust could be a nuisance beyond the Freight Hub boundary.
- 7.4 As set out in Mr Skelton's evidence, to prepare the land for the construction of the Freight Hub, a large volume of earthworks will have to be carried out.⁸ These earthworks will require significant amounts of machinery to be brought

⁸ Evidence of Michael Skelton, dated 9 July 2021, at section 6.

in. This increases the risk of diesel and / or oil spills through operational or refuelling activities. However, I would expect that soil contamination caused by the operation of earthworks machinery would be limited in duration and extent, assuming the machinery is modern and appropriately maintained.

- 7.5 With respect to the particular HAIL activities that I identified and discussed above, the contaminants associated with sheep dips and spray race sites are generally arsenic, dieldrin and DDT. Exposure to these contaminants could occur via skin contact, ingestion or inhalation predominantly by site workers. In addition, without adequate soil management, there could be adverse impacts on soils in and near the Site during construction, or from run-off of contaminated sediment and stormwater once the Site is disturbed during construction activities.
- 7.6 Burn pads are also a typical feature of agricultural activities and may contribute contaminants such as heavy metals, polycyclic aromatic hydrocarbons ("PAH") and possibly asbestos to the near-surface soil layer, albeit in discrete and spatially limited patches across the Site. Exposure of site construction workers to contaminated dusts from disturbed former burn pad areas presents a potential risk, if not managed well.

Operational effects

- 7.7 Once the Freight Hub is operational, there are several HAIL activities that will be taking place on the Site that have the potential to give rise to adverse effects during Freight Hub activities.
- 7.8 A railway yard in itself is a HAIL activity (HAIL Category F6) and includes activities such as goods handling yards, workshops, refuelling facilities and maintenance areas. Contaminants such as diesel fuel, oils and greases will potentially be released from the locomotives along the railway tracks and in the fuel storage areas. Typically, the extent of contamination from these sources will be limited in quantity and spatial extent, and the effects will be negligible if mitigation measures such as engine maintenance and standard designs of refuelling equipment, as examples, are in place.
- 7.9 The railway yard will also be a transport depot which is another HAIL activity (HAIL Category F8). Any storage areas for potentially hazardous goods stored temporarily or permanently at the transport depot could also potentially give rise to ground contamination, if standard containment measures were not in place or were not effectively applied. In fact, such contingencies will be taken into account in both design and day-to-day operation of the Freight Hub.

- 7.10 In addition, cleaning chemicals, fuels and lubricants from the locomotives and rolling stock maintenance area could, if not managed in a suitable manner, enter surface water through wash bays and drainage channels, potentially resulting in soil contamination. Once again, if standard best practice measures are in place to retain and clean up spillages and the integrity of channels and wash bay areas is assured then adverse effects from contaminants will be minimised.
- 7.11 There will be a commercial refuelling facility associated with the Freight Hub. This is also a HAIL activity (HAIL Category F7). The land used for refuelling of machinery and locomotives could be susceptible to fuel spills or leakages. Leaks from underground and above ground storage tanks also pose a risk. The design of these facilities must follow established best practices and meet the compliance requirements of all relevant regulations and standards.

8. ASSESSMENT OF AIR QUALITY EFFECTS

- 8.1 Dust created during the earthworks and construction phase of the Freight Hub has the potential to cause adverse effects on the surrounding environment and on neighbouring properties. I understand that some residences in the vicinity of the Freight Hub have rainwater roof collection systems to provide for their domestic water needs. Without mitigation, there is the potential that there could be an accumulation of particulates on roofs within 100m of the Freight Hub marshalling yards.
- 8.2 The possibility of encountering potentially contaminated dust is related to the risk of such airborne materials being encountered and the likelihood of contamination being found. While I assess this risk as being low, this will need to be reassessed if it becomes apparent during construction activities that previously unsuspected contamination is present and, therefore, that emissions of contaminated dust might be possible.
- 8.3 Dust and exhaust emissions may also be created through the movement of heavy machinery around the Site. The odour of diesel is not expected to be discernible more than 50m away from any source and therefore I do not consider that there will be any significant odour impacts from diesel, as the nearest residences will be over 50m from the Freight Hub activities
- 8.4 I understand that the Freight Hub will operate with both electric and diesel locomotives because the NIMT line south of Palmerston North and the branch lines are, in both cases, not electrified and thus will rely on diesel powered locomotives. While there is a risk of particulate matter discharging to air from

incomplete combustion of diesel fuel generated by the diesel powered locomotives, I would expect this to be very localised (ie have impacts less than 30 metres from the source at most). I consider that this will result in no more than minor adverse effects on air quality.

9. MEASURES TO ADDRESS POTENTIAL ADVERSE EFFECTS

- 9.1 In my opinion, all of the potential risks and effects I have noted above can be adequately mitigated through a range of measures discussed below and included in the Proposed Conditions attached to Ms Bell's evidence. This is addressed in detail below.

Managing contaminated land effects

- 9.2 In my opinion, further investigations into possible locations of sheep dips / spray races and burn pads are necessary to confirm whether or not these activities have taken place and to identify the specific HAIL locations within the Site.
- 9.3 Each of the types of HAIL activities identified should be investigated further and quantified by way of a DSI to be carried out on the Site prior to the commencement of construction activities. As part of that process and the bulk earthworks to be undertaken, a Contaminated Site Management Plan ("**CSMP**") may also be required to manage the potential contamination impacts of the development works, depending on the outcomes of the DSI.
- 9.4 The scope and details of the DSI should be assessed and refined once the project design parameters have been confirmed and the volumes and locations of soil disturbance likely to be required have been clarified.
- 9.5 Once constructed, the Freight Hub will have several identified HAIL activities occurring on an ongoing basis. These activities will need to be considered in more depth once the detailed design parameters are known for the Site. I consider that any adverse effects from these activities can be minimised in scale by appropriate design criteria and mitigation measures, including Standard Operating Procedures ("**SOPs**") for the Site. Such SOPs are typically prepared as standard practices to manage individual aspects of complex industrial sites and this approach would be very useful to provide surety about mitigation of possible adverse effects of HAIL activities within the Site.

- 9.6 I also recommend that the existing bores that are still operational within the Designation Extent and its surrounds should be utilised in order to monitor potential groundwater contamination that could be caused by activities at the Freight Hub. This proposed monitoring should be included within a CSMP for the Freight Hub which will monitor the potential impact of various HAIL activities taking place on the Site. The CSMP will be informed by the findings of the DSI and the two are thus closely interrelated.
- 9.7 The key to preventing adverse environmental impacts from operational Freight Hub activities is ensuring that any discharges of contaminants into air, soil, groundwater or surface water are effectively controlled. This can be achieved by establishing site management protocols and procedures which are specifically developed to manage individual potentially polluting activities and prevent discharges. It will be necessary to ensure that site design, layout and related mitigation measures are in place as the first line of defence against contamination of the various environmental media. These matters will be addressed as part of detailed design measures for the Freight Hub.
- 9.8 The following factors will be key components of the Freight Hub design which will be addressed through detailed design to manage contamination:
- (a) the location of the bulk storage tanks for hazardous substances should be informed by the best approach towards minimising potential contamination as well as fitting operational efficacy. With that in mind, the exact location of the bulk hazardous substances storage vessels will be determined at the detailed design stage and will also be informed by other site operational requirements;
 - (b) the location and extent of impermeable base barriers (such as the use of clay layers) below the storage tank areas to prevent contamination in either groundwater or surface water; and
 - (c) bunding around tank storage areas, as well as other measures such as site gradients and cut-off drains around the Site perimeter, all of which will eliminate the potential wider effects of any release of stored hazardous substances.

Monitoring and managing air quality effects

Construction dust

- 9.9 To determine background levels of dust to assist with evaluating compliance with the air quality assessment criteria, I consider that a control dust deposition

monitoring site should be established upwind of the earthworks activities associated with construction on the Freight Hub. This monitoring site would be established upwind of the prevailing wind direction in an area having at least a 150m setback from the nearest site earthworks activities. Results from dust monitoring over time at the control site will establish background levels of deposited dust in the existing environment. The impacts of dust from construction activities as determined by further monitoring can then be compared with the background data.

- 9.10 Monitoring of TSP is the best practice method for active management of dust and particulate emissions. TSP refers to particles that are suspended in air at the time of sampling. The equipment for TSP measurements is intended to collect all particles, from less than 0.1 μm up to about 100 μm , thus including PM_{10} particulate within the monitored particle size range. This type of continuous monitoring provides real-time information to facilitate the active management of on-site activities that generate dust and particulate.
- 9.11 Dust related effects from construction and earthworks will be managed through the proposed Construction Management Plan which has been included in the Proposed Conditions.
- 9.12 A specific Construction Dust Management Plan ("**CDMP**") will also be required and, as Ms Bell explains, this will be included as part of the regional consent process for earthworks.
- 9.13 The implementation of these and other detailed measures within the CDMP will provide a regime of effective controls over dust emissions associated with construction activities during the estimated timeframe of over three years that will be required to complete all aspects of the proposed Freight Hub construction.

Operational air quality

- 9.14 Matters associated with the impacts of operation of the Freight Hub on air quality are more diverse than are the dust impacts likely to arise from construction. Some operational activities are unique in terms of their particular potential impacts on air quality. The Log Yard is a case in point where particulate of various types, sizes and sources can be expected to be released from log handling activities. I recommend that at-source controls be applied to the extent practicable to minimise the impacts of the various sources of dust and particulate. An example of an operational control includes log washing on-site to remove mud and dirt. Debarked logs are also prone to generate

particulate when handled and, therefore, minimising the extent of such log movements will be an important part of Log Yard activities management.

- 9.15 Similarly, for handling of other bulk granular materials, such as grains, and gravel, individual best operational practices will be developed and implemented, and specified in a standalone section of the operational air quality management plan. Dust emissions controls will be an important aspect of such handling protocols for material with elevated potentials to generate dust.
- 9.16 Besides the specific practices for operational controls on particular dust generating activities, I also recommend more general site management practices to mitigate dust be included within the operational dust management plan and implemented as and when necessary. This will include, but not be limited to, the beneficial impacts of boundary plantings (ie creation of turbulent air flows which lead to improved mixing and dilution and also knock-down of dust) and, if necessary, boundary water misting sprays can be installed to further mitigate particulate concentrations in the ambient air.
- 9.17 In order to address these wider air quality matters, I recommend that an Operational Air Quality Management Plan be prepared. However, I understand that air quality is a matter addressed by the regional council, and this is discussed in further detail in Ms Bell's evidence.

Other measures to manage effects

- 9.18 The identification of residences that rely on roof rainwater collection systems that might be affected by dust fall-out has been raised in submissions. KiwiRail is continuing to evaluate options to address contamination of rooftop rainwater collection for domestic supplies and a number of solutions are available.
- 9.19 The options available for mitigation of this rainwater collection system contamination risk include:
- (a) connection of residences to the domestic water supply reticulation system;
 - (b) the installation of first-flush rainwater diversion systems at residences that rely on rainwater collection; or
 - (c) supply by bulk tanker of potable water to residents' tank storage systems.

- 9.20 A process for selecting an appropriate solution to this issue is outlined in the Proposed Conditions attached to the evidence of Ms Bell.
- 9.21 The establishment of a Community Liaison Forum and Complaints Register through the Proposed Conditions will also provide a mechanism to address any complaints regarding dust as and when they arise.
- 9.22 In my opinion, the combination of these various mitigation measures, will be effective in minimising the potential adverse impacts of discharges of contaminants to air to negligible levels.

Managing hazardous substances effects

- 9.23 The Freight Hub's design parameters will pay close attention to the physical aspects of correct and compliant storage of all fuels and chemicals. The design parameters should include:
- (a) compliance with relevant standards for storage vessels construction and fittings;
 - (b) the optimum location of storage vessels within the site;
 - (c) suitable bunding and spill controls to contain any release of hazardous substances; and
 - (d) mitigation of any potential risk for stormwater to become contaminated.
- 9.24 However, as well as the design of the Site layout and the relevant engineering details, site management procedures are also critical to ensuring that contamination of the environment by the storage or use of hazardous substances is effectively controlled to reduce such impacts to negligible levels.

10. RESPONSE TO SUBMISSIONS

- 10.1 I have reviewed all submissions relevant to contaminated land and air quality matters. A number of submitters made brief reference to their concerns about dusts, fumes and land contamination likely to arise from Freight Hub operations but did not give specific details. While I acknowledge these submissions and have taken the issues raised into account in my responses below, these responses are primarily based on submissions that raise specific issues and I respond to these by way of themes of concern evident within the submissions, being:

- (a) discharges of dust and particulate to air;
- (b) contaminated land and further contamination from operational freight hub activities; and
- (c) storage and use of hazardous substances.

Discharges of dust and particulate to air

- 10.2 Various submissions note that "dust and fumes" are likely to be adverse environmental impacts of the Freight Hub. Some submitters seek physical dust controls and facility management measures and systems to mitigate adverse effects to negligible levels.
- 10.3 One submission also raises air pollution associated with operational activities at the Freight Hub and emphasises the potential adverse impacts on air quality of diesel locomotive exhaust emissions that have been cited in some international studies.
- 10.4 For the Freight Hub context, the most intensive train movement activities will be centrally located on the Site, with distances of at least 100m to the Freight Hub boundary. This, together with other mitigation measures such as boundary plantings to create turbulent air flows that encourage mixing and dilution of airborne particulates and regular maintenance to provide optimum engine running (ie minimised diesel exhaust emissions to air) will serve to reduce emissions to air from the operation of diesel locomotives to levels that present no more than minor off-site effects.
- 10.5 Some submitters identify the Log Yard as likely to be a particular source of dust and particulate emissions. As discussed above, I agree that Log Yard activities can potentially release particulate of many types, sizes and sources. Effective mitigation will require the application of specific at source controls and general good housekeeping to minimise the impacts of the various sources of dust and particulate.
- 10.6 The proposed central location of the Log Yard within the Freight Hub will assist in reducing the off-site impacts of dust and particulate emissions. Operational controls include log washing to remove mud and dirt and minimising the extent of such log movements on-site and there are other important mitigation measures. Controlling and mitigating emissions to air from activities at the Log Yard during operations will be the subject of the proposed Operational air quality Management Plan.

- 10.7 As I have described earlier in my evidence, these issues are best dealt with by a comprehensive set of measures to manage emissions to air, specifically via a Construction Management Plan (and a specific CDMP at the regional consent stage) as well as an operational Dust Management Plan Operational Air Quality Management Plan, which I understand would be prepared as part of the regional consent process.
- 10.8 When these plans are diligently applied, the end result in each case will be the mitigation of emissions to air from all sources at the Freight Hub to extents that mean the environmental impacts are negligible.
- 10.9 A concern of some submitters is the possible effect of dust emissions on the rainwater roof collection systems that provide for their domestic water needs. As I have outlined at section 9 of my evidence, KiwiRail recognises this issue and there are a number of solutions that can be implemented which is provided for in the Proposed Conditions.

Contaminated land and further contamination from operational Freight Hub activities

- 10.10 The submission of the Mid-Central DHB supports the proposal to prepare a DSI to investigate the nature and extent of possible historic ground contamination from (at least) sheep dips / spray races and farming activity burn pads that were identified in the PSI. As noted earlier in my evidence I believe that a DSI is necessary to identify and quantify these identified matters and any other issues of historic contamination that may become apparent. This process is provided for in the Proposed Conditions.
- 10.11 Several submitters noted the likelihood, in their opinion, that operations at the Site could result in ground contamination from oils, greases, chemicals and, particularly, fuels in storage and use. As I noted in my evidence, I believe that a combination of suitable facility design measures, including compliant storage for fuels and hazardous substances, regular maintenance of locomotives and rolling stock in a specific fully contained and imperviously lined site area (the maintenance workshop), and appropriate designs of on-site stormwater systems will combine to ensure that the potential for ground contamination during site operations is at no greater than a minor level.
- 10.12 One submitter raises a concern about possible groundwater contamination and the use of the existing bores in the immediate vicinity of the Site to monitor this. As discussed above, bores should be used for monitoring of potential contamination from operational activities at the Freight Hub. In addition, I recommend groundwater monitoring if the DSI to be undertaken prior to Site

earthworks activities reveals areas of historic contamination. This will be provided for within the detailed requirements of a Contaminated Site Management Plan for the Freight Hub. The process for preparing this is outlined in the Proposed Conditions.

Storage and use of hazardous substances

- 10.13 Some submitters, including Fire and Emergency New Zealand, have expressed concerns about the bulk storage and use of hazardous substances, especially fuels, at the Freight Hub.
- 10.14 I agree that safe and careful bulk storage of hazardous substances is critical. Before the commissioning of such storage facilities, compliance certification is required. An appropriate level of regulatory scrutiny will be imposed on the proposed facility prior to its operation and I therefore have full confidence that a compliant facility that performs to all specifications would be the result.
- 10.15 I would expect these kinds of details to inform standard safety in design processes and ensure that any particular bulk storage and use of hazardous substances are appropriately managed.

11. RESPONSE TO SECTION 42A REPORT

- 11.1 I have reviewed the sections of the Section 42A Report relevant to my evidence, particularly the Air Quality Report prepared by Council's consultant, Deborah Ryan. I have also considered the relevant sections of the Planning Report prepared by Anita Copplestone and Phillip Percy but note that, with respect to air quality issues, that report reflects Ms Ryan's conclusions.
- 11.2 Ms Ryan's report recognises the generic nature of the air quality assessment. As I have noted earlier in my evidence there is limited detailed design information available at this early stage to conduct a quantitative assessment.
- 11.3 While this has been a qualitative exercise because of the detailed design information constraints, the conclusions I have reached are conservative but still supported by available information and in my view, appropriate for this stage of the process. I also consider the approach taken is reasonable, and common for a project of this type.
- 11.4 I agree with Ms Ryan that there could be adverse air quality effects to neighbours from Freight Hub activities, both during construction and when the Site is operational, if no or inadequate mitigation measures were implemented. However, adequate mitigation measures will be implemented and a

construction dust management plan and an operational air quality management plan will be addressed through the regional consenting process, if required.

11.5 I endorse the relevant conditions included in Ms Bell's evidence.

Paul Heveldt

9 July 2021

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

**STATEMENT OF EVIDENCE OF DANIEL PARKER
ON BEHALF OF KIWIRAIL HOLDINGS LIMITED**

ARCHAEOLOGY

1. SUMMARY

- 1.1 The Freight Hub is situated in a landscape that has been occupied for many centuries, although for most of this time the proposed site for the Freight Hub ("**Site**") was predominantly covered in a dense and relatively impenetrable forest. There are no Registered Historic Places, recorded archaeological sites or listed heritage sites in the relevant district plans within the proposed boundary of the proposed designation ("**Designation Extent**"). There are no verified archaeological sites of Māori origin within the Designation Extent and the pre-1864 archaeological potential is likely to be greatest alongside or in close proximity to the various streams and waterways. Provided any discoveries are properly documented, I consider that the adverse effects on these areas in terms of archaeological matters will be no more than minor.
- 1.2 Following the Crown purchase of the Ahuaturanga Block and subsequent on-sale of the land to the Emigrant and Colonists' Aid Corporation and various individual settlers, occupational intensity within the Designation Extent increased in the years after 1864. However, the development of Bunnythorpe did not proceed at a pace or scale that was originally envisaged and substantial proportion of the planned settlement remained underdeveloped at the turn of the century.
- 1.3 There are only three verified archaeological sites located within the Designation Extent. There are seven houses, house sites and buildings that

have moderate site potential and 74 historic sections that have at least minor site potential. These sites will need to be investigated further prior to lodging any application for an archaeological authority from Heritage New Zealand Pouhere Taonga ("**HNZPT**").

- 1.4 In my opinion, adverse effects on archaeological values within the Designation Extent will range from negligible to low. Of the nine houses, house sites and buildings identified within the Designation Extent, only one is expected to be significantly adversely affected, five moderately affected and three affected to a no more than minor level. One historic section is expected to be significantly affected due to the presence of sensitive sites. Additional sites are expected to be discovered during the works to construct the Freight Hub but the number of additional sites is expected to be relatively small.
- 1.5 Relative to the total land area of the Designated Extent, the Freight Hub's effects on archaeological sites and built heritage are limited and readily manageable under the provisions of the Heritage New Zealand Pouhere Taonga Act 2014 ("**HNZPTA**"). An application to HNZPT for an archaeological authority, or authorities, to damage, modify or destroy archaeological sites will be required as a part of the management process.

2. INTRODUCTION

- 2.1 My full name is Daniel John Parker. I am an Archaeologist and director of inSite Archaeology Limited. I hold the qualifications of Bachelor of Arts (Hons) and Master of Arts degrees in Anthropology, specialising in the sub-discipline of Archaeology. I graduated from the University of Auckland in 2012. I am also a member of the New Zealand Archaeological Association and the International Association of Landscape Archaeology.

Experience

- 2.2 Since graduating from the University of Auckland in 2012 I worked at inSite Archaeology Limited, predominantly in the Horowhenua and Manawatu regions. I have also worked as a tutor and archaeological surveyor for the University of Auckland between 2003 and 2008. My clients include central government agencies, local and regional councils, iwi authorities and private developers amongst others. Some recent or current projects where I have provided archaeological advice, include:

- (a) Otaki to North of Levin Expressway, for Waka Kotahi NZ Transport Agency;

- (b) Palmerston North City Council wastewater treatment best possible option analysis, for Palmerston North City Council ("**PNCC**");
- (c) Lower Manawatu Rural (stopbank) Upgrade, for Horizons Regional Council;
- (d) Foxton Beach and Waitarere Beach master planning for future growth, for Horowhenua District Council; and
- (e) Mangahewa C wellsite extension, for Todd Energy.

Involvement in the Freight Hub

- 2.3 I was engaged by Stantec in 2019, on behalf of KiwiRail, to provide information, analysis and advice on matters of archaeology and cultural heritage. This included providing technical input on the process for selecting the location and indicative design of the Freight Hub, and providing a comparative assessment of the archaeological potential site options for the purpose of informing the multi criteria analysis ("**MCA**") workshops for the Freight Hub. I was also directly engaged by KiwiRail to attend and provide information in support of their iwi engagement.
- 2.4 I prepared the Preliminary Analysis of the Archaeological Potential for the Freight Hub that was included with the Assessment of Environmental Effects ("**AEE**") for the Freight Hub as Report H ("**Archaeological Assessment**").

Code of conduct

- 2.5 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

- 3.1 This statement of evidence will:
 - (a) provide an overview of the methodology and key conclusions of the Archaeological Assessment;

- (b) respond to the submissions received that relate to archaeology matters; and
- (c) address relevant matters raised in the Council's Section 42A Report ("**Section 42A Report**").

4. RESEARCH METHODOLOGY

- 4.1 My Archaeological Assessment is a desktop-based assessment of archaeological sites within the Designation Extent or, in the case of historic buildings, within 500 m of the Designation Extent.

Data Definition

- 4.2 The Archaeological Assessment identified four categories of archaeological or heritage site classes:

- (a) Registered Historic Places;
- (b) recorded archaeological sites;
- (c) known archaeological sites; and
- (d) unknown archaeological sites.

Registered Historic Places

- 4.3 Registered Historic Places are predominantly historic buildings, structures or monuments and archaeological sites that are "significant and valued historical and cultural heritage places" recognised and listed by HNZPT.

Recorded and known archaeological sites

- 4.4 The New Zealand Archaeological Association ("**Association**") maintains an online database of archaeological sites that includes basic site details and location information. The Association database contains a substantial number of sites, but it is not a complete record and there are many sites that are not included in the database. For this reason, sites listed in the Association database are referred to as 'recorded' sites, while sites not included in the database, but identified through other sources – such as plans, court records and photographs – are referred to as 'known' sites.

Unknown archaeological sites

- 4.5 Where there is no direct evidence for archaeological sites, but their presence is strongly inferred (on the basis of patterns in the distribution of known and recorded sites, or other sources of information), reference may be made to 'potential' or 'unknown' sites. My assessment has considered unknown archaeological sites broadly due to the inherently limited amount of information available about these types of sites.
- 4.6 I have interpreted the requirements in section 6(a)(i) of the definition of "archaeological site" in the HNZPTA that a site must be "associated with human activity" as including any place with a historic Māori name-association and unnamed features of the natural environment that are regarded as having been focal points for past human activity. In applying this broad interpretation, I have included natural features such as the named streams and their tributaries within the Designation Extent in my analysis. Although these features of the natural landscape may not meet the strictest HNZPTA definition of what is an archaeological site, there are a wide range of sources indicating that these places have, or are likely to have, an archaeological component that is unrecognised due to issues of surface visibility or a limited history of landscape study.
- 4.7 To compensate for an incomplete archival record, the Archaeological Assessment also evaluates all historic sections within the Designation Extent as potential archaeological sites. An historic section is a paper record (now digital) of property boundaries (ie a cadastral parcel) and is not an archaeological site under the strict definition of the HNZPTA. However, in the absence of detailed site-specific information, historic parcels can be a useful proxy for assessing an unknown archaeological potential as archaeological sites can be located within their boundaries. For example, a late nineteenth century historic section might contain a number of unknown archaeological sites (such as a house, barns and sheds, gardens and orchards, wells and rubbish pits, etc) within its boundary that might fit the statutory definition of an archaeological site, once identified.

Data Collection

- 4.8 My research for the Archaeological Assessment relied on the following sources of information:
- (a) Manawatu District and PNCC spatial data;
 - (b) HNZPT's New Zealand Heritage List;

- (c) historic survey plans;
- (d) historic newspapers, published books and pamphlets;
- (e) historic electoral rolls; and
- (f) some engagement with iwi.

4.9 From my research, there was an absence of documentation relating to Māori occupation and an abundance of material relating to European occupation. This means there is no information available that would enable the potential effects of Māori archaeological sites to be discussed with greater specificity. This has informed the conservative approach to the desktop analysis undertaken. As I have outlined above, I have interpreted the definition of "archaeological site" under the HNZPTA broadly taking this into account.

Values and effects scoping

4.10 Throughout this evidence and the Archaeological Assessment, I refer to:

- (a) archaeological potential; and
- (b) site potential.

4.11 "Archaeological potential" refers to the likelihood that an area within the Designation Extent or another defined area contains archaeological sites in accordance with the HNZPTA, and is considered as having either high, medium or low value.

4.12 "Site potential" refers to the value of a potential archaeological site, and whether it will meet the legal definition under the HNZPTA. It is measured based on the quality of a site's spatial information and the possibility that archaeological values will be affected, based on a 5-point scale from negligible, minor, low, and moderate site potential, or verified. A verified archaeological site is a location, building or object that fulfils the statutory requirements to be considered an archaeological site under the HNZPTA, and where the location and extent of the site are known to a high precision. A site with negligible site potential is highly unlikely to be considered an archaeological site under the HNZPTA and therefore adverse effects on archaeological values are expected to be low.

- 4.13 To determine the site potential in accordance with the 5-point scale, scores were assessed for archaeological values based on the historic research that was undertaken. Six archaeological values were considered:¹
- (a) rarity or uniqueness;
 - (b) information potential;
 - (c) contextual value;
 - (d) amenity value;
 - (e) cultural associations; and
 - (f) historic value.
- 4.14 For each site, archaeological values were assessed as being either nil, low, medium or high value on a 0 to 3 scale. The qualitative values were converted to a numeric scale so that the values can be aggregated to a single overall value. This is referred to as the total heritage value, with the maximum possible total score for a site being 18, and 0 being the lowest.
- 4.15 Scores that approach 18 in total heritage value indicate a site of national or international significance, while scores below 5 indicate low value sites of limited local interest. Mid-level sites that score between 5 and 10 have, or may have, local or regional significance, such as significant families that were the founding settlers of Bunnythorpe. Lower values were assigned to sites associated with families that were later settlers at Bunnythorpe and the lowest values were assigned to sites with negligible evidence for historic occupation.
- 4.16 Effects were scored on the basis of a combination of each site's heritage value. High value sites that would be physically affected by the construction of the Freight Hub were assessed as being the most affected. Sites with moderate or low site potential and moderate heritage values were assigned a moderate or low effect. Sites of negligible site potential and negligible heritage value were assigned a negligible effect.
- 4.17 Being a desktop analysis, not all values could be recognised and assessed as part of the Archaeological Assessment. For example, it was not possible to assess condition across all sites and so this has not been included. The cultural values of sites (separate to the assessment of cultural associations)

¹ Further context on assessing values is outlined at Appendix 2 of the Archaeological Assessment.

are also more appropriately addressed by iwi and were not included in the Archaeological Assessment.

5. SITE BACKGROUND

- 5.1 While the Manawatu region has an extensive and varied history of occupation by both Māori and Europeans – relative to each group's arrival and settlement in New Zealand – the Freight Hub is proposed to be located in an area of low archaeological potential. The underlying reasons for this low potential are described in the Natural context and Historic context sections of the Archaeological Assessment, as summarised below.

Natural context

- 5.2 The Freight Hub is proposed to be located mid-way between the Manawatu and Oroua rivers on a mix of Late Pleistocene river deposits of gravel, loess, sand and silts, and Holocene river deposits of similar material with localised areas of peat. Low terraces are incised by a number of shallow gullies, with a generally east-west aspect, formed by small streams and creeks discharging into the Mangaone Stream on the western side of the Site.
- 5.3 Prior to the beginning of European settlement in the Upper Manawatu in the later decades of the nineteenth century, the surrounding landscape of the Site was covered in a dense podocarp forest. However, within a few decades of intensive European settlement along the upper Manawatu and Oroua rivers, starting in the 1870s, both the forest and semi-swamp forests were almost entirely cleared of their native vegetation as the land was converted to pastoral use.
- 5.4 The local fauna included a range of fresh-water vertebrates and invertebrates, as well as a wide array of bird life that had included species of moa and the hokioi (Haast Eagle, *Hieraaetus moorei*), although both of the latter were extinct at the time of European arrival. With the clearance of the forests, the landscape, bird and fish life greatly changed.

Historical context

- 5.5 Radiocarbon (C14) determinations from coastal sites in the Manawatu indicate that Māori have occupied this part of the New Zealand coast for more than 700 years. Until the late-nineteenth century, the major settlements and occupation sites of the various iwi were predominantly located along the coastal dune belt and adjacent to the major rivers, streams, swamps, lagoons and inland lakes.

The densely forested land beyond these places was not unoccupied, but Māori and European historical accounts indicate that it was not intensively settled until after the completion of the Wellington-Manawatu Railway in 1886. Prior to this, the forest was used by Māori primarily for resource gathering, including bird snaring, collecting forest fruits and obtaining timber.

- 5.6 Archaeological evidence, court records and Māori oral histories indicate multiple migrations into the region – either by conquest or invitation – in the period before colonisation by the British Crown. Various authors have identified a number of iwi as being the first inhabitants of the Manawatu, including Waitaha, Ngāti Mamoe, Ngāi Tara and Ngāti Hotu. Although all authors agree that they were eventually conquered or displaced by people migrating from the east coast with the chief Whatonga, who had first arrived in the Manawatu aboard the Kurahaupō waka. The descendants of those people who arrived with Whatonga and settled the Manawatu primarily identify with the Ngāti Apa, Rangitane and Muaūpoko iwi.
- 5.7 A renewed period of Māori migration into the Manawatu occurred between 1820 and 1840 as iwi from the Waikato and north Taranaki were forced south by the pressure of northern iwi who had obtained European firearms and were using these to expand their territory or settle old grievances. Ngāti Toa, led by Te Rauparaha, migrated from Kawhia in the early 1820s and established a base at Kāpiti, eventually settling over much of the southern territory that was previously occupied by the Muaūpoko and their related allies. To consolidate his hold on these territories, Te Rauparaha invited Ngāti Raukawa to establish settlements in the land. However, it was only upon receiving an invitation from his sister, Waitohi – who shared Ngāti Raukawa descent through her mother, Parekohatu – that the Ngāti Raukawa agreed to come. Ngāti Kauwhata were among the first of the Raukawa identifying or allied peoples to make the journey south, temporarily establishing themselves between Otaki and Waikanae before the majority of Ngāti Kauwhata migrated north and settled along the banks of the Oroua River.
- 5.8 Prior to the late 1880s, the main centres of colonial settlement in the Manawatu were concentrated along the banks of the lower Manawatu River at Paiake, and after the great earthquake of 1855, at Awahou (Foxton). Their early importance was due to their position on the Manawatu River at locations that were accessible to sea-going trading vessels. Although the government had made substantial tracts of new land available to the public, the initial development of the inland settlements such as Palmerston North, Feilding, Awahuri and Bunnythorpe was hampered by a lack of infrastructure (roads and

drainage, in particular) and in some instances a high proportion of absentee ownership.

Bunnythorpe

- 5.9 Bunnythorpe was originally envisaged as a large town at what was planned to be the junction of the West and East Coast railways. Off the back of this expectation, large numbers of sections were purchased at the Government auctions by land speculators who expected a healthy return when the railways connection was completed. With a high number of absentee owners doing only the bare minimum to develop and retain their land, the growth of Bunnythorpe was outstripped by other centres such as Ashhurst and Palmerston North.
- 5.10 The decision to shift the West and East Coast railways junction to Palmerston North further stalled the development of Bunnythorpe, though the town continued to grow throughout the 1880s and into the 1890s, and by 1899 the Palmerston electoral roll listed 270 eligible voters residing at Bunnythorpe.
- 5.11 By the turn of the century, most of the once verdant forest had been cleared and farming was the main industry of the land that was serviced and supported by a small urban community. It seems likely that had the West and East Coast railways junction not been shifted to Palmerston North, Bunnythorpe would have grown to become the principal settlement of the district.

6. THE ARCHAEOLOGICAL LANDSCAPE

- 6.1 In the Archaeological Assessment, the assessment of the archaeological landscape is separated into two periods:
 - (a) pre-1864; and
 - (b) 1864 onwards.
- 6.2 This recognises the fundamental differences in the local environment and land tenure that define the historical distinct patterns of Māori and European occupation.

Pre-1864 – The Māori Landscape

- 6.3 No registered historic places or any Association recorded archaeological sites associated with pre-1864 Māori occupation will be affected by the Freight Hub. Any unknown sites that may be encountered are expected to be smaller sites

associated with forest-based activities targeting the food, fibre and material resources described in the Natural Context section of the Archaeological Assessment. The densely wooded nature of the landscape precludes the existence of larger sites outside of natural or human-made clearings and none are known to have been present in the immediate vicinity of the Freight Hub.

- 6.4 The most likely locations for unknown sites to be encountered is alongside or in general proximity to the Makahika and Mangaone streams and other unnamed tributaries that are likely to have been focal points of Māori occupation within the forest, particularly as sources for eel and other fresh-water fisheries as well as bird hunting and rat snaring sites. Small cultivations and seasonally occupied settlements are also a possibility alongside these waterways in places where regular flood deposits of good silts and sediments may have accumulated. The archaeological potential along the length of these waterways is high, but the site potential at any one location along a given waterway is expected to be minor.
- 6.5 The overall archaeological potential of the pre-1864 Māori landscape is, in my opinion, relatively low, with archaeological values of any sites that might be encountered within the Designation Extent expected to be low.

1864–1900 – The Colonial Landscape

- 6.6 Prior to 1883, thirteen families were identified as the only occupants at Mugby Junction (the present-day portion of Bunnythorpe that is to the north of the North Island Main Trunk line ("**NIMT**") on the Manchester Block). No properties, surviving buildings and structures, or archaeological sites associated with these founding pioneers will be affected by the Freight Hub. Important early civic building sites such as the first Bunnythorpe school, the Royal Hotel, Tremewan's store, Anglican and Methodist churches were also located north of the NIMT and will not be affected by the Freight Hub.
- 6.7 Seven pioneer families were identified as founding settlers at Bunnythorpe that resided south of the NIMT. Crown Grant plans and voter registration rolls indicate that at least two, with a probable third, of these seven families owned land inside the Designation Extent.
- 6.8 By 1900, there were 61 named individuals associated with the 154 individual historic sections located within the Designation Extent. Of the 61 named purchasers, only 25 are known to have resided at Bunnythorpe. There are 74 historic sections within the Designation Extent that are assessed as having at least minor site potential, but a more accurate appraisal of their potential

requires further research and fieldwork which is more appropriate at later stages of development.

- 6.9 All Crown Grant purchasers were required to improve their land in order to be granted a title, but for absentee purchasers the improvements were generally limited to clear felling the forest, stump clearance, grass seeding and fencing. The archaeological potential is expected to be negligible for these sections within the Designation Extent.
- 6.10 The Freight Hub is entirely located within the historic town and suburban limits of Bunnythorpe, with 128 town sections and 26 suburban sections of historic Bunnythorpe within the Designation Extent. Of these, 74 historic sections are assessed as having minor site potential. This amounts to approximately 91 hectares of the Designation Extent. A further 57 hectares of historic sections are assessed as having negligible site potential.
- 6.11 Within the Designation Extent, three sites have been verified as archaeological sites under the definition of the HNZTPA, being:
- (a) the Rogers' house, at 489 Railway Road;
 - (b) the Clevely house site, at 121 Clevely Line; and
 - (c) the Bunnythorpe Suburban Section 1510, at 121 Clevely Line.²
- 6.12 This is because they have a confirmed location and extent and are confirmed to be pre-1900.
- 6.13 Another seven sites have moderate site potential (which have a confirmed location and extent, and have a high probability of being pre-1900) and further research through the archaeological authority process is expected to result in the elimination of at least some of these from the list of affected archaeological sites.³ Five roads that were formed during the nineteenth century will also be affected by the Freight Hub, these being:
- (a) Clevely Line;
 - (b) Railway Road;
 - (c) Richardsons Line;

² In addition to (b), the Clevely house site, other archaeological sites separate to the house site are known to be present within this section.

³ These 9 houses, house sites and buildings identified within the Designation Extent are listed at table 6 of the Archaeological Assessment.

(d) Roberts Line; and

(e) Te Ngaio Road.

- 6.14 The archaeological values for these roads are generally low, but the Clevely, Richardsons and Roberts lines have moderate values due to their association with three of the pioneer families of the district.
- 6.15 The origin of the NIMT at Bunnythorpe was established in the nineteenth century as an extension of the Wellington and Manawatu Railway, becoming the Wellington to New Plymouth Railway. Little if anything is expected to remain of the original track and structures, but there is the potential for archaeological sites associated with railway construction to be encountered alongside the NIMT. The railway is given moderate scores for information potential, contextual value, cultural associations and historic values reflecting the fact that railway sites are likely to be of interest beyond the immediate community and also have a significance to the transport history and economic development of New Zealand.
- 6.16 The Glaxo building is not an archaeological site under the legal definition of the HNZPTA, but its significant heritage values are recognised through its listing as a Registered Historic Place and as a category 2 building of heritage value in the PNCC District Plan. In recognition of this, the Glaxo Building has been treated as an archaeological site, although this building is located outside of the Designation Extent.

7. ASSESSMENT OF EFFECTS

- 7.1 As with the archaeological landscape, the assessment of effects is divided into pre- and post-1864 periods, in this case reflecting the different specificity with which effects to Māori and European archaeological sites can be discussed.

Effects to the pre-1864 Māori Landscape

- 7.2 Adverse effects on archaeological sites associated with the pre-1864 Māori landscape are expected to range from low to negligible. There is potential for archaeological sites to be encountered where the Designation Extent approaches the Mangaone Stream between Roberts Line and Te Ngaio Road. Archaeological sites encountered in proximity to the Mangaone Stream will be located on the periphery of the Freight Hub and there is likely to be scope to minimise or avoid affecting these sites (if any are encountered). As a result, adverse effects are expected to be no more than minor.

- 7.3 A higher level of effects is expected for any sites that are discovered inside the Designation Extent, which is most likely to occur alongside the unnamed streams and waterways. Sites associated with inland hunting and fishing camps or forest activity areas, though numerous in the past, are archaeologically rare. The Freight Hub would likely result in the total destruction of any such sites, but with appropriate documentation and recording, the resultant effect, in my view, will be no more than minor.

Effects to the 1864–1900 Colonial Landscape

- 7.4 I have identified 197 sites with archaeological potential inside or within 500 m of the Designation Extent. These are listed in detail in Appendix 1 of the Archaeological Assessment and in summary in Appendix 1 to this evidence.
- 7.5 A house (site #14) and house site (site #13) that may have been built / occupied by the early Bunnythorpe settler Robert Volkerk are assessed as being significantly and moderately affected, respectively. It is unlikely that both sites were built / occupied by Robert Volkerk, meaning at least one of these sites will be ruled out as containing archaeological sites and therefore will not experience any associated effects.
- 7.6 Adverse effects to potential archaeological sites within the Designation Extent are generally expected to be in the negligible to low range. Of the nine houses, house sites and buildings identified within the Designation Extent, only one is expected to be significantly adversely affected (this being the possible destruction of a standing building that is possibly Robert Volkerk's House, site #14), five moderately affected and three affected to a no more than low level.⁴
- 7.7 Site #64, or Bunnythorpe Suburban Section 1510, is the one historic section site expected to be significantly affected due to the presence of sensitive sites. This section was purchased by Edwin Clevely, one of the founding settlers at Bunnythorpe, and the family's homestead (site #24) once stood on this property.
- 7.8 Adverse effects are also expected within historic sections that were owned by individual and families that resided at Bunnythorpe. Although the extent of the affected area(s) is expected to be only a very small percentage of the total land area within the historic sections that meet this qualification, being only 74 sections, totalling 91 ha. The level of effect within these sections is expected

⁴ The potential effects on these 9 sites are outlined at Table 7 of the Archaeological Assessment.

to range from low to moderate, depending on length of occupation and the strength of the owner's association with the civic life of Bunnythorpe.

- 7.9 A small number of roads, first built in the nineteenth century, will be affected by the Freight Hub but the level of effect is expected to be negligible. None of the affected roads will be removed completely and their names, which memorialise important local names, will be retained. There is also the potential for adverse effects to sites associated with Wellington–New Plymouth Railway (now incorporated into the NIMT), but no verified sites have been identified.
- 7.10 Twenty-three potential pre-1900 houses and the Glaxo Laboratories building are located within 500 m of the Designation Extent and may be subject to indirect, light or noise effects. However, it is anticipated that the proposed noise mitigation and lighting design within the Designation Extent will result in negligible effects to sites outside the Designation Extent. These external sites were included as part of the conservative approach undertaken in the Archaeological Assessment.

Overall conclusions on effects

- 7.11 Additional sites are expected to be discovered during the works to construct the Freight Hub, but the number of additional sites is expected to be relatively small. Eight houses, house sites and buildings located inside the Designation Extent will be affected to a low or moderate degree, and one house will be significantly affected. Further research is required as part of an archaeological authority process under the HNZPTA to verify the actual archaeological value of seven of these sites. One historic section will also be significantly affected.
- 7.12 The Glaxo Building is located beyond the Designation Extent and the proposed noise mitigation and lighting design will result in a negligible effect.
- 7.13 The analysis of the Crown Grant plans, and local electoral rolls indicates that other archaeological house sites are likely to be discovered inside the Designation Extent, but the number of additional sites is expected to be relatively small. Similarly, although no specific sites are identified at this time, a small number of archaeological sites with pre-1864 Māori associations are expected to be found inside the Designation Extent.
- 7.14 No verified archaeological sites of significant national value have been identified inside the Designation Extent.
- 7.15 Overall, relative to the total land area of the Designation Extent (177.7 ha), effects on archaeological sites and built heritage are limited and (as discussed

below) readily manageable under the provisions of the HNZPTA. Alternative locations for the Freight Hub, that were considered during earlier phases of investigation, were in areas of greater archaeological potential and would have resulted in the Freight Hub having a greater level of adverse effect.

8. MEASURES TO ADDRESS EFFECTS

- 8.1 HNZPT has a preference for management strategies that avoid adverse effects to archaeological sites. Due to the scale of the Freight Hub, adverse effects to some archaeological sites will be unavoidable.
- 8.2 In my opinion, the adverse effects on archaeological sites identified can be appropriately managed under the provisions of the HNZPTA. An archaeological authority, or authorities, to damage, modify or destroy archaeological sites will be required as a part of the management process. Due to the complexity of the Freight Hub and likely extent of effects to archaeological sites, HNZPT will require a research strategy and archaeological management plan to be prepared in addition to the standard documentation that must accompany any future authority application.
- 8.3 An archaeological management plan should include provision for:
 - (a) identification and demarcation of specific sites or general areas where earthworks must only be undertaken under the direct supervision or control of the project archaeologist.
 - (b) identification and demarcation of archaeological sites that are to be protected from accidental damage during construction and / or future operation of the Freight Hub through the education of contractors / operators and / or protective taping, signage or fencing where appropriate.
 - (c) standard procedures to be followed in the event that an archaeological site, wāhi tapu, kōiwi (human remains) or tupapaku (corpse) is discovered outside of a controlled excavation, including:
 - (i) notification of affected / interested parties; and
 - (ii) suspension of works in the area of a discovery to enable iwi partners to undertake appropriate culture measures and allow for any required archaeological investigation.

- 8.4 The preservation of subsurface archaeological sites within open spaces inside the Designation Extent may be possible in some cases, but most will need to be excavated and documented in keeping with standard archaeological practices.
- 8.5 Further research into the age, significance and condition of the houses, house sites and buildings of moderate site potential that are identified in Table 7 of the Archaeological Assessment will be required. Some of Site may have an early twentieth century origin, in which event the statutory provisions and protections of the HNZPTA would not be applicable.
- 8.6 Accidental discovery protocols are not required if an archaeological authority is already in place but should be implemented for enabling works or construction activities that could affect unknown archaeological sites prior to an authority being granted. KiwiRail's internal guide to accidental archaeological discovery protocols details standard procedures that provide for an appropriate response in the event that such a discovery occurs. These protocols apply to all KiwiRail staff, representatives, contractors, subcontractors, tenants and any other person operating on KiwiRail land and are currently under revision.

9. RESPONSE TO SUBMISSIONS

- 9.1 I comment below on submissions relating to the archaeological effects of the Freight Hub, as made by:

- (a) Peter Gore and Dale O'Reilly (61); and
- (b) Te Ao Turoa Environmental Centre – Rangitāne o Manawatu (69).

Peter Gore and Dale O'Reilly (61)

- 9.2 The weighting of heritage and archaeology factors was reduced between Workshop 2 and Workshop 3. These submitters have raised concerns that the reduction does not recognise the values of archaeological sites within the Designation Extent.
- 9.3 The weighting of MCA scores in heritage and archaeology category was not determined by the sum of individual site values, but by the ability of heritage and archaeology to aid in the selection of site options for the Freight Hub.
- 9.4 Heritage and archaeology scores were weighted higher during Workshop 2 as there was a greater range of scores (from 1 to 5) across the long list of nine

site options. The weighting was reduced for Workshop 3 as the range of scores was reduced (from 2 to 4) across the three short-list options and the individual option scores were themselves highly reliant on a proxy measure of late nineteenth century colonial occupation. This is because the short-listed sites were all in the vicinity of the historic Bunnythorpe settlement and although there are some differences between sites, the differences are not as great as when considering the long list sites.

- 9.5 The reduced weighting for Workshop 3 does not indicate that the archaeology became fundamentally less valuable, only that the scoring was a less useful measure for distinguishing qualitative differences between the shortlisted site options.
- 9.6 Submitters Gore and O'Reilly also raised concerns about:
- (a) the potential archaeological values associated with sections settled by Charles and Ellen Gore, and the Major family had not been recognised;
 - (b) potential impact on the Glaxo Laboratory building; and
 - (c) impact on a 'settlers hut' standing on "Section 16" within the Designation Extent.
- 9.7 In regard to potential archaeological values of sections, all historic sections within the Designation Extent, including those settled by the Gore and Major families, are explicitly recognised and addressed as potential archaeological sites in the Archaeological Assessment. Where possible, individual sections were linked to the original purchasers of the Crown Grant, and in particular:
- (a) All sections in the Bunnythorpe Crown Grant Plan purchased by John Major are identified in Appendix 1 and assessed for potential values and effect in Appendix 2 of the Archaeological Assessment.
 - (b) All sections in the Bunnythorpe Crown Grant Plan purchased by Charles and Ellen Gore are identified in Appendix 1 and assessed for potential values and effect in Appendix 2 of the Archaeological Assessment.
- 9.8 Indirect, non-physical, amenity effects (from noise and light pollution) on the Glaxo Laboratories building are described on page 47 of the Archaeological Assessment and are expected to be adequately addressed by the proposed mitigation works.

- 9.9 The submitters have referred to a 'settlers hut' standing on a 'Section 16', but as far as I am aware there is no 'Section 16' inside the Designation Extent. Sections 1216 and 1316 are located inside the Designation Extent, but there are no buildings or other structures visible on these sections in the 1942 or 2015 aerial photographs. The former section 1116 is outside and adjacent to the Designation Extent, but there are no buildings or other structures visible on this section in the 1942 or 2015 aerial photographs. There is a house on section 1226 that could be an historic building, but this house was not present at that location in 1942 and is assumed to be of post-1942 origin.

Te Ao Turoa Environmental Centre – Rangitāne o Manawatu

- 9.10 Te Ao Turoa Environmental Centre – Rangitāne o Manawatu have requested notification of accidental finds and participation in the management / safe keeping of archaeological materials. It is the expectation of HNZPT and in keeping with standard archaeological practice in New Zealand that iwi are kept informed and provided adequate opportunity to engage in all stages of the archaeological process. Any archaeological authority provided by HNZPT usually includes the following conditions that apply to affected iwi:
- (a) provision of access to sites to undertake tikanga Māori protocols consistent with cultural site safety requirements;
 - (b) 48 hours notification before the start and finish of archaeological works;
 - (c) cessation of works in vicinity of discovery of kōiwi or taonga and notification of iwi to enable appropriate tikanga protocols to be undertaken; and
 - (d) that iwi are to be provided with a copy of any reports completed as the result of archaeological work and are given an opportunity to discuss the report with the archaeologist if required.
- 9.11 Te Ao Turoa Environmental Centre – Rangitāne o Manawatu have also requested kaitiaki (cultural monitors) to oversee earthworks, ecology and archaeology. Arrangements for cultural monitoring fall outside of the provisions of the HNZPTA, but I would anticipate this will be organised between KiwiRail and their iwi partners.

10. RESPONSE TO SECTION 42A REPORT

- 10.1 I have reviewed the sections of the Section 42A Report relevant to my evidence, particularly Section 9.16 in respect of archaeology and historic heritage.
- 10.2 The Section 42A Report notes the concerns of submitters Gore and O'Reilly and that the submitters would like to see the NoR modified to address these concerns. I have addressed those matters above.
- 10.3 I support the recommendation in the Section 42A Report that the accidental discovery protocol is prepared in consultation with HNZPT and that the accidental discovery protocol conditions be modified to include:
- (a) details of contractor training regarding the skills necessary to be aware of the possible presence of cultural or archaeological sites or material;
 - (b) general procedures following the accidental discovery of possible archaeological sites, kōiwi tangata, wahi tapu or wahi taonga, including the requirement to immediately cease enabling or construction works in the vicinity of the discovery and the requirement to notify parties including, but not limited to, HNZPT; and
 - (c) procedures for the custody of taonga (excluding kōiwi tangata) or material found at an archaeological site.
- 10.4 I have reviewed and support the Proposed Conditions at Appendix 1 to Ms Bell's evidence.

Daniel Parker

9 July 2021

APPENDIX 1

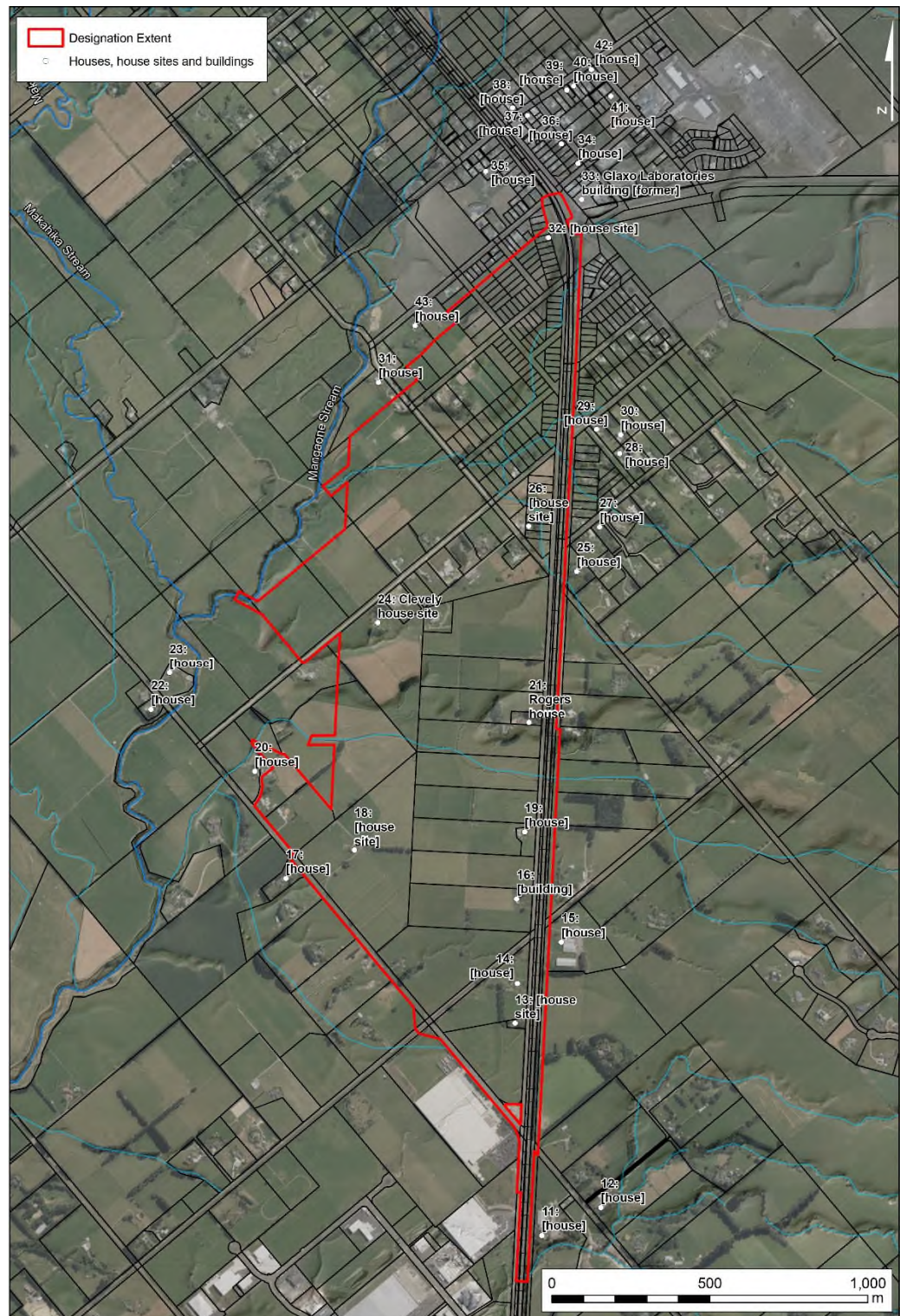


Figure 1 House sites, houses, buildings and named streams within the Designation Extent, or within 500 m of the Designation Extent.

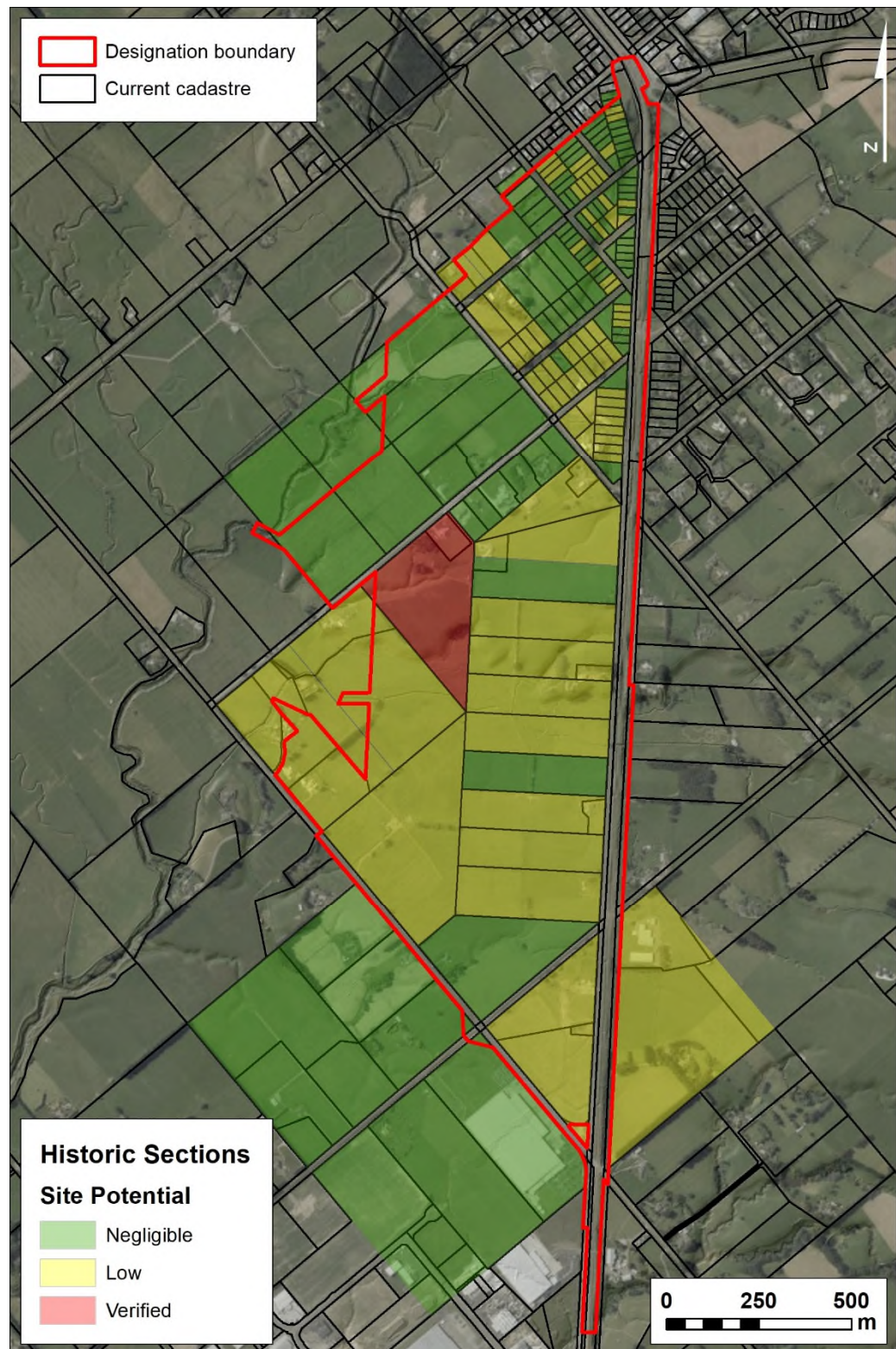


Figure 2 Historic sections (cadastral parcels), entirely or partially within the Designation Extent, classified by their archaeological site potential. The one section with verified archaeological potential is Bunnythorpe Suburban Section 1510.

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

**STATEMENT OF EVIDENCE OF KIRSTY AUSTIN
ON BEHALF OF KIWIRAIL HOLDINGS LIMITED**

SOCIAL IMPACT

1. SUMMARY

- 1.1 Four categories of social effects are relevant to the assessment (quality and amenity of the environment, people's way of life, the community, and income and employment). I considered these effects at two levels, to reflect the different types of social effects that communities are anticipated to experience:
- (a) the local impact area where the community will be directly affected by land-take and / or changes in amenity and connectivity; and
 - (b) the wider impact area where the community will most likely experience employment related, housing supply and connectivity effects without the amenity effects experienced in the local impact area.
- 1.2 I consider that the Freight Hub has the potential to reduce the quality and amenity of the environment as a result of increased noise levels and changes to the landscape / visual character both during the construction and operation of the Freight Hub. While noise and landscape mitigation can be implemented, the changes will still impact on values of importance to some of the local community and there is a degree of uncertainty on the final design and associated mitigation. The character of the community will change due to a community that largely consists of rural residential homeowners being

replaced by an industrial workforce, and the loss of the quiet, rural 'feel' that characterises the area.

- 1.3 However, once the Freight Hub is operational, there will be improved safety for people using roads and footpaths as a result of improvements to the roading network.
- 1.4 While there is the potential for housing supply issues in the short-term, if some of the construction workforce chooses to move close to the Site, there would be positive effects from employment opportunities for residents who may gain access to construction jobs as well as employment opportunities at the Freight Hub once it is operational.
- 1.5 Most social effects arise from changes to noise, landscape / visual and transport matters. Mitigation recommended by the technical experts on these matters are also important for mitigating social effects. In particular, the requirement for management plans to address construction and operational noise and vibration, landscape, construction traffic, level crossing safety, stormwater and dust.
- 1.6 I recommend further measures to address social effects and these are reflected in the Proposed Conditions. They are predominantly based on providing timely and appropriate information to communities, and opportunities for community feedback and include that KiwiRail:
 - (a) appoint a Community Liaison Person;
 - (b) prepare and implement a Construction Engagement Plan;
 - (c) establish a Community Liaison Forum; and
 - (d) establish a project hotline and complaints management register.
- 1.7 I support the relevant Proposed Conditions as attached to Ms Bell's evidence at **Appendix 1**.

2. INTRODUCTION

- 2.1 My full name is Kirsty Jane Austin. I am an Environmental Planner specialising in Social Impact Assessment. I hold the qualifications of Master of Regional and Resource Planning (distinction) from Otago University and a Bachelor of Science from the University of Canterbury. I have completed a social impact assessment course endorsed by the Environment Institute of Australia and

New Zealand ("**EIANZ**"). I am a full member of the New Zealand Planning Institute ("**NZPI**") and EIANZ.

Experience

- 2.2 I have been working as a social impact assessor since 2002, when I undertook social impact assessments on large regeneration projects in the United Kingdom. Since 2006 I have worked on social impact projects in New Zealand.
- 2.3 I have prepared social impact assessments on a range of developments, including roading projects such as alternative routes for a new arterial road into Nelson (for Nelson City Council) and the Whakatu Drive to Queen Elizabeth II roundabouts (for Waka Kotahi NZ Transport Agency), an offshore iron sand mining operation (for Trans Tasman Resources), a private plan change to establish an 800 home mixed use neighbourhood on the Kāpiti Coast (for Waikanae North Ltd), and for proposed defence-related operations (Ministry of Defence and New Zealand Defence Force).
- 2.4 I have reviewed social impact assessments for councils, including the Te Ahu a Turanga —Manawatū Tararua Highway project (for Palmerston North City Council, Manawatū District Council and Tararua District Council), a proposed extension to Waihi Correnso Underground Mine (for Hauraki District Council), and proposed water takes and associated consents for the Central Plains irrigation scheme (for Selwyn District Council).
- 2.5 I have undertaken social impact monitoring in response to conditions on designations for Peka Peka to Ōtaki Expressway, Auckland South Corrections Facility and Otago Corrections Facility.
- 2.6 I have also run a two day social impact assessment training course and co-presented seminars on social impact assessment at NZPI and EIANZ branch events.

Involvement in the Freight Hub

- 2.7 I was engaged by Stantec New Zealand in 2020 to undertake a social impact assessment of the Freight Hub on the preferred site.
- 2.8 I prepared the Social Impact Assessment that was included with the Assessment of Environmental Effects for the Freight Hub. I also provided input to KiwiRail's section 92 response dated 15 February 2021 ("**First Section 92 Response**") (Attachment 12). This included illustrating social impact information on maps (including the range and geographic location of social

effects in the local impact area and the location of houses in the local impact area), and matters relating to the proposed conditions, effects on the main community facilities and values of Bunnythorpe, and effects from construction traffic.

Code of conduct

- 2.9 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

- 3.1 This statement of evidence will:
- (a) provide an overview of the methodology and key conclusions of the Social Impact Assessment;
 - (b) respond to the submissions received that relate to the social impact effects on the environment; and
 - (c) address relevant matters raised in the Section 42A Report.

4. METHODS OF ASSESSMENT

- 4.1 I followed the four principal elements of social impact methodology to undertake the Social Impact Assessment (scoping, profiling, analysis of potential social effects, identifying measures to address effects) and applied the International Association of Impact Assessment ("IAIA") framework to determine the relevant social impact categories.
- 4.2 The categories of social effects selected for this assessment were:
- (a) Quality and amenity of the environment –this includes effects on people's wellbeing from changes to the physical environment (from dust and noise for example) and the amenity of that environment (people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes). It also includes effects on people's physical safety from a change to the environment.

- (b) People's way of life – this includes effects on patterns of daily living at home, work, school, for social and recreation pursuits, and on connectivity.
- (c) The community – this includes effects on the community from changes to its character and community cohesion. It considers changes to the people who live and work in the impact areas, the feel of the impact areas, and community resources.
- (d) Income and employment - this includes effects on people's wellbeing from changes to employment or income opportunities, and from other financial implications.

4.3 I applied a seven-point scale of effect ranging from high positive to high negative to each of the four social impact categories. This rating is without mitigation. The following factors are considered as part of this rating:

- (a) stage of effect and length of time the effect will be experienced (ie across construction and operation);
- (b) who is affected (for example landowners within the Designation Extent, others in the local impact and wider impact areas);
- (c) likelihood of the effect (high, medium or low);
- (d) severity of the effect (high, medium or low); and
- (e) importance of affected feature (local, regional or national importance).

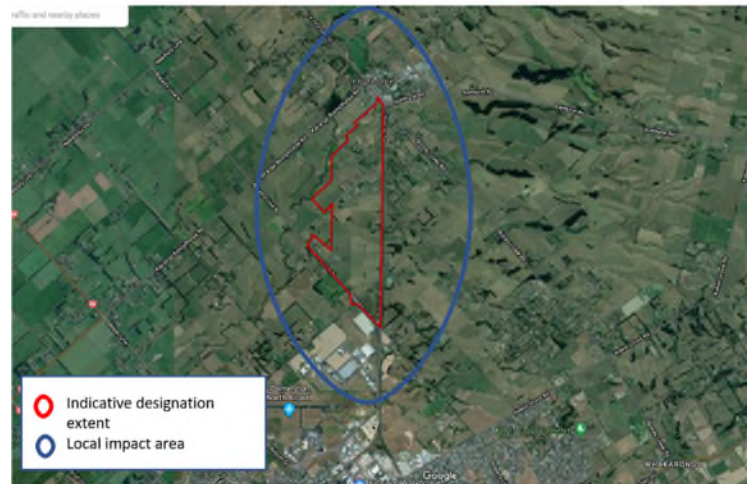
4.4 A high social impact effect (either high positive or high negative) is one where the effect is either highly likely to occur, severe, affects a large area, or affect a regionally or nationally important feature.

4.5 The geographic area that the Social Impact Assessment applies to is referred to as the 'affected area'. The affected area was defined at two levels to reflect the different types of social effects that communities will experience. These are the local impact area and the wider impact area.

4.6 The local impact area covers the Designation Extent and extends approximately 1 kilometre from the Designation Extent as shown in Figure 1 below from the Social Impact Assessment and more detailed Maps 1 – 3 in KiwiRail's First Section 92 Response (Attachment 12) which are provided in Appendix 1 of my evidence. The local impact area is a combination of the area

where the community will be directly affected by land-take, and the area surrounding the Designation Extent where the community will be directly affected by changes in amenity and connectivity. This area was identified having regard to factors such as the outer extent of the noise contours, outcomes of travel time modelling, and engagement feedback.

Figure 1 – Indicative location of the local impact area



- 4.7 The wider impact area covers the territorial authority jurisdictions of Palmerston North and Manawātū District. This is the area most likely to experience employment-related, housing supply and connectivity effects, without the amenity effects the local impact area will experience.

5. EXISTING ENVIRONMENT

Local impact area

- 5.1 The local impact area is characterised by rural and rural residential land uses, with Bunnythorpe township at the northern end and an industrial area at the southern end. The local impact area covers rural, rural residential, village centre / small-scale retail and industrial land uses. Map 1 (Appendix 1) indicates the locations of the main existing community facilities and services, places of cultural / historic value, and commercial services (food and retail premises principally serving the local community). By way of summary:

- (a) An estimated 431 houses are located in the local impact area, which equates to approximately 1,265 residents (applying average resident per household data for the area from the 2018 Census) as shown in

Map 2 (Appendix 1)¹. This includes the 24 houses within the Designation Extent.

- (b) The local impact area, including Bunnythorpe township, is bisected by the NIMT railway line and several roads which provide important connections for residents, as well as communities from further afield. Connectivity between Bunnythorpe township (and surrounding rural / rural-residential area), and Palmerston North is important for accessing work, services and facilities (such as schools and doctors) and shopping (such as supermarkets).
- (c) Bunnythorpe township had a population of 687 residents at the time of the 2018 Census. It has a small centre that provides a few retail facilities, volunteer fire brigade, places of worship and Bunnythorpe school (including a playgroup) which has been part of the community since the 1880s. Other community facilities and sites of value are located further from the centre, such as the Bunnythorpe recreation ground, cemetery, and historic features such as Bunnythorpe War Memorial and the Old Glaxo Building.
- (d) The values and aspirations of Bunnythorpe residents are articulated in the Bunnythorpe Village Plan 2018.² Bunnythorpe residents value the quiet village and rural lifestyle, which is cited as the reason that people choose to live there. The community also values the easy access to nearby facilities and services in Palmerston North and Feilding, and strong sense of local community. Their aspirations are for roading improvements in and around Bunnythorpe to improve the safety for people using roads, footpaths and railway crossings, a desire for a community centre to create a hub for the community to come together, and a desire to retain the village feel of Bunnythorpe. These are common themes raised in engagement undertaken for the NoR and in various council engagement.³

¹ This housing information was produced from GIS analysis, which was undertaken after the Social Impact Assessment. It has enabled a better understanding of the total population within the local impact area.

² *Bunnythorpe Village Plan 2018* (PNCC, 2018).

³ *Bunnythorpe Public Hall Society and Bunnythorpe Community Committee Survey* (July 2015), *City Council Village Plan Survey* (PNCC, September 2016), *Bunnythorpe Wishing Tree* (PNCC, March 2016), and NoR engagement activities as summarised in Appendix 2 of Technical Report J Social Impact Assessment, dated 20 October 2020.

- (e) The central and eastern parts of the local impact area consist of rural and rural residential land uses. In addition to farming, this area has a few commercial activities. The Mangaone Stream runs through the local impact area on the western side of the Designation Extent, and is fished in places.
- (f) The Designation Extent currently consists of rural and rural-residential land uses. It includes residents who have lived there for decades, through to those who have moved there recently. Similarly, some homes have been there for over a hundred years and some have been built recently or were being built at the time of preparing the Social Impact Assessment.
- (g) The southern end of the local impact area is at the urban edge of Palmerston North city. It is zoned for industrial land uses and includes part of Palmerston North Airport, large warehouse and industrial buildings. Not all of the industrial zone has been developed for this purpose yet. Some areas remain rural / rural-residential (the "Industrial Area" illustrated in Map 2 (Appendix 1) shows the extent of land zoned for industrial purposes).

5.2 The key demographic characteristics of the local impact area are summarised below. They are largely based on information from the 2018 Census.⁴

- (a) Age – the percentage of children and young adults in the local impact area was similar to New Zealand as a whole. The local impact area had a lower percentage of residents in the 25 – 44 year age bracket (22%) compared to New Zealand as a whole (27%), but a greater percentage of residents in the 45 – 64 year age bracket (30% compared to 25% in New Zealand).⁵ The local impact area had a lower percentage of residents of retirement age compared to New Zealand.
- (b) Ethnicity – residents in the local impact area are predominantly of European and Māori ethnicity. The ethnic diversity differs to New Zealand as whole. For example, nearly twice the percentage of residents in the local impact area (31%) were of Māori ethnicity

⁴ Further detail, including 2018 Census statistics, is provided in section 3.1 and Appendix 1 of Technical Report J Social Impact Assessment, dated 20 October 2020.

⁵ This higher percentage of 45 – 64 year olds may explain the higher median household income in the local impact area I refer to in point (d).

compared to New Zealand (17%), and there were significantly smaller percentages of residents of Asian and Pacific ethnicities.

- (c) Years at usual residence and home ownership - residents moved homes less frequently in the local impact area than New Zealand residents as a whole. Home ownership was significantly more common in the local impact area (81%) compared to New Zealand as a whole (65%).
- (d) Income – the median annual household income (\$97,433) was significantly higher than in New Zealand as a whole (\$75,700). Nearly half of households in the local impact area earned \$100,000 per year (47%), which was larger than households in New Zealand (37%). Conversely, the local impact area had a smaller percentage of households earning low incomes.)⁶
- (e) Employment – a higher percentage of residents participated in the workforce compared to residents in New Zealand as a whole. The type of employment that would be associated with the Freight Hub is 'wholesale trade' and 'transport, postal and warehousing' (collectively referred to as distribution and logistics). The local impact area had a higher percentage of residents employed in these (11.8%) compared to New Zealand's workforce as a whole (9.2%).
- (f) Travel to work and places of education – compared to New Zealand as a whole, a significantly higher percentage of residents in the local impact area used private or company vehicles to travel to and from their places of work (80% compared to 73% in New Zealand as a whole) or education (72% compared to 50% in New Zealand as a whole). Conversely, the percentage using public transport, cycling or walking was lower.

Wider impact area

- 5.3 The wider impact area covers the full extent of Palmerston North City and Manawātū District. Palmerston North city is the main urban area, housing the majority of residents and providing key health, education, public administration

⁶ For the purposes of the Social Impact Assessment, low household income is defined as Census 2018 data on households that earned \$30,000 or less per year. The 2018 NZ Deprivation Index sets household equivalised income for deprivation at \$34,023 or less per year. People living in a household with an equivalised household income below \$34,023 are considered to be income-deprived (*NZDep2018 Index of Deprivation*, December 2019).

and retail services for the Manawatū-Wanganui region. Feilding township is the next largest urban area, providing the main administrative functions and community services for Manawatū District. The remainder of the wider impact area is largely rural with a number of small townships.

- 5.4 Several main roads in the wider impact area, run through the local impact area, and provide important links between Feilding and Palmerston North (including to Palmerston North airport), Feilding and Ashhurst (and across the ranges), and to State Highways 3 and 54.
- 5.5 The key demographic characteristics of the wider impact area are summarised below. They are largely based on information from the 2018 Census.
- (a) The wider impact area had a population of 114,804 residents across 41,724 households. This included 91,812 residents of employment age. While the population increased between 2006 and 2018 by 11%, the percentage increase was less than across New Zealand as a whole (17%).
 - (b) The percentage of households in the wider impact area that own their own home (66%) is similar to households in New Zealand as a whole (65%).
 - (c) PNCC's Housing and Business capacity assessment concludes that sufficient housing supply can be provided in the short-term. PNCC has identified housing supply targets to meet projected demand over the medium and long terms and notes that there will be a short-fall in land to meet these medium and long term targets. PNCC and is addressing this through its Future Development Strategy.
 - (d) Palmerston North city provides a significant employment base for the wider impact area and the region as a whole. PNCC's Long Term Plan notes that while the city has 34% of the regional population, it provides 48% of the jobs in the region.⁷ PNCC's Housing and Business Development Capacity Assessment cites more affordable housing in districts surrounding Palmerston North as a contributor to this trend.
 - (e) Similar to the local impact area, the main industries that residents in the wider impact area were employed in were health care and social assistance (12%) and education and training (12%). The wider

⁷ PNCC, 2018, *Palmerston North 2028: 10 Year Plan 2018-2028* (pages 56, 168).

impact area had a greater percentage of residents employed in these industries, as well as public administration and safety (10%), than New Zealand's workforce as a whole.

- (f) The wider impact area had a slightly higher percentage of residents employed in distribution and logistics compared to the New Zealand workforce as a whole. PNCC's Long Term Plan indicates that logistics is one of six priority sectors that influence the city's economic wellbeing, and it is PNCC's goal to support and grow this sector.⁸

6. ASSESSMENT OF POTENTIAL SOCIAL IMPACT EFFECTS

- 6.1 In the following sections, I describe the main findings of the Social Impact Assessment in terms of the potential effects at the construction phase and operational phase. Within each of these phases, I identify the main effects on the relevant social impact categories for the local impact area and wider impact area. Map 3 (Appendix 1) illustrates the social impacts anticipated in the local impact area. These effects described below are considered without mitigation.

Construction phase effects

- 6.2 The assessment of effects from the construction phase was high level to reflect the level of construction details available for the NoR and the extent to which other technical assessments were available to inform the Social Impact Assessment. Therefore, I applied a conservative approach to determining the significance of construction effects.

Local impact area

- 6.3 I determined the overall scale of construction effects on the local impact area for each of the main social impact categories to be:
 - (a) Quality and amenity of the environment: moderate negative
 - (b) People's way of life: low-moderate negative
 - (c) The community: moderate negative
 - (d) Income and employment: low positive

⁸ PNCC, 2018, *Palmerston North 2028: 10 Year Plan 2018-2028* (page 57).

6.4 **Quality and amenity of the environment.** Construction will impact people's wellbeing in the local impact area from a reduction in the quality and amenity of the environment, and a potential reduction in safety from temporary changes to roads. I gave an overall rating of moderate negative, which reflected the following:

- (a) Amenity – changes to the quality and amenity of the environment for residents in the local impact area is rated moderate negative. This is based on noise and visual effects some residents will experience, uncertainties at this stage of the NoR process, and on the cumulative effect for some residents who may experience noise, visual and traffic safety effects. In particular:
 - (i) uncertainty about which homes will experience construction-related noise at a level that will disturb them and whether specific mitigation will be required for them;
 - (ii) uncertainty about the significance of visual changes to expect during the construction. In addition, detail of some construction-noise mitigation (temporary noise mitigation hoardings) will not be available until the detailed design stage;
 - (iii) residents will experience a lengthy construction phase; and
 - (iv) uncertainty about how long during the construction phase individual properties can expect to be affected, and the intensity of construction post-2030.
- (b) Safety – safety of residents moving around the local impact area (on the road and footpaths) is rated as low negative due to the potential for greater numbers of construction vehicles, detours, temporary lanes/roads and other unfamiliar roading changes.

6.5 **People's way of life.** The daily pattern of residents may be disrupted due to effects on connectivity and from a noisier environment at home. I gave an overall rating of the effect of construction on people's way life in the local impact area as low-moderate negative, which reflected the following:

- (a) Connectivity – residents may find their usual patterns of movement disrupted at times when temporary road closures and detours are required, as intersections are changed, and as private access ways are relocated. The movement of construction traffic onto / off the Site

may also affect road and footpath users. Mr Georgeson responds to submissions on this matter and concludes that the use of a Construction Traffic Management Plan will be sufficient to manage and adverse effects on safety and property access.⁹

- (b) Noise – noise generated from construction activities at the Site and from construction vehicles may have an impact on the way residents plan their days. Construction noise can be a source of disruption and frustration for residents who are home during the day, and particularly those who need sleep during the daytime. In considering this matter, I noted Dr Chile's statement "*most people should be able to continue normal domestic activities with only minor adjustments, particularly if there is effective advanced communication about when construction activities are due to occur*".¹⁰
- (c) There is some uncertainty about construction traffic effects and associated noise effects on people's way of life at this early stage.¹¹ I have undertaken an initial analysis of the people that may experience short-term disruption when the new roading network is constructed (due to works on roads and footpaths outside their properties, temporary detours, and from adjusting to new routes). This disruption may affect people's movements by making it more difficult or take longer to enter / leave properties, increasing travel times if traffic is halted when construction vehicles enter/leave the site, or making it more difficult for resident to cross roads to access key facilities. This is indicative however, because key decisions that will influence construction routes have not been made (such as the source of quarry material).

6.6 **The community.** I gave an overall rating of the effect of construction on the community in the local impact area as moderate negative. This reflected the following:

- (a) Impact of potential property acquisition:
 - (i) Approximately 41 properties will be acquired by KiwiRail, consisting of 24 homes (some of which accommodate both home and business) and some properties that are for

⁹ Evidence of Mark Georgeson, dated 9 July 2021, at section 9 – Property access.

¹⁰ Technical Report D - Acoustics Assessment, dated 23 October 2020 at page 35.

¹¹ Further detail on where the effects may be experienced and by whom is outlined in response to question 108 in the First Section 92 Response (Attachment 12).

commercial / investment purposes, including grazing for adjacent farms. Many of these property owners will have already experienced anxiety and stress while the extent of land take is confirmed and as properties are acquired. Feedback from engagement undertaken prior to lodging the NoR illustrated this point.

- (ii) KiwiRail adopted a strategy to minimise stress and anxiety that can arise over uncertainty about which properties will need to be acquired. For example, by providing an early indication to the community that the preferred site would likely be located to the north-east of Palmerston North; engaging with the community once the preferred site had been determined (rather than at the stage when nine potential site options were considered and hence affecting a much larger number of landowners); and initiating early property purchase to enable property owners to relocate as soon as possible (if that is the landowner's preference). While KiwiRail's approach does not alter the outcome for property owners whose land is now subject to the NoR, it does remove some uncertainty that has been introduced to their lives and enables them to make future plans.

- (b) Impact on resources in the community – this was considered in terms of the effect of construction on housing supply and community facilities.

- (i) If some of the construction workforce chooses to move close to their work, it may result in an increased demand for housing, and housing supply issues, in the local impact area in the short term. However, because of the Freight Hub's location to larger urban areas such as Feilding and Palmerston North, it is likely that the construction workforce will travel from a range of locations.
- (ii) While construction noise will be audible at Bunnythorpe School and Bunnythorpe Cemetery, noise modelling results in the Acoustic Assessment indicate they will not be at levels that will cause disturbance or affect amenity.

- (iii) Given that Bunnythorpe School students predominantly live in Palmerston North, any disruption to bus routes and the roads will affect the school.
- (iv) It is anticipated that Te Araroa trail will remain open during construction. The only disruption may be to temporarily divert a section of it for earthworks.

6.7 **Income and employment.** The effect on residents' ability to earn an income or access a job in the local impact area as a result of the construction phase was rated as low positive. Approximately 9% of residents of employment age in the local impact area currently work in construction, and therefore it is reasonable to assume that some may benefit from new opportunities for construction jobs. In addition, the proximity of a large construction workforce near Bunnythorpe township may create employment benefits from local retail and other businesses that service the workforce.

Wider impact area

6.8 I determined the overall scale of construction effects on the wider impact area for each of the main social impact categories to be:

- (a) Quality and amenity of the environment: negligible
- (b) People's way of life: low negative
- (c) The community: negligible-low negative
- (d) Income and employment: low positive

6.9 **Quality and amenity of the environment.** I rated the effect of construction on residents in the wider impact area as a result of changes to the quality and amenity of the environment as negligible. Changes to the physical environment (and enjoyment of that environment) during construction will not extend to the wider impact area, and the potential for road safety concerns for residents in the wider impact area driving through the Site during construction will be minimal.

6.10 **People's way of life.** I rated the effect of construction on people's way life in the wider impact area as low negative, as a result of the potential impact on the daily pattern of residents who regularly travel to / from Palmerston North through the Site. Disruptions for road users may occur when the road layout changes, accessways are replaced and intersection upgrades occurs, and

from additional traffic associated with construction works. Residents may also find it difficult to anticipate when / where delays will occur, given it is a lengthy construction phase and works are likely to happen in different locations at different times.

- 6.11 **The community.** I rated the effect of construction on the community in the wider impact area as negligible-low negative, as a result of the potential impact on housing supply issues. Pressure on housing supply may occur because there may not be a sufficiently large construction workforce in the wider impact area to resource the Freight Hub as well as other large construction projects scheduled in the area and neighbouring districts.¹² This was discussed with PNCC staff who indicated that housing supply for the construction workforce could be a challenge for all districts in the region in the short-term.
- 6.12 **Income and employment.** I rated the effect on residents' ability to earn an income or access a job in the wider impact area as a result of the construction phase as low positive. Mr Colegrave's evidence estimates that the construction phase could provide employment for almost 460 people in the region. With approximately 7% of residents of employment age in the wider impact area working in construction, it is reasonable to assume that existing residents could benefit from new opportunities for construction jobs. In addition, the Freight Hub is expected to attract new residents to the wider impact area to resource these jobs, which has the potential to create employment benefits from businesses that service the construction workforce in the wider impact area.

Operational phase effects

- 6.13 The assessment of effects from the operational phase was based on the following main components of the NoR:
- (a) The Site occupying 177.7 hectares of land in the local impact area to operate the Freight Hub and to incorporate the land required to mitigate effects from the Freight Hub (such as noise bunds and landscape treatment).

¹² The *Urban Development Capacity Indicators for Palmerston North: year ended 2019* (PNCC, 2019) lists major construction projects scheduled for 2019 to 2030. These include Waka Kotahi's Manawātū Gorge replacement highway, New Zealand Defence Force projects at Linton and Ohakea, Massey University projects, and a number of others that are awaiting final approval (eg Mid Central District Health Board projects), and projects located in close proximity to the wider impact area (eg Waka Kotahi's Ōtaki to Levin expressway).

- (b) New roads, and changes to existing roads, intersections and private accessways to accommodate the Freight Hub.
- (c) Operating up to 24 hours a day, 7 days a week.
- (d) Anticipated increase in traffic by 6,900 vehicles per day.

Local impact area

6.14 I determined the overall scale of operational effects on the local impact area for each of the main social impact categories to be:

- (a) Quality and amenity of the environment: high negative
- (b) People's way of life: moderate-high negative
- (c) The community: moderate negative
- (d) Income and employment: low positive

6.15 **Quality and amenity of the environment.** The predominant social effects from the operational phase is anticipated to be on the wellbeing of residents from a change to the environment in the local impact area. I gave an overall rating of high negative, which reflected the following:

- (a) Amenity – effects from changes to the amenity of the environment for residents in the local impact area is rated high negative for the following reasons:
 - (i) Increased noise levels and changes to the landscape will be noticeable across most of the local impact area and are not consistent with the amenity values for much of the area.
 - (ii) Residents that experience the most significant change will experience both noise and visual effects, and will also have experienced these throughout the construction phase.
 - (iii) There is uncertainty for the community about the extent of noise and visual effects, particularly at nighttime. For example, it is not currently known which houses will need to be treated to avoid sleep disturbance inside bedrooms. This uncertainty will remain until further design work is undertaken for the outline plan of works / regional resource consent stages and details of mitigation are confirmed.

- (iv) While the noise and landscape specialists have identified measures to mitigate effects, the changes will still impact on values of importance to the local community.
- (v) Residents living with visual and / or noise effects of the Freight Hub may feel a sense of unfairness that they did not receive compensation.
- (b) Safety – the Freight Hub is anticipated to create a safer environment for people moving around and through the local impact area from new and aligned roads, and improvements to intersections and rail crossings. This aligns with Bunnythorpe community's aspirations for roading improvements as noted above. I rated this as low positive.
- (c) Risk of property damage – the Site is partly situated in a flood prone area. Feedback during engagement indicated that some residents were anxious about the potential for their properties to be damaged if the Freight Hub exacerbates this risk. The Stormwater and Flooding Assessment concludes that suitable measures can be contained within the Freight Hub boundary. I rated this as negligible.

6.16 **People's way of life.** The effect on residents' daily patterns at home, work, social / recreation pursuits, and getting to and from those places, may be disrupted when the Freight Hub is operational. I gave an overall rating on people's way of life in the local impact as moderate-high negative, which reflected:

- (a) Noise – the noisier environment created by the Freight Hub and associated changes to traffic routes, and level of traffic generated, may result in changes to resident's daily routines. Of most significance would be the effect from noise if night-time activities occur, which could negatively impact residents' sleep. Increased day time noise will be experienced by many residents, to a greater or lesser extent, depending on the proximity of their home to the Freight Hub. For residents in the more rural / rural-residential parts of the local impact area, this may also affect their workdays.
- (b) Connectivity – some residents' daily life may be negatively affected by longer travel times to work, school and other services and facilities as a result of the new Perimeter Road, road closures and relocated entry / access points to properties. The Integrated Transport

Assessment¹³ calculated the average change as being less than 2.5 minutes, but identified some routes where travel times could increase by up to 4 or 6 minutes.

- (c) Recreation – the project design enables the continued use, and potential enhancement of Sangsters Road for the Te Araroa trail and it retains opportunities to integrate with PNCC's planned extension to shared cycling and pedestrian infrastructure (although it will change the alignment). This will maintain the existing positive impact on residents' daily lives if they cycle to work, school or other facilities, or for recreational purposes, and aligns with community values.

6.17 **The community.** I gave an overall rating on the effect of the operational phase on the community in the local impact area as moderate negative. This reflected:

- (a) Impact on community character – a change in land use within the Site is anticipated to affect the character of the community as a result of the following:
 - (i) A community that largely consists of rural residential homeowners will be replaced by an industrial workforce.
 - (ii) It is uncertain whether residents whose land will be acquired will remain living locally, or whether residents close to the Freight Hub will choose to move away because of the changes once it is operational. The demographic characteristics I referred to earlier, indicate that residents in the local impact area are typically settled (move less frequently). This means established families may move, or families who had planned to be part of the community for a long time, and this could affect community character (particularly cohesion).
 - (iii) The existing quiet, rural 'feel' of the community will change, as noted in relation to the 'quality of the environment and amenity' category. This affects a key community value established in the Bunnythorpe Village Plan¹⁴ (referred to earlier in the description of the existing environment), which

¹³ Technical Report C, Integrated Transport Assessment, dated 23 October 2020 at page 78.

¹⁴ *Bunnythorpe Village Plan 2018* (PNCC, 2018).

is that Bunnythorpe residents choose to live in Bunnythorpe for the quiet village and rural lifestyles. The Freight Hub will increase background noise levels the township will experience and may increase the activity ('busyness') in the township due to a large, new workforce adjacent to it. It will also replace some of the rural lifestyle with industrial development, which will reduce the physical separation of the township from Palmerston North. I do not consider that the other values and aspirations in the Bunnythorpe Village Plan will be negatively affected.¹⁵

(b) Impact on resources in the community – this was considered in terms of the effect of the Freight Hub on housing supply and community facilities.

(i) It is reasonable to assume some of the workforce may choose to move to Bunnythorpe township or surrounding rural / rural-residential areas to be close to their job although, it is not possible at this stage to estimate the size of a future workforce that may relocate (and hence the effect on housing supply). I understand the council is considering locations for additional housing supply as it prepares its Future Development Strategy and housing supply is not anticipated to be a concern by the time the Freight Hub operates. This is confirmed in the Section 42A Report, which considers that sufficient land is available to accommodate predicted residential growth.¹⁶

(ii) Community facilities – I anticipate effects on the main community facilities to largely be negligible, but more detailed assessment and mitigation is required for Bunnythorpe Cemetery. In summary:

(aa) While noise from operations at the Freight Hub will be audible at Bunnythorpe School and along Te Araroa trail, noise modelling results in the Acoustic Assessment indicate it will not be at

¹⁵ The other values and aspirations are: Bunnythorpe residents like the easy access they have to nearby facilities and services in Palmerston North and Fielding; Bunnythorpe residents have a strong sense of local community; and Bunnythorpe residents want improvements to roading in and around Bunnythorpe.

¹⁶ Section 42A Report, dated 18 June 2021, at paragraph [818].

levels that will cause disturbance or affect amenity.

- (bb) It is unlikely the Freight Hub will affect the viability of Bunnythorpe School. The majority of existing pupils live in Palmerston North (only one school family will be displaced) and there is potential that new families will be attracted to the area when a large permanent workforce is based at the Site.
 - (cc) There will be little or no change in travel time for Bunnythorpe School students travelling from Palmerston North to get to / from school.
 - (dd) In terms of changes to visual amenity, Ms Rimmer's evidence indicates that mitigation planting will improve the visual amenity of Te Araroa trail over time, as well as the entrance to Bunnythorpe.¹⁷ There will be no views from Bunnythorpe School.
 - (ee) In terms of changes to the amenity and character of Bunnythorpe Cemetery, the noise modelling results indicate that noise levels will be greater than currently experienced but will not be at levels that would disturb services (I address this further in response to the Section 42A Report). I note Ms Rimmer's evidence that there will be limited views of the Site from Bunnythorpe Cemetery and therefore very low visual effects.
- (c) Impact on individual property owners – as noted in relation to the construction phase, the Freight Hub will require the acquisition of 41 properties, including approximately 24 homes. The relocation of households will create anxiety and stress for these residents, and their network of family and friends. These residents will be compensated through the acquisition process, which will largely address financial concerns. However, wellbeing impacts for these individuals may remain. For example, compensation does not address feelings of loss associated with the emotional attachment to

¹⁷

Evidence of Lisa Rimmer, dated 18 June 2021, at section 7 – Visual amenity.

their home (or home / business) and negative feelings may remain once they have relocated, if they consider their new home (or home/business) is not comparable to what they had.

6.18 **Income and employment.** I rated the effect on residents' ability to earn an income or access a job in the local impact area as a result of the operational phase as low positive overall. This reflected:

- (a) The Freight Hub will provide the opportunity for residents in the local impact area to access employment. Approximately 12% of local residents of employment age currently work in distribution and logistics, which will be the main sectors of employment associated with the Freight Hub, so it is reasonable to assume residents will have appropriate skills to access these jobs. This is consistent with Mr Paling's conclusion that Bunnythorpe residents would benefit from increased job opportunities.¹⁸
- (b) During engagement activities, some residents in the local impact area expressed concern about the negative effect of the Freight Hub on property values. People's property is a major contributor to personal wealth and feelings of security. If the value of people's homes reduces, and therefore their equity, it can impact on their future opportunities. Property value projections are not available to determine whether this is a real or perceived fear, but notwithstanding this, fear and uncertainty for residents creates a negative impact in its own right.

Wider impact area

6.19 I determined the overall scale of operational effects on the wider impact area for each of the main social impact categories to be:

- (a) Quality and amenity of the environment: low positive
- (b) People's way of life: negligible-low positive
- (c) The community: negligible
- (d) Income and employment: low positive

6.20 **Quality and amenity of the environment.** I rated the effect of the operational phase on residents in the wider impact area as a result of changes to the

¹⁸ Evidence of Richard Paling, dated 9 July 2021, at paragraph [7.35].

quality and amenity of the environment as low positive due to safety improvements to the roading network and they will not experience amenity effects from the changed environment.

6.21 **People's way of life.** I rated the effect of the operational phase on people's way of life in the wider impact area as negligible-low positive, as a result of improvements to the roading network and cycling and pedestrian provision:

- (a) The daily patterns of residents who travel to / from Palmerston North will not noticeably alter when the new and realigned roads, intersections and rail crossings are operational. Mr Georgeson considers there will be minimal effect and indicates that PNCC's transport expert has reached a similar conclusion.¹⁹
- (b) Residents in the wider impact area who commute to Palmerston North by bicycle, or walk or cycle for recreational purposes, will continue to have access to Te Araroa trail. The project design retains opportunities to integrate with PNCC's planned extension to shared cycling and pedestrian infrastructure (although it will change the alignment).

6.22 **Income and employment.** I rated the effect on residents' ability to earn an income or access a job in the wider impact area from the operational phase as low positive. PNCC has identified the logistics sector as influential for Palmerston North's economic wellbeing and Mr Colegrave considers that KiwiRail's preliminary analysis of 1,000 jobs is a conservative estimate.²⁰ I note that approximately 10% of residents of employment age in the wider impact area currently work in distribution and logistics, and therefore I believe it is reasonable to assume that residents in the wider impact area will have the ability to access new job opportunities at the Freight Hub (or associated with the Freight Hub). I also note Mr Paling's conclusion that the Freight Hub will provide opportunities for other businesses to relocate to the area, such as specialist support services supporting businesses in the area (especially logistics) and to support the community (such as cafes, childcare and other personal services).²¹

6.23 **The community.** I rated the effect of the operational phase on the community in the wider impact area as negligible. The Freight Hub will not affect

¹⁹ Evidence of Mark Georgeson, dated 9 July 2021 at section 9 – Effects on commuters between Feilding and Palmerston North.

²⁰ Evidence of Fraser Colegrave, dated 9 July 2021, at paragraph [4.39].

²¹ Evidence of Richard Paling, dated 9 July 2021 at paragraph [7.24].

community character or resources within the wider impact area. While new residents may move to the wider impact area to take up jobs at the Freight Hub, I understand this future workforce will not have a significant effect on housing supply (taking in the account the estimated 10 year timeframe to become operational and the additional housing supply PNCC and MDC are planning for).²²

7. MEASURES TO ADDRESS EFFECTS

7.1 Most of the identified social effects arise from changes to noise, landscape / visual and transport matters. Mitigation is recommended in the evidence of the technical experts relevant to these matters, and are important measures for mitigating social effects as well. In particular, the requirement for:

- (a) A Construction Noise and Vibration Management Plan – this will assist in managing effects on people's routines and enjoyment of their homes and local area from noise during construction, and on key community infrastructure (for example, I understand it is normal practice for the plan to specify a halt to construction works during burial times at cemeteries). It will also provide certainty that further noise assessment will be undertaken to identify the houses that will be affected by construction activities, and mitigate as required, and to monitor noise throughout construction.
- (b) An Operational Noise and Vibration Management Plan – this will assist in managing effects on people's routines and enjoyment of their homes and local area from noise when the Freight Hub operates. It also provides certainty that further assessment will be undertaken to determine the noise levels and mitigation measures for homes where the initial assessment indicated that acceptable noise limits may be exceeded.
- (c) A Landscape and Design Plan – this will manage adverse effects on people's enjoyment of their landscape and views, including assisting to maintain a visual separation between Bunnythorpe and Palmerston North (and hence separate identity), and enjoyment of key community infrastructure (such as Bunnythorpe cemetery and Te Araroa trail), and will provide opportunities for the community to

²² Section 42A Report, dated 18 June 2021 at paragraph [818] indicates that sufficient land is available to accommodate predicted residential growth.

feedback on the design principles and outcomes of that plan as part of the Community Liaison Forum.

- (d) A Construction Traffic Management Plan, Level Crossing Safety Impact Assessment and Road Network Integration Plan – these will assist in addressing effects on the safety of residents moving around the local impact area, on people's routines moving around and through the local impact area, and on key community infrastructure during construction (such as travel to school routes and any temporary diversions to sections of Te Araroa trail). A Road Network Integration Plan will also assist in providing assurance to residents concerned at the effect on future plans for the wider roading network.
- (e) A Stormwater Management Report and Stormwater Monitoring and Maintenance Plan – these will assist in providing assurance to residents concerned about the risk of property damage from flooding.
- (f) A Construction Dust Management Plan and Operational Dust Management Plan – these will assist in managing effects on people's enjoyment of their homes and local area, and on their health from increased levels of dust and potential roof rainwater contamination.

7.2 I support these Proposed Conditions.

7.3 I also recommended additional measures where I considered it necessary to address social effects more comprehensively. This was predominantly based on providing timely and appropriate information to communities, and opportunities for community feedback. In my opinion, mitigation that focuses on communication can address frustration and fear that arises from the uncertainty and unpredictability about a development. It can be used to provide channels for distributing factual and timely information, opportunities to have a say on problems that arise, and opportunities to influence aspects of a project that have not been decided but are important to the community.

7.4 This latter point is important for NoRs which have subsequent detailed design and outline plan of work processes. It is particularly important for the Freight Hub because of the long construction phase until the Freight Hub becomes operational (2030) and further stages of development beyond that (until 2050).Community liaison person

7.5 I recommended that a specific person be appointed by KiwiRail as the primary point of contact for the community to engage with from the time the NoR is confirmed until the first year after the Freight Hub operates. The purpose of

establishing this position is to provide the community with easy access to someone within KiwiRail (or its delivery partner) who has accountability for responding to questions and concerns relating to land acquisition, detailed design, construction progress, and operational matters.

- 7.6 This recommendation is addressed in the Proposed Conditions which specify the purpose and responsibilities of the role, when it must commence, and that the person's contact details must be made publicly available.

Preparation of a Construction Engagement Plan

- 7.7 I recommended that a plan for engagement be prepared before construction starts, to ensure a two way flow of information would occur between the project team on construction and design matters until construction finishes.
- 7.8 This is addressed by the Construction Engagement Plan in the Proposed Conditions attached to Ms Bell's evidence, which will establish procedures for information flow from the project team to the community until construction is complete, and the Community Liaison Forum which provides opportunities for community feedback on construction and design matters.

Establish Community Liaison Forum

- 7.9 I recommended that a forum for community liaison be established to provide opportunities for the community to provide feedback on project details, such as draft management plans. The purpose of this forum is to provide a mechanism for regular and interactive discussions between the project team (KiwiRail and its delivery partners) and representatives of the community, to ensure the community is kept informed of, and can respond to, construction related matters, final project details and monitoring. This includes providing the opportunity for involvement of key service providers to assist them in planning for future capacity (such as housing, schools and roading) and to help the community understand the relationship between the Freight Hub and this key infrastructure.
- 7.10 The shape the forum ultimately takes is something that I expect KiwiRail and the community to decide together. These forums traditionally involve representatives of the community meeting to discuss matters related to the project, but they do not need to be if the community would prefer something else.

- 7.11 The Community Liaison Forum is provided in the Proposed Conditions. This includes providing opportunities for community feedback, including feedback on draft management plans.

Establish project hotline and complaints management register

- 7.12 I recommended a project 'hotline', together with a complaints management register, be established from the time that property is acquired and be in place until 12 months after the Freight Hub becomes operational. The purpose is to provide a direct and immediate means for the community to raise any concerns during construction. This is a useful means of:
- (a) providing transparency that concerns are being considered and actioned, by requiring regular updates of the register to the community (via the Community Liaison Forum);
 - (b) addressing potential issues early, such as property vandalism when properties become vacant. This is appropriate given that properties may be vacant well in advance of construction activities occurring across the Site;
 - (c) monitoring construction effects (including social effects) and for adapting construction and communication activities to reduce similar issues arising again; and
 - (d) providing an opportunity for the community to raise unanticipated effects that occur when the Freight Hub starts operating, or effects they consider are not sufficiently mitigated.

- 7.13 This recommendation is addressed in the Proposed Conditions attached to Ms Bell's evidence through the appointment of a Community Liaison Person whose contact details will be made available to the community and the proposed Complaints Register.

Mitigation of amenity-related effects

- 7.14 In addition to the mitigation recommended by other technical experts to address amenity effects and any subsequent effects on property values, I recommended the following:

Provide clarity about night time activities and mitigate night-time noise appropriately

- 7.15 Dr Chile's evidence introduces a requirement to establish a noise management boundary, which extends beyond the NoR boundary. I understand this is a means of setting an 'envelope of potential effects' in which KiwiRail will be required to monitor noise levels and ensure compliance with day-time and night-time limits.²³ This is in addition to proposed conditions that require night-time noise to be managed through an Operational Noise and Vibration Management Plan, specify the process for modelling, monitoring and mitigating effects from this noise, and require this information to be publicly available.
- 7.16 In my view, these conditions demonstrate a commitment to appropriately manage the effects of night time noise. However, it is important to note that even with these conditions, there still remains uncertainty for the community. For example, until the modelling is undertaken, it is not known which houses will be subject to noise levels that require acoustic treatment to avoid sleep disturbance.²⁴ For this reason I consider the proposed conditions requiring engagement between KiwiRail and the community, as an important component of the 'mitigation package'.

Maintain ongoing site management when properties are acquired and throughout the construction phase

- 7.17 The Community Liaison Person will receive and be able to respond to concerns relating to acquired properties, including maintenance matters. This will assist in managing concerns that properties will be left looking vacant and subject to vandalism. This is also a subject relevant to the Community Liaison Forum.

Commence mitigation screening and planting as soon as possible

- 7.18 Mitigation screening and planting that is undertaken before construction, can assist in addressing amenity effects from the construction phase, as well as ensuring noise and visual mitigation is effective in time for the operational phase. This is addressed in the Landscape and Design Plan and the Construction Management Plan.

²³ Evidence of Stephen Chiles, dated 9 July 2021, at paragraphs [9.12 – 9.15], and Figure 1 of the Operational Noise and Vibration Proposed Condition.

²⁴ Evidence of Stephen Chiles, dated 9 July 2021, at paragraph [8.7].

- 7.19 Some submissions supported the requirement of these conditions to implement noise and visual mitigation as soon as possible, which I discuss in the next section of my evidence.

8. RESPONSE TO SUBMISSIONS

- 8.1 I have reviewed the submissions received on the NoR. Most submissions are relevant to social impact effects because the majority of submissions relate to matters that affect people's environment and their daily lives (such as noise, lighting, dust, landscape and traffic). These issues will also be addressed from a technical perspective by other experts in their evidence. I respond to these issues only from a social impact perspective.
- 8.2 Most submissions are from residents within the local impact area, or that would be experienced within the local impact area.
- 8.3 Appendix 2 lists the submissions relevant to social impacts. I respond to these submissions by way of themes rather than individual submissions.

Effects on 'quality and amenity of the environment', 'people's way of life' and 'the community' from changes to the environment

- 8.4 The majority of submissions expressed concern at increases to noise, vibration, lighting and dust from construction and / or when the Freight Hub operates. Many of these were concerned that noise, vibration and lighting would be experienced 24 hours a day, 7 days a week,²⁵ and that there would be changes to increased amounts of traffic or changes to transport routes (new roads or traffic re-routed onto existing roads).²⁶
- 8.5 Changes to the physical environment can create different types of social effects, which I considered in relation to the following social impact categories.

²⁵ These include submissions from R & R McGill (7), M Woods (15), M Jones (16), A J Hofman (25), P Hurly (26), H & P Kinaston (27), K George (28), L Spearpoint (33), S Robinson (34), R Curtis (35), H S Thompson (36), I Harvey (37), L Harvey (38), G Rose & G Frampton (40), A Fox (47), R M Eastwood (53), J Austin & R Wapp (57), J K Whittle (59), F Lugt (68), D O'Keeffe & D Butts (72), I & A Ritchie (75), R Carey (84), J I Hurly (86) and C J Dingwall (88).

²⁶ These include submissions from Aorangi Papakainga (3), R & R McGill (7), Tutaki 2019 Ltd (13), F Hurly (22), T Burleigh Behrens (29), L Spearpoint (33), G Rose & G Frampton (40), M Taipana (44), A Fox (47), J Williams (52), J Austin & R Wapp (57), M A Chapman (62), S L Gore (64), A Wotton (66), R L Thomas-Crowther (70), A & F Gibson (76), W J Bent (77), R Carey (84), J I Hurley (86), M & M Hurley (87), J Jensen (90), C Forbes (93) and O L Reid (95).

Quality and amenity of the environment

- 8.6 As referred to earlier in my evidence, the predominant social effect identified from the operation and construction phases was on the wellbeing of residents in the local impact area from a change to the quality and amenity of their environment. I recognise there will be a change in amenity as a result of the Freight Hub.
- 8.7 However, I consider that the proposed mitigation measures and conditions will assist in mitigating social effects on the quality and amenity of the environment. This includes through the preparation of the management plans addressing effects from noise, traffic, landscape, dust and lighting, for example. In addition, Ms Rimmer's evidence recommends a process for further investigating opportunities to minimise adverse visual amenity effects at specific residences.²⁷
- 8.8 In my opinion, the requirements for ongoing engagement through the Community Liaison Forum, the Community Liaison Person, and Complaints Register process, will also contribute positively to this mitigation. The Community Liaison Forum will provide allow the community opportunities to provide feedback on draft management plans, including on the design principles and outcomes of the Landscape and Design Plan.
- 8.9 I note that A G Park (74) supported the location of the Freight Hub on the basis it would improve the visual amenity of the area.

People's way of life – effect on patterns of daily living

- 8.10 As I refer to earlier in my evidence (paragraphs 7.15 – 7.16), the proposed noise mitigation conditions, together with the conditions requiring engagement, will in my opinion, assist in mitigating social effects arising from noise and the uncertainty about noise effects on people's lives.
- 8.11 I acknowledge some submissions indicate there are also residents in the local impact area who have sensory conditions that make them sensitive to sound and vibration. Dr Chiles indicates that noise assessments are based on a community response, rather than individual (personal) responses. In my opinion, it would appropriate to engage with these residents (and any other residents) that are identified as being residents of affected dwellings as

²⁷ These residences are listed in section 8 (Further investigation of opportunities to minimise adverse visual amenity effects) of the Evidence of Lisa Rimmer, dated 9 July 2021..

determined through investigations required under the Operational Noise and Vibration Management Plan.

People's way of life - increased travel times / connectivity

- 8.12 Some submitters were concerned that increased travel times from roading changes will affect people's routines and connectivity during construction and when the Freight Hub is operational. This applied to people in the local and wider impact areas.
- 8.13 I addressed the effect of travel disruption and times under the category of 'people's way of life – connectivity' and rated these low-moderate negative (construction) and low negative (operational).
- 8.14 Mr Georgeson has considered these submissions from a technical transport perspective. Mr Georgeson concludes that effects of construction related effects on property access, traffic safety and efficiency can be appropriately managed through a Construction Traffic Management Plan.²⁸ In respect of the effects from the new roading layout, Mr Georgeson concludes that where roads or intersections are closed, the proposed alternative access will cater for all traffic movements (acknowledging that some will experience longer travel times).²⁹

The community - character / feel

- 8.15 Some submitters were concerned that the feel or character of the Bunnythorpe township and surrounding area will change due to a noisier environment, increased traffic, and/or a significant change to the rural / rural residential outlook.
- 8.16 I rated the effect on community character as moderate negative in my assessment.
- 8.17 In my opinion, the landscape and engagement mitigation will go some way to addressing the effects on character, through the development of a Landscape and Design Plan (including the design principles that will underpin that plan), and providing an opportunity for the community to provide feedback on the plan at the detailed design stage.

²⁸ Evidence of Mark Georgeson, dated 9 July 2021, at section 9 – Property access.

²⁹ Evidence of Mark Georgeson, dated 9 July 2021, at section 7 – Travel time effects, section 9 – Property access, and section 9 – Closure of Railway Road and level crossings.

- 8.18 However, not all submissions considered these changes to be negative and some submitters identified the potential that the workforce servicing the Freight Hub may create a more vibrant township with additional facilities.

Effect on cycleway and walkway provision

- 8.19 Some submitters raised concerns about provision and continuity of cycling and walking facilities.
- 8.20 In my assessment I concluded the effect of the Freight Hub on pedestrian and cyclist resources would be negligible ('people's way of life' category). This took into account that Te Araroa trail can continue to be used, and may result in improvements to it along Sangsters Road, and that footpaths will be provided along the new Perimeter Road, which will be an improvement along the existing stretch of Railway Road which does not have footpaths.
- 8.21 The project design also retains the potential to accommodate the shared pathway between Bunnythorpe and Palmerston North that PNCC is delivering. I acknowledge that the alignment will be affected because the stretch of Railway Road that the extension is planned for will be replaced by the new Perimeter Road. This extension is identified in the Palmerston North Urban Cycling Network Masterplan 2019 (interactive version) and Bunnythorpe Village Plan 2018, and is budgeted for in PNCC's Long Term Plans (2018-2028 and 2021-2031).
- 8.22 From a social impact perspective, I consider that this is a matter relevant for the Community Liaison Forum. As referred to in paragraph 7.9 of my evidence, this forum will provide opportunities to involve key service providers (such as PNCC and MDC) and enable the community opportunities to provide feedback as the design and project progresses. The submission from Horowhenua District Council supports this approach to ongoing community engagement as the detailed design relating to Te Araroa trail is developed, and supports further investigation of opportunities for walking and cycling.

Loss of private property / homes

- 8.23 Submissions from residents (landowners) within the Site expressed their opposition to losing their homes and businesses.
- 8.24 I considered the effect of the loss of residents' homes at the construction / pre-construction phase and operational phase ('the community – impact of property acquisition' category). I concluded that effects on wellbeing, such as anxiety and stress, are already occurring due to uncertainty about the land take (before

the Site was confirmed), and will occur while uncertainty and concerns remain about land acquisition and relocation.

- 8.25 In considering mitigation, I took into account KiwiRail's approach to minimising uncertainty by limiting the number and time involved in site selection before announcing the preferred site (and thus reducing the number of potentially affected landowners) and by providing the opportunity for early property purchase which gives landowners a degree of control and choice over when they begin the process of relocating. Ms Poulsen's evidence confirms that KiwiRail has purchased a number of properties already which will reduce some of the uncertainty for those landowners.

Effect on housing supply

- 8.26 Some submitters were concerned at the loss of housing supply because the Freight Hub will displace existing houses and will remove the potential for housing to be accommodated on the Site in the future.
- 8.27 In my assessment, I rated this low negative to negligible–low negative for the construction phase, and negligible for operational phase ('the community – impact on resources in the community').
- 8.28 In terms of the Freight Hub removing a future housing source, PNCC has confirmed there is sufficient land available for future residential development, and if the Freight Hub progresses, PNCC may rezone additional land for housing in the vicinity of Bunnythorpe.³⁰ Housing supply is addressed in further detail in the evidence of Mr Colegrave.

Effect on Bunnythorpe School

- 8.29 The Ministry of Education raised the potential for noise and traffic to affect Bunnythorpe School at the construction and operational phases and Bunnythorpe Community Committee requested consideration be given to effects on the school.
- 8.30 I considered the effect on Bunnythorpe School would be negligible as summarised earlier (paragraph 6.6b and 6.17b). The evidence of Dr Chiles and Mr Georgeson responds to these submissions in further detail on noise and traffic effects.

³⁰ Section 42A Report, dated 18 June 2021, at paragraph [818].

- 8.31 I acknowledge the Ministry's request for engagement. As previously noted, I recommended key service providers have the opportunity to be involved in the Community Liaison Forum (such as the school) for this reason. KiwiRail has not proposed that the forum have specific membership which enables these parties to opt in and participate if they wish to.

Effect on health

- 8.32 Some submissions were concerned at the potential effect on people's health.³¹ Health concerns were mainly attributed to the potential contamination of residents' drinking water sources (dust entering rainwater collection systems), night-time noise, anxiety due to uncertainty of the Freight Hub (such as how much noise or light will affect them), and perceived reductions in road safety.
- 8.33 Health considerations have influenced my assessment as summarised below, and have contributed to the high negative ('quality and amenity of the environment') and moderate-high negative ('people's way of life') ratings I gave to the operational phase:
- (a) in considering people's physical safety from changes to roads and flooding ('quality and amenity of the environment' category).
 - (b) in considering people's mental health as a result of people's homes and businesses being compulsorily purchased, and for the people remaining in the local area ('the community' category).
 - (c) in considering the impact on people's mental health from living in a noisier environment, and from changes to aspects of the environment and community that are valued (such as the landscape and character of the area).
 - (d) in considering the effect on people's mental health from dealing with uncertainties, such as when and how construction will affect them, what night-time noise and lighting will be like in reality and the effect on property values.
- 8.34 In contrast to the above submitters, a few were of the view that the operational phase will improve health and safety by removing some existing freight traffic off roads.

³¹ Submissions included those from R & R McGill (7), M Woods (15), S Robinson (34), G Rose & G Frampton (40), R M Eastwood (53), J Austin & R Wapp (57), J K Whittle (59), S L Gore (64), D O'Keeffe & D Butts (72), I & A Ritchie (75), R Carey (84), MidCentral DHB Public Health Service (94).

- 8.35 In my opinion, the effects on health have been appropriately addressed through the range of conditions to manage adverse effects from noise, roading, dust and construction activities, and the different avenues for engagement. In relation to the concern raised about residents' drinking water sources Mr Heveldt, has identified options available to mitigate the risk and has recommended a condition that establishes a process for selecting an appropriate solution, which has been incorporated into the Proposed Conditions.³² I support that approach.

Effect on employment opportunities

- 8.36 Some submitters considered the opportunities that people will have to get jobs during construction and / or operational phases to be a benefit of the Freight Hub. Some submissions noted this may include jobs at businesses associated with the Freight Hub and servicing the Freight Hub's workforce.
- 8.37 I agree with the view of these submitters. Mr Colegrave's evidence provides estimates of the numbers of jobs generated during construction and the operation of the Freight Hub. In my opinion there is good reason to believe that residents in the local and wider impact areas could access these jobs and as referred to earlier in my evidence, In summary:
- (a) The construction workforce required to build the Freight Hub provides employment opportunities for residents. Construction is one of the larger employment sectors for residents in the wider and local impact areas. With many large construction projects forecast over a similar period, the number of residents with appropriate skills to access these jobs may increase.
 - (b) Jobs created at the Freight Hub and from businesses associated with the Freight Hub provide an opportunity for local employment. Residents in the wider and local areas are currently employed in relevant sectors and will therefore have appropriate skills to access these jobs (transport, warehousing and the wholesale trade).
- 8.38 One submission considered that the new jobs created by the Freight Hub will come at the cost to old ones. On the basis of Mr Colegrave's evidence, which indicates that many more jobs will be created than lost, I do not consider this will have a material effect on people's income and employment.

³² Evidence of Paul Heveldt, dated 9 July 2021, at section 9.

9. RESPONSE TO SECTION 42A REPORT

9.1 I have reviewed the sections of the Section 42A Report relevant to my evidence, particularly the Technical Evidence: Social Impacts of the Section 42A Report.

9.2 The Section 42A Report raises two main issues and recommends mitigation in relation to these. I respond to each in turn.

Gaps in information

9.3 The Section 42A Report considers there is insufficient information (such as no cultural values assessment and some uncertainty on timing of works) on some construction and operational aspects of the Freight Hub upon which to accurately assess the severity of social effects.³³

9.4 I agree that if more detailed information had been available and cultural values assessments, it would have provided greater certainty on the level of social effects, both in terms of the geographic area of impact and scale of impact. I also consider that some of these are matters of detail that are not always available at this early stage of an NoR process. My assessment recognised this by applying a conservative approach to the area and scale of impact, and focussing the mitigation on reducing uncertainty, as described earlier in my evidence. There are also a suite of conditions requiring detailed management plans that will provide additional detail at appropriate stages, and will require appropriate processes to be followed.

9.5 The Section 42A Report questioned some assumptions applied to my assessment, stating that they are uncertain. In summary:³⁴

- (a) whether landscaping will largely take place and have matured by the commencement of construction;
- (b) whether noise mitigation will be in place before construction and largely sufficient to address levels of noise generated by the Freight Hub; and
- (c) whether sequencing and staging of construction will occur in the order set out in the AEE.

³³ Section 42A Technical Evidence: Social Impacts, dated 18 June 2021, at paragraph [17].

³⁴ Section 42A Technical Evidence: Social Impacts, dated 18 June 2021, at paragraph [18].

- 9.6 These are not assumptions, but are aspects of the NoR that I identified as being uncertain and for that reason I recommended mitigation. For example, my assessment stated:³⁵

where appropriate, commence mitigation screening and planting prior to construction so the construction site is screened as much as possible from public viewing areas prior to works beginning, and so noise and visual mitigation is effective in time for the site becoming operational.

- 9.7 This recommendation is reflected in the following conditions:

- (a) Landscape and Design Plan – the proposed timing for any landscape or visual amenity planting to maximise mitigation planting coverage prior to construction of the main buildings and / or operation of the Freight Hub where practicable with opportunities through the Community Liaison Forum for feedback on management plans, including the Landscape and Design Plan and the design principles and outcomes that plan seeks to achieve;
- (b) Construction Management Plan – details on the timing of the installation of screening and planting and opportunities where this can be undertaken prior to works commencing.

Adequacy of local community impact

- 9.8 The Section 42A Report considers that the Bunnythorpe community within the local impact area should have a separate focus (the area circled in red in Appendix A of the report). I believe I have appropriately considered Bunnythorpe community.
- 9.9 The circled area reflects the main township of Bunnythorpe I refer to in my assessment, particularly in relation to the community's vision for the area. I consider that the summary of different social effects across different geographic areas provided in Map 3 (Appendix 1 of my evidence) is appropriate to illustrate the variation in different social effects anticipated at different locations. I am also mindful that there are differing perspectives as to where the boundary of Bunnythorpe extends (where to define 'Bunnythorpe community'). For example, information from engagement exercises indicated that some residents in the more rural and rural-residential areas towards

³⁵ Technical Report J Social Impact Assessment, dated 20 October 2020, at section 6.5, page 34.

Palmerston North / Kelvin Grove identify with Bunnythorpe, whereas others do not.

9.10 The Section 42A Report identifies three aspects of effects on the Bunnythorpe community where our conclusions on the scale of impact differ:³⁶

- (a) Bunnythorpe community character – I applied an overall rating of moderate negative on the character of the local impact area, whereas the Section 42A Report gave a moderate-high negative rating for Bunnythorpe.
- (b) Bunnythorpe community's way of life during construction – I applied an overall rating of low-moderate negative during construction in the local impact area, whereas the Section 42A Report gave a moderate-high negative rating for Bunnythorpe during construction.
- (c) Bunnythorpe cemetery – in considering the effect of the Freight Hub on the main community facilities, I concluded that the effect on the cemetery would be negligible. The Section 42A Report disagreed.

9.11 With the exception of Bunnythorpe cemetery, I consider my initial assessment of the scale of effects to be appropriate. In coming to this view, I have reviewed the evidence of other technical specialists that contributed to my conclusions on character, as well as the perspectives of submitters.

9.12 In terms of Bunnythorpe cemetery, I acknowledge that while the noise effects are not considered to disturb services, the effect may be greater than I originally concluded when the Freight Hub is operational. I acknowledge that the change in noise level will affect the "feel" of the cemetery. This will be better understood as more detailed noise modelling and mitigation is undertaken and cultural values assessed.

Response to recommended conditions

9.13 The Section 42A Report includes a number of recommendations for mitigation (including conditions). I address these in turn.

Extend the lifetime of the complaints register

9.14 The Proposed Conditions require a complaints register to be in place until 12 months after the Freight Hub commences operation. The Section 42A Report

³⁶ Section 42A Technical Evidence: Social Impacts, dated 18 June 2021, at paragraphs 40, 42 and 48.

notes this will not cover the full build out of the Site and recommends it be an ongoing requirement.

- 9.15 The purpose of the complaints register is to provide a mechanism for the community to raise construction related issues as they arise. While other phases of construction will occur after the Freight Hub starts operating, KiwiRail's corporate complaints process will be in force (starting from the time the Freight Hub starts operating) and will take the place of the construction related complaints register. The Community Liaison Person also provides a mechanism by which the community can raise complaints on construction matters (as enabled by the Proposed Conditions).

Include more specificity about the Community Liaison Forum

- 9.16 The Section 42A Report recommends additional specificity regarding the Community Liaison Forum. I summarise and respond to each point as follows:

- (a) *Include a list of organisations or sectors of the community that should be invited to participate.* I agree this would provide certainty about the range of community members that should have the opportunity to be part of the forum. I consider that local residents, businesses and community organisations, together with mana whenua representatives be included (as listed in my assessment and the Section 42A report).³⁷ As a point of clarification, the forum will not have a prescribed membership with limited numbers of representatives for each organisation as per the traditional Community Liaison Group model. It is intended to be a forum (possibly online, in person, or a combination) that will be available to any organisation or individual throughout the design and construction phase as / when they determine it relevant to them. In this regard, it would be useful to clarify the processes for identifying who may wish to be involved and the format for engagement. The Proposed Conditions attached to Ms Bell's evidence address these matters.
- (b) *Extend the responsibilities of the forum to include inputting into design outcomes and any urban or landscaping plans, particularly in respect of staged development and timing and nature of mitigation works.* I believe this matter is addressed in the Proposed Conditions. The purpose of the forum is to provide a two-way flow of information

³⁷ Technical Report J Social Impact Assessment, dated 20 October 2020 at page 33 and Section 42A Report Technical Evidence: Social Impact, dated 18 June 2021, at paragraph [59(a)].

on construction and operational matters, and the Community Liaison Forum specifically enables forum participants to provide feedback on all draft management plans that are required with each outline plan. These plans are listed in the Proposed Conditions and include landscape plans and construction-related plans.

- (c) *Provide the forum with the opportunity to review and give feedback on each stage of construction and operation.* I believe that this matter is addressed by Proposed Conditions relating to the Community Liaison Forum, together with an amendment to the Proposed Conditions to ensure the forum applies to the full construction (as I discuss next). My understanding is that each phase of construction will require an outline plan and associated management plans, and as I have mentioned above, the forum will have an opportunity to provide feedback on these.
- (d) *The Community Liaison Forum should apply in perpetuity or until the community representatives confirm the Site is in its final form.* One of the principal reasons for establishing a forum is to address the current uncertainty around the staging of the main phases of construction through to the full design, and the design of specific structures / features relevant to those stages. Therefore, I agree that the Proposed Conditions should be amended to apply across the main construction phases (until completion of all main components of the Freight Hub), and the timeframe should similarly be extended for the Community Liaison Person. I consider the Proposed Conditions attached to Ms Bell's evidence address this point.
- (e) *Once operational the forum should meet annually, but may meet more or less frequently where the forum deems this necessary / appropriate.* The frequency of the forum will change depending on the stages of design, construction and operation, and in response to unanticipated matters. Flexibility is therefore required. I have reviewed the relevant Proposed Condition consider that the wording "at least ...12 months during operation" provides this flexibility [emphasis added].
- (f) *Where the forum has provided input to a management plan, it has the opportunity to review whether the implementation of that plan has been undertaken in accordance with outcomes identified in a Design Framework.* The forum has the opportunity to provide feedback on design and construction matters as they evolve. If a strategic /

design plan becomes a requirement of the NoR, then I consider it appropriate that this would extend to feedback relevant to the framework (I discuss this next).

Require a Design Framework

- 9.17 The Section 42A Report recommends the development of a design framework that sets principles and outcomes for the Site. The purpose is to have a guiding document that will inform design, construction and operation as specific parts of the Site are developed over time. The report specifies the types of principles to include.³⁸
- 9.18 As I have outlined earlier, addressing uncertainty is a primary focus of the social impact mitigation. The requirement for KiwiRail to establish a community liaison forum in which it provides information on the stages and progress of the project, and enables participants of the forum to see and provide feedback on draft management plans as the design and construction develops, is key to this mitigation.
- 9.19 I also see value in having some form of strategic / design plan that provides clarity for the community on:
- (a) *what they can expect to see and experience* – for example, a plan that illustrates the full build out contemplated for the Site, as well as the design principles that underpin it and will guide future detailed design and management plans. I have not considered the specific matters listed in the Section 42A report in detail (as summarised in footnote 38 below), but from a social impact perspective they would be a useful starting point
 - (b) *when they can expect to see it* – for example, the staging of construction and the relationship of this to the outline plan of works, associated management plans, and resource consent applications

³⁸ The principles are: integrating the Freight Hub with its immediate and wider landscape setting; maximising beneficial outcomes for natural and rural character and visual amenity; maintaining and/or enhancing amenity values; noise mitigation that has regard to visual amenity, outlook, privacy and landscape character; lighting design that has regard to visual amenity, landscape character and the night sky; building and structure design; community identity and place; community connectivity through and around the site; pedestrian and cycle access around the site and to/from the Bunnythorpe community area; reflecting cultural values (Section 42A Technical Evidence: Social Impacts, dated 18 June 2021, at paragraph [66]).

- (c) *how and when the community can contribute* – for example, engagement principles and the requirements for engagement as set out in relevant conditions and management plans.

- 9.20 In terms of the timing for producing a strategic / design plan, I believe it would be an appropriate focus for early sessions with the community liaison forum.
- 9.21 In my opinion, Ms Rimmer's recommendation to broaden the Landscape Plan to a Landscape and Design Plan (which would include setting design principles and outcomes), together with the opportunity for the community to provide feedback on this plan through the community liaison forum, will help the community understand the design process for the Freight Hub and provide opportunities to shape that process.

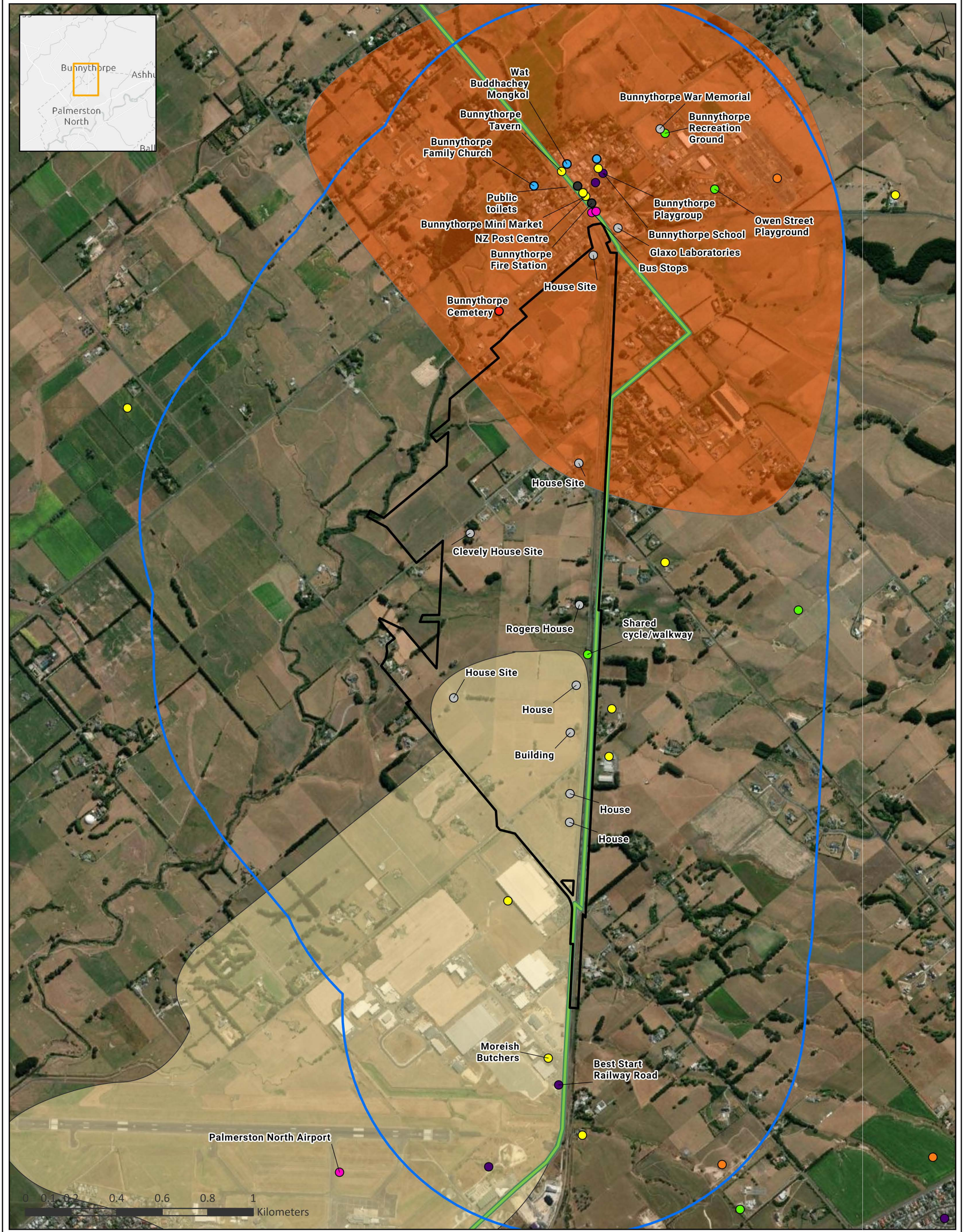
Undertaking a Cultural Values Assessment and reflecting these values in the design

- 9.22 The Section 42A Report notes the lack of a Cultural Values Statement to inform the NoR and recommends a Cultural Values Assessment be undertaken, with the outcomes of this assessment reflected in the design framework and management plans.
- 9.23 I have not been involved in KiwiRail's engagement with mana whenua and this is addressed in Ms Poulsen's evidence. KiwiRail has committed to continuing to work with mana whenua to determine an acceptable way forward, which includes agreeing on opportunities for mana whenua values to be expressed in the design and development of the Freight Hub, as indicated by the Proposed Conditions. For these values to effectively influence the design, the timeframes and relationships between the various design and management plan processes will need to be co-ordinated and clearly communicated.

Kirsty Austin

9 July 2021

Appendix 1 – Maps of the local impact area

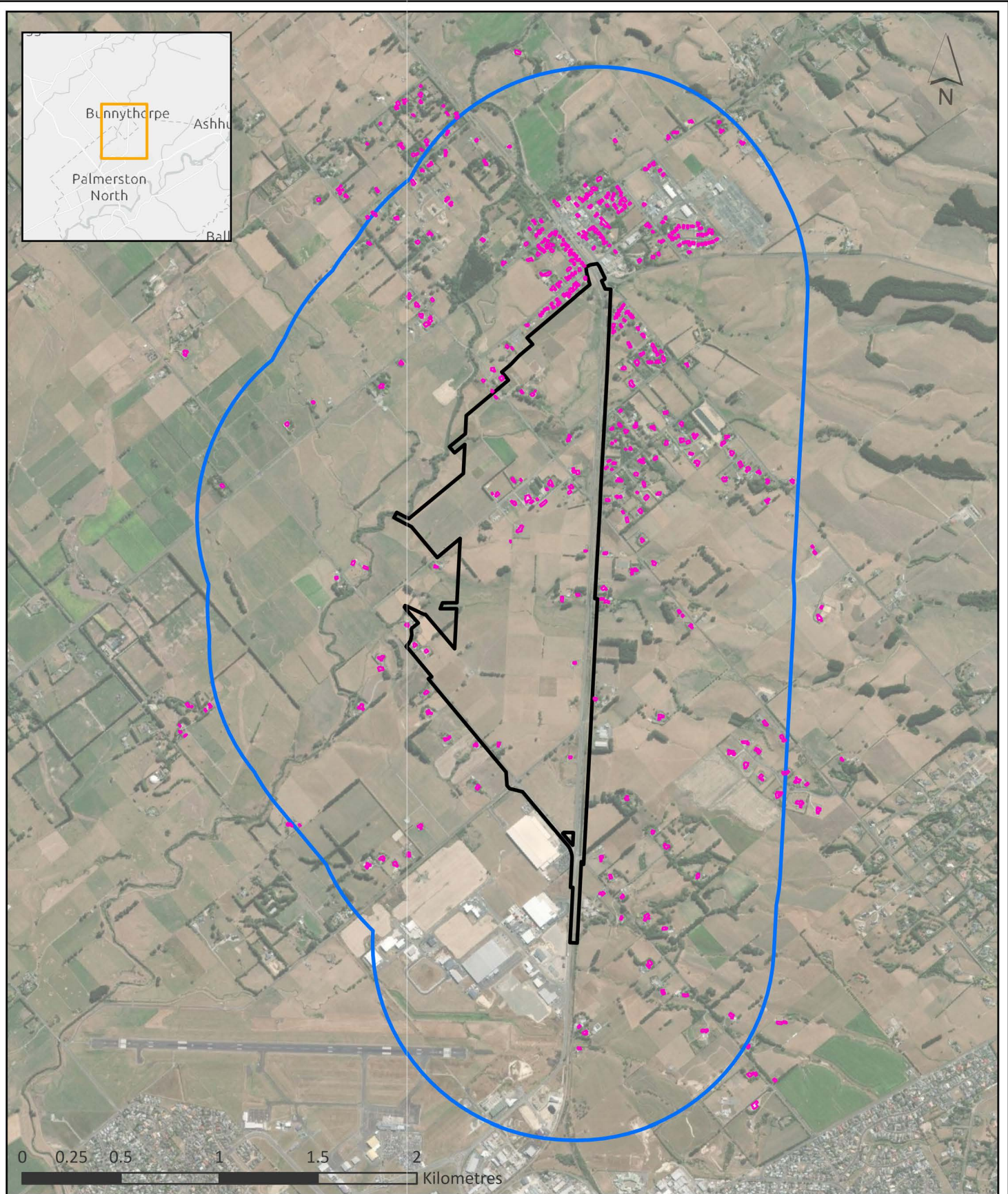


Map 1 : Community Facilities
Within the Local Impacted Area

Data Sources: Palmerston North City Council, Walking Access, Stantec
Baseemap Service Credits: Earthstar Geographics, LINZ, Stats NZ, Eagle Technology, Esri, HERE, Garmin, FAO, METI/NASA, USGS
Map displayed in NZGD 2000 New Zealand Transverse Mercator coordinate system.
Author: CW
Reviewed by: CD
Review date: 4/2/21
Project Code: 310003007

- | | | |
|---|--------------------|---|
| Services/Activities | Education | KiwiRail Designation Boundary |
| ● Cultural/Historic | ● Cemetery | Local Impact Area |
| ● Designation, substation, transmitter mast | ● Other Facilities | Industrial Area (Indicative) |
| ● Commercial | ● Public Transport | Bunnythorpe Village (Indicative) |
| ● Recreation/Leisure | ● Te Araroa Trail | |
| ● Place of Worship | | |

This document has been prepared based on information provided by others as cited in the data sources. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

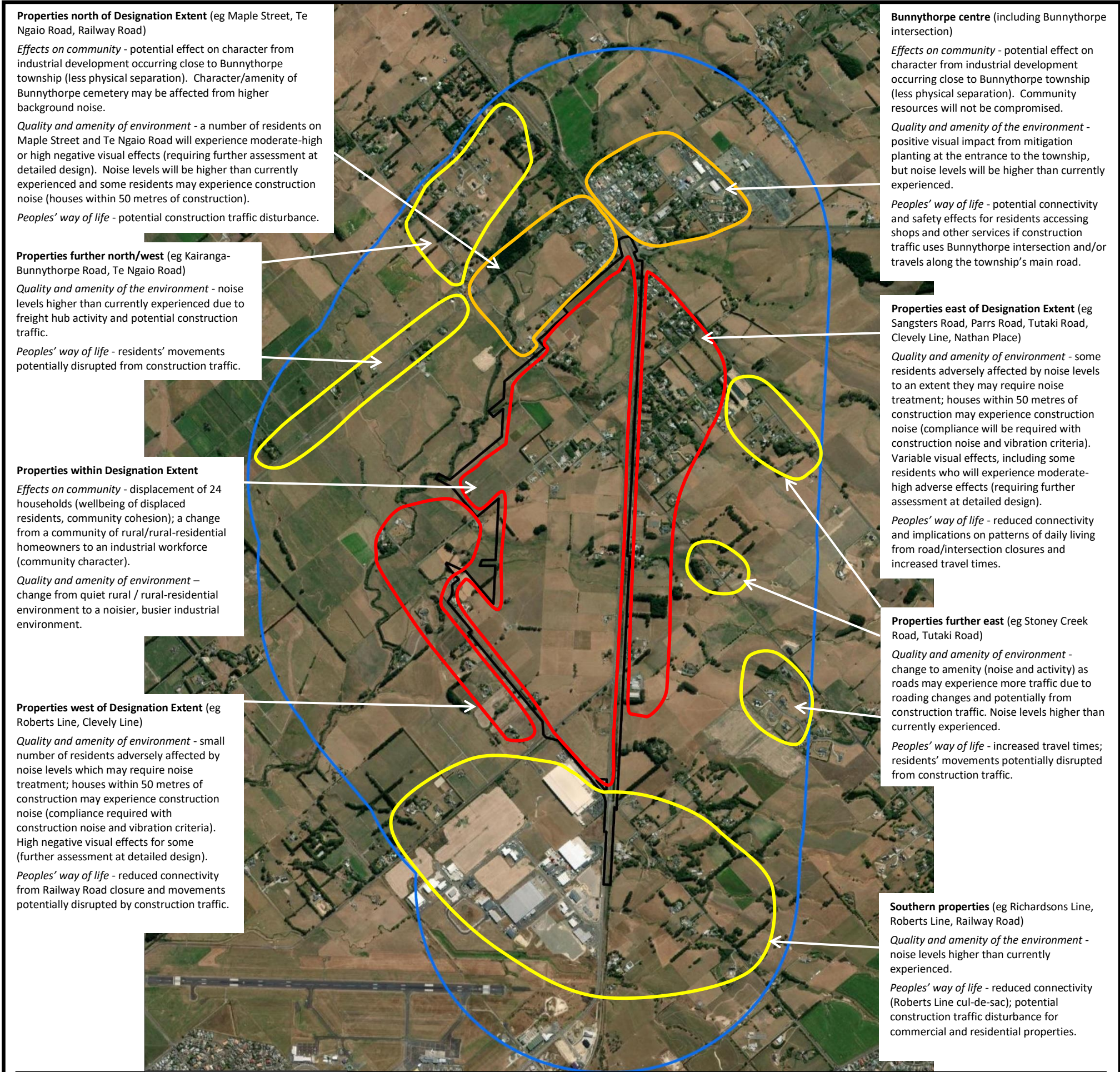


Map 2 - Residential Dwellings Within the Local Impacted Area

Data Sources: Palmerston North City Council, LINZ, Stantec
 Basemap Service Credits: Earthstar Geographics, LINZ, Stats NZ, Eagle Technology, Esri, HERE, Garmin, FAO, METI/NASA, USGS
 Map displayed in NZGD 2000 New Zealand Transverse Mercator coordinate system.
 Author: CW
 Reviewed by: CD
 Review date: 4/2/21
 Project Code: 310003007

- Residential Dwellings (431)
- KiwiRail Designation Boundary
- Local Impact Area

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Map 3 – Comparison of social impact across the local impact area

- Designation boundary
- Local impact area

Relative level of impact within the local impact area:

Higher

Lower

All boundaries are indicative and for illustrative purposes only.
Version 2

Appendix 2 - Submissions relevant to social impacts

Submission	Submission	Submission
1 Sonia and Neal Watson	32 Richard John Kibby	71 Darren Green
2 Warren Bradley	33 Linda Spearpoint	72 Danelle O'Keeffe and Duane Butts
3 Aorangi Papakainga	34 Stuart Robinson	73 Horowhenua District Council
4 Bruce and Alison Hill	35 Robyn Curtis	74 Arthur George Park
6 Glen & B Karen Woodfield	36 Helen S Thompson	75 Ian & Andrea Ritchie
7 Rochelle & Rex McGill	37 Ian Harvey	76 Athol & Florence (Flo) Gibson
9 Jim Jefferies	38 Logan Harvey	77 William John Bent
10 Timothy Te Wake	39 Letitia Stick	79 Kate McKenzie
12 Central Economic Development Agency	40 Gerry Rose & Gill Frampton	80 Riana Carroll
13 Tutaki 2019 Ltd	41 Warrick George	81 Dianne M C Tipene
15 Maree Woods	42 Matthew McKenzie	82 Christina Jeanne Holdaway
16 Martin Jones	43 Nick Turner	83 Gordon H Malcolm
17 Nicola Schreurs and Thomas Good	44 Mereti Taipana	84 Raewyn Carey
18 Kevin and Yvonne Stafford	47 Aaron Fox	85 Carole Ann and Anthony Booth
19 Janet Susan Stirling	50 Kevin and Erina Carroll	86 June Irene Hurly
20 Horizons Regional Council	51 Manawatu District Council	87 Mary & Michael Hurley
21 Ian Alexander Shaw	52 Jeff Williams	88 Corinne J Dingwall
22 Fiona Hurly	53 Raewyn Margaret Eastwood	90 Justine Jensen
23 Mike Tate	55 Michael Sharp	91 Steve Michael Kinane
24 Zaneta Park	57 John Austin and Rosaleen Wapp	92 Ministry of Education
25 Andreas Johannes Hofman	59 Joanne Kathrine Whittle	93 Craig Forbes
26 Peter Hurly	61 Peter Gore and Dale O'Reilly	94 MidCentral DHB Public Health Service
27 Helen and Pita Kinaston	62 Mary Anne Chapman	95 Owen Leonard Reid
28 Katrina George	64 Sharon Lee Gore	97 Anonymous
29 Tomas Burleigh Behrens	66 Andrew Wotton	98 David Odering
30 Bunnythorpe Community Committee	68 Friederike Lugt	
31 Courtney Kibby	70 Renee Louise Thomas-Crowther	

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

**STATEMENT OF EVIDENCE OF RICHARD PALING
ON BEHALF OF KIWIRAIL HOLDINGS LIMITED**

ECONOMICS

1. SUMMARY

- 1.1 Increasing the efficiency and capacity of intermodal freight facilities in the Palmerston North area through the construction of the Freight Hub will provide a range of economic benefits. These benefits will accrue both to Palmerston North and the surrounding area but also more widely to the extent that the new facilities support more efficient longer distance train movements and encourage the transfer of freight from road to rail with the consequent social and environmental benefits
- 1.2 The economic benefits include both direct impacts on the costs of the movement of goods and also indirect development impacts as firms adjust their operation to take advantage of the new opportunities that the Freight Hub provides. This evidence considers both these direct and indirect impacts.
- 1.3 The proposed Freight Hub's significance needs to be considered within the broader national context of rail in New Zealand, as outlined in the 2021 New Zealand Rail Plan ("**Rail Plan**"), the desire by Central Government to encourage the use of rail for the movement of freight in order to reduce the climate change effects of transport, and also the social and other environmental costs of the movement of freight by road.
- 1.4 These national objectives are also supported by a range of local plans and initiatives. At a more local level the Freight Hub would support the role of Palmerston North as the major distribution centre for the Lower North Island

with a catchment area reaching from Taranaki and Hawke's Bay down to Wellington. Because of this role, logistics plays a relatively large and rapidly growing role in the local economy and efficient logistics would also support producers in the area sending their outputs, mainly of primary products, for export. The new facilities would address the emerging shortages of capacity in container handling and would also help facilitate the use of longer more efficient trains.

- 1.5 I have identified a range of potential impacts from the provision of the new Freight Hub. Positive impacts include:
- (a) improved freight handling and reduced transport costs;
 - (b) impacts associated with freeing up the Existing Freight Yard;
 - (c) potential for new development in the vicinity of the Freight Hub; and
 - (d) impacts on local businesses including those in the North East Industrial Zone ("**NEIZ**").
- 1.6 Some potentially negative impacts include:
- (a) access to the workforce; and
 - (b) effects on access to existing firms in the vicinity of the Freight Hub.
- 1.7 Overall, in my opinion, the benefits of the development and operation of the Freight Hub in this location are positive.

2. INTRODUCTION

- 2.1 My full name is Richard Snowden Paling. I am an independent transport and economics consultant at Richard Paling Consulting. I hold the qualifications of a BSc (Economics with Statistics) from the University of Bristol in 1972 and a Masters degree (Transport Economics) from the University of Leeds in 1974.

Experience

- 2.2 I have 45 years of experience as a transport economist and transport planner, providing technical analysis and direction in the development and assessment of projects covering almost the entire range of modes within the transport sector. I have worked in a number of countries around the world. I

moved to New Zealand in 2004 and in 2005 set up my own company, Richard Paling Consulting, of which I am a director.

- 2.3 Since moving to New Zealand in 2004 I have been involved in a wide range of transport projects throughout the country and have undertaken a number of studies developing innovative approaches to address transport problems and issues. Of particular relevance to the Freight Hub, I have been involved in a number of studies looking at the wider effects of transport investment and work in the freight sector, which I describe below.

Research on the wider economic effects of transport investment

- 2.4 When I first moved to New Zealand, I was involved in a range of initial studies which focused on developing processes to help understanding the possible linkages between transport provision and economic development. As part of that work I was the co-author of several publications for the Ministry of Economic Development in 2006 and 2007.¹ This initial work was subsequently refined and now forms an integral part of the economic evaluation procedures used in New Zealand for the appraisal of transport projects. This is set out in detail in the Waka Kotahi / New Zealand Transport Agency Monetised Benefits and Costs Manual ("**MBCM**").² The development of the initial framework was followed by a number of studies applying these techniques, particularly in Auckland,³ where the initial modelling was developed, and was also applied more widely, for example, in the Roads of National Significance ("**RoNS**") and a number of other major transport projects.⁴
- 2.5 In addition, the recent focus of the Provincial Growth Fund ("**PGF**") in providing funding for transport projects in regional New Zealand has required the establishment of assessment approaches which enable the economic development impacts of individual transport investments to be assessed on a broadly consistent basis. To address this issue, I have developed approaches to assess these impacts in a quantitative manner and have

¹ Williamson J, Paling R Staheli R and Waite D *Assessing Agglomeration Impacts in Auckland Phase 2* MED Occasional Paper 08/06 2008; Williamson J, Paling R Staheli R and Waite D *Assessing Agglomeration Impacts in Auckland Phase 2* MED Occasional Paper 08/06 2008.

² Section 3.10 Monetised Costs and Benefits Manual (MBCM), Waka Kotahi 2020.

³ Paling R and Williamson J *Wider economic Impacts of the Waterview Connection*, for Transit New Zealand 2007.

⁴ Appendix C Roads of National Significance Economic Assessments Review, SAHA for NZ Transport Agency 2010.

applied these in studies, including upgrading SH2 and SH35 in Tairāwhiti and the Twin Coast Discovery Route in Northland.

Involvement in other freight studies

- 2.6 I have undertaken a wide range of freight related work across New Zealand. I was the technical lead for the National Freight Demand Study in 2008⁵ and the subsequent two updates in 2014⁶ and 2019.⁷ I have also undertaken a range of regional and local freight studies, including in relation to the provision of facilities for freight in connection with the development of intermodal logging hubs in Southland, and a more general assessment of the potential for developing similar facilities for logs and other commodities across the South Island.⁸

Involvement in the Freight Hub

- 2.7 I was engaged by Stantec in 2019 to provide advice on the economic development and wider economic effects associated with the Freight Hub to assist in the preparation of the Assessment of Environmental Effects Report ("**AEE**") and to support the NoR.
- 2.8 I provided technical input into the preparation of the multi criteria analysis ("**MCA**") and decision conferencing workshops considering the possible development impacts of alternative locations for the Freight Hub, including the assessment and scoring of the various options against the background of the freight position in the area.
- 2.9 I prepared the Analysis of the Potential Economic Development and Wider Economic Impacts of the New Regional Freight Hub in Palmerston North ("**Economic Assessment**") that was included with the AEE.
- 2.10 I also provided input to KiwiRail's section 92 response dated 15 February ("**First Section 92 Response**"). This included matters relating to:

⁵ Richard Paling Consulting et al *National Freight Demands Study, September 2008* for Ministry of Transport, NZ Transport Agency and Ministry of Economic Development.

⁶ Deloitte in association with Richard Paling Consulting, Murray King & Francis Small Consultancy and Cooper Associates *National Freight Demand Study 2014* for Ministry of Transport.

⁷ Richard Paling Consulting, Murray King & Francis Small Consultancy and EROAD Limited *National Freight Demand Study 2017/18* for Ministry of Transport.

⁸ <https://www.ecan.govt.nz/your-region/living-here/transport/regional-transport-planning/south-island-regional-transport-committee-group#ImplementationPlan>.

- (a) the positive and negative economic development impacts of the Freight Hub on users of the hub;
- (b) the positive and negative economic development impacts on businesses and residents located in the vicinity of the Freight Hub;
- (c) an assessment of the local and national economic benefits from the increased freight capacity at Palmerston North and any associated reductions in costs resulting from the provision of the Freight Hub; and
- (d) an assessment of the potential positive economic effects which may result from the land, which is currently occupied by the Existing Freight Yard, becoming available for alternative use(s).

2.11 I provided input to KiwiRail's section 92 response dated 28 May 2021. This included matters relating to:

- (a) the modelling surrounding the data and assumptions used to generate economic impact estimates; and
- (b) the expected economic benefits of 1500m trains if introduced post-2050.

Code of conduct

2.12 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

3.1 This statement of evidence will:

- (a) provide an overview of the value of rail and the Freight Hub in terms of its importance to Palmerston North and the wider economy;
- (b) outline the existing freight patterns at the Existing Freight Yard and the projected patterns;
- (c) outline the forecasted future freight patterns;

- (d) explain key conclusions of the analysis of the potential economic impacts of the Freight Hub;
- (e) respond to the submissions received that relate to the economic effects of the Freight Hub; and
- (f) address relevant matters raised in the Section 42A Report.

4. VALUE OF RAIL AND THE FREIGHT HUB

- 4.1 The proposed Freight Hub's significance needs to be considered within the broader context of rail in New Zealand, as outlined in the Rail Plan⁹ and other strategic objectives at a national, regional and local level to support the use of rail in New Zealand.

The New Zealand Rail Plan

- 4.2 The Rail Plan published in April 2021 identifies "Investing in the national rail network to restore freight rail and provide a platform for future investments for growth" as a Strategic Investment Priority. It recognises that rail is an integral part of New Zealand's freight supply chain and helps ensure resilience by providing an alternative transport option for distributors and exporters. It provides strong positive social, economic and environmental benefits and looks to support growth in the regions through completing the rail investments committed by the Crown through the PGF. As explained in Mr Moyle's evidence, the Freight Hub has received funding through the PGF.¹⁰
- 4.3 An estimate of the benefits of the existing rail system in New Zealand is set out in the Value of Rail in New Zealand report ("**Value of Rail Report**").¹¹ In total the Value of Rail Report estimated a value of rail in 2020 of about \$1.7–2.1 billion. However, this report which updates earlier work for the position in 2015¹² does not separate out an estimate of the benefits relating to the movement of freight. The earlier work estimated these benefits to amount to about \$350 million per year. The composition of this and the comparison with the earlier totals is as follows:

⁹ <https://www.transport.govt.nz/area-of-interest/infrastructure-and-investment/the-new-zealand-rail-plan/>.

¹⁰ Evidence of Todd Moyle, dated 9 July 2021.

¹¹ EY (2021) *The Value of Rail in New Zealand* Report for the Ministry of Transport February 2021.

¹² EY (2016) *The Value of Rail in New Zealand* – 2016 For the NZ Transport Agency.

Table 4.1 Estimates of the "Value of Rail" 2015 (\$m)		
Benefit category	Total for all users	Freight only
Reduction in emissions	9	6
Reduction in congestion	1,367	204
Safety savings	65	58
Maintenance savings	65	79
Total	1,505	347

- 4.4 The benefit of \$347 million from the movement of freight can be compared with the total freight movements in 2015 of about 4.5 billion net tonne-kms ("ntkms") giving an average "value of rail" equivalent to about \$0.08 per ntkm. The higher totals included in the most recent work indicate that the value of the freight component is likely to have increased but no estimate of this is available from the published material. On the assumption that the share of the total benefits which resulted on the movements of freight remained similar to the position estimated for 2015, the total would increase to about \$400 – \$500 million per year.
- 4.5 The Value of Rail Report also identifies other non-quantified benefits from the existing rail network. These include:
- (a) Connectivity benefits – the ability of rail to connect people to work, social activities, and other people. For freight, connectivity between ports and regional suppliers / businesses, resulting in better connections for imports and export routes.
 - (b) Land use and value uplifts – these can arise when land in close proximity to train lines and trains stations experiences an uplift in value. The Value of Rail report also notes that uplift can also be experienced by industrial / commercial properties as well but to a smaller degree in comparison to residential properties. Not all businesses that rent or own the property will be able to use the rail line productively and generate returns from it.
 - (c) Resilience benefits for the transport network – for example rail provides an alternative route in the event of traffic congestion, a natural disaster or storm event which disrupts travel by road. In the Christchurch earthquake, for example, rail provided resilience by supplementing the road network for the transport of goods to the

affected areas, and in the Kaikōura earthquake rail was used to assist in the reconstruction of the main north-south highway.

Alignment of the Freight Hub with national, regional and local strategic objectives

- 4.6 The Freight Hub in Palmerston North can be viewed against the background of the Central Government's objective to improve the performance of the rail system.¹³ The enhancement of rail facilities forms one of the key elements in the Rail Plan and the KiwiRail Statement of Corporate Intent for 2021-2023, which identifies the opportunities for KiwiRail to play a greater role in supporting economic activity in New Zealand. Further detail on the Freight Hub's alignment with the Government Policy Statement on Land Transport 2021 is outlined in the evidence of Ms Bell.¹⁴
- 4.7 As part of moves to make rail more attractive to potential users, the need has been identified to provide increased capacity for rail freight interchange in the Palmerston North area in order to serve the growing needs of the lower North Island. As the Cabinet Paper on the KiwiRail Palmerston North Regional Economic Growth Hub notes:¹⁵

KiwiRail's current Palmerston North Freight Yard is now surrounded by urban development. Remaining on this site will not allow for expansion to accommodate predicted national freight growth and does not align with Palmerston North City Council's strategic rezoning plans. Lack of connectivity to new industrial areas, double handling, rail infrastructure restraints on train sizes, and an inability to meet some time critical requirements limit rail freight handling capabilities at the existing site.

Securing a site in the NEIZ to develop an upgraded, future-proofed Regional Economic Growth Hub would best position KiwiRail and its freight partners to efficiently and sustainably deliver on New Zealand's growing freight demands for the next 50 to 100 years. The NEIZ has been developed as a key location for New Zealand's rail freight in central New Zealand taking freight from north, south, east and west, supporting planned roading infrastructure in the area with its proximity to airfreight and complementing overall regional transport initiatives. The site is:

¹³ Government Policy Statement on Land Transport 2021
<https://www.transport.govt.nz/area-of-interest/strategy-and-direction/government-policy-statement-on-land-transport-2021/>

¹⁴ Statement of evidence of Karen Bell, dated 9 July 2021.

¹⁵ Provincial Development Unit KiwiRail Palmerston North Regional Economic Growth Hub 5 November 2018.

- Centrally located in relation to the large North Island import ports
- Near the Wellington regional population
- Well situated to handle the flow of import goods south through the North Island (from Auckland to Wellington).

4.8 The Regional Growth Study, commissioned by Central Government in 2015, in consultation with Horizons Regional Council and the district and city councils, identified opportunities to help realise the Manawatu Region's economic potential.¹⁶ One of the enablers identified in the study covers distribution and transport and the Manawatu-Whanganui Economic Action Plan notes that:¹⁷

...the region has a mature transport network but with specific future requirements:

Efficient and well-serviced hubbing. The region needs to have the capacity to efficiently collect, package and redistribute product – and in so doing, reduce costs and increase the speed associated with getting products to market, when compared to other international suppliers.

4.9 Achieving this would allow the city to take advantage of its location at the centre of rail and road networks which go toward all four points of the compass and so contribute to the region's economic development.

The strategic role of Palmerston North and the wider Manawatu-Whanganui region

4.10 Palmerston North city has developed as an important logistics hub with facilities serving the distribution and transport of freight across the lower North Island. The lower North Island is an area with a current population of 1.03 million, which is approximately 22 per cent of New Zealand's population (2018 Census) and with a similar proportion of the country's gross domestic product ("**GDP**"). Palmerston North's role as a logistics hub has been supported by its central location in the lower North Island and its location at a transport cross-roads for rail and road. Both the main east-west rail lines from Taranaki and Hawke's Bay and the main north-south NIMT connecting Auckland with Wellington and the South Island transit through the Region. State Highway 3 and State Highway 1 also intersect in the Region.

¹⁶ <https://www.growregions.govt.nz/regions/manawatu-whanganui/>

¹⁷ <https://www.accelerate25.co.nz/>

- 4.11 The Manawatu-Whanganui Region is also an important producer of primary products destined for overseas export markets, many of which are transported to New Zealand's ports by rail for export. These may be in the form of products exported with little processing, such as logs, or in the form of more complex and higher value manufactured products particularly from the meat and dairy industries.
- 4.12 For logs in particular, because of the relatively low value of the product and the length of the hauls to the export ports of Napier or Wellington (190 kms and 140 kms respectively from Palmerston North), transport costs can have a substantial impact on the returns achieved by growers, amounting to up to about 20-25 per cent of the total typical export value of \$160 per tonne.¹⁸ As a consequence reductions to the overall cost of transporting goods for export can have particular economic benefits to the forest owners in the area. For other higher value products where transport costs are much lower as a proportion of the total export price, the quality of the service offered and the reliability of the service is probably more important, although savings in transport costs would potentially accrue to producers.
- 4.13 Given the Freight Hub's role as a potential link in the distribution chain for goods moving into and out of the Manawatu Region, improved rail services and handling facilities clearly have an important role to play in supporting these key activities and enhancing regional economic development both in Palmerston North and the wider region.
- 4.14 In my opinion, a new Freight Hub in Palmerston North will have a positive impact on the economy of the Palmerston North and wider area. This assessment considers the types of these economic impacts which are likely to arise and assesses their broad scale. There will also be broader positive impacts for the New Zealand economy as whole which are discussed in the evidence of Mr Colegrave.¹⁹

Importance of logistics to Palmerston North and the wider regional economy

- 4.15 The benefits from the reduction in freight costs and other improvements to the quality of service for goods handled at the Freight Hub will have a particular impact on the economy of the Palmerston North area because of the importance of the city as the major distribution hub for the southern North

¹⁸ Based on 2018 figures derived from The Ministry of Primary Industries website <https://www.mpi.govt.nz/news-and-resources/open-data-and-forecasting/forestry/wood-product-markets/>

¹⁹ Evidence of Fraser Colegrave, dated 9 July 2021, at Section 4.

Island. Logistics represents an important activity in the Palmerston North area, reflecting its location in the centre of the lower North Island and at the crossroads of a number of major road and rail routes. This has been recognised in the Palmerston North City Council ("**PNCC**") Long Term Plan 2018-2028 which states:²⁰

As a major freight and logistics hub for the lower North Island, we already shift six times the freight of Taranaki and two and a half times as much as Wellington. Developing our infrastructure will enable even greater opportunity in this critical sector.

4.16 At a more detailed level, the importance of distribution and logistics activities to the Palmerston North economy to which the Freight Hub would contribute, is emphasised in the relatively high shares of employment in the key distribution and logistics. Using the most recent statistics for 2020,²¹ activities associated with logistics made up almost 10 per cent of the employment in Palmerston North City, compared to about 8 per cent nationally. This represents a share of local employment that is more than 20 per cent higher than the national position.²²

4.17 The shares by activity for Palmerston North and New Zealand as a whole are set out in Table 4.2.

Table 4.2 Employment in transport and logistics related activities in Palmerston North and New Zealand 2020 (percentage of total employment)		
Type of activity	Palmerston North	New Zealand
F Wholesale Trade	6.7%	5.0%
F33 Basic Material Wholesaling	0.8%	1.0%
F34 Machinery and Equipment Wholesaling	1.5%	1.3%
F35 Motor Vehicle and Motor Vehicle Parts Wholesaling	1.0%	0.4%
F36 Grocery, Liquor and Tobacco Product Wholesaling	2.7%	1.3%
I461 Road Freight Transport	1.5%	1.3%
I471 Rail Freight Transport	0.3%	0.0%
I51 Postal and Courier Pick-up and Delivery Services	0.6%	0.4%
I53 Warehousing and Storage Services	0.3%	0.3%
Total logistics related activities	9.4%	7.0%

4.18 In addition to being an important part of the local economy, growth in many of the subsectors related to logistics has been relatively high in recent years

²⁰ <https://www.pncc.govt.nz/council-city/official-documents/plans/10-year-plan/>

²¹ Statistics New Zealand Business Demographics Database for 2020.

²² These figures supersede those for 2019 provided in earlier versions of this evidence.

with growth in these activities being about higher than for New Zealand as a whole. Growth has been particularly high for the movements associated with groceries and supermarkets, where employment has grown by almost a third since 2015. Improvements affecting distribution and logistics are therefore likely to have a relatively high impact in the Palmerston North area. The growing logistics activities in Palmerston North include distribution centres serving regional and national markets.

- 4.19 As well as the distribution of inbound goods to markets in the lower North Island, the logistics activities in Palmerston North also form part of the supply chains supporting the outbound movements of goods produced in the region. The districts surrounding Palmerston North are important producers of manufactured food products, particularly meat and dairy products. Employment in these sectors accounts for more than 10 per cent of the total for the surrounding areas of Manawatu and Rangitikei, and with a similar level of employment but a smaller proportion of the total workforce in Palmerston North.²³ Much of this output particularly of dairy and meat products is destined for overseas markets and efficient supply chains supporting these movements are therefore important. Rail using the Existing Freight Yard plays an important role in the movement of these products and improved services would benefit exporters.
- 4.20 The other important product from the area is logs destined for overseas markets. For this commodity transport, costs can make up a high proportion of the delivered costs at the export port. Minimising these costs is an important factor in achieving an adequate return to the grower and encouraging the longer-term sustainability of the industry with the resulting benefits for carbon capture supporting Central Government's broader climate change objectives.

5. EXISTING TRAFFIC AND FORECASTS

Existing freight traffic through the Existing Freight Yard

Introduction

- 5.1 The Existing Freight Yard is an important part of the logistics chain in the Palmerston North area and is a centralised distribution centre for freight, providing for:

²³

Statistics New Zealand Business Demographics Database for 2020.

- (a) the redistribution of freight travelling from Auckland / Wellington or the South Island to local areas via local rail;
- (b) the distribution of freight to local areas via road; and
- (c) the transfer of goods to rail for commodities produced in the Manawatu-Whanganui region, especially those destined for export.

5.2 The inbound movement of goods supports the role of Palmerston North as a major distribution centre for the lower North Island, while the outbound movement of goods primarily supports the movement of the primary products generated in the region for export to overseas markets.

5.3 Within the broader area surrounding the Manawatu-Whanganui Region, there is a smaller rail hub at Longburn mainly serving the needs of the industries located adjacent to it and with a focus on milk and dairy products and other chilled or frozen commodities.

Goods movements through the Existing Freight Yard

5.4 The volumes of goods handled at the Existing Freight Yard in 2019 amount to about 0.7 million tonnes, mainly comprising the outward movement of logs and other agricultural products for export and the inward movement of manufactured and retail goods for local and regional distribution. These account for almost all of the total movements inbound and reflect Palmerston North's role as the major distribution centre for the lower North Island with a catchment area stretching as far north as Taranaki and Hawke's Bay. Details of these are set out in Table 5.1 below.

Table 5.1 Main freight flows through the Palmerston North Existing Freight Yard 2018 / 2019 (000 net tonnes)			
	Outbound	Inbound	Total
Dairy	3.5	0.0	3.5
Logs	280.1	0.0	280.1
Manufactured and retail items	35.9	303.8	339.7
Meat	31.0	0.0	31.0
Other agriculture	3.2	0.0	3.2
Other	1.7	3.1	4.8
Steel and aluminium	0.0	6.1	6.1
Total	355.5	313.1	668.6

5.5 Between 2018 and 2019 the volumes handled through the terminal increased by about 6 – 7 per cent, mainly driven by increases in the volumes of the

major commodities, logs outbound increasing by 10 per cent and manufactured goods inbound increasing by 9 per cent.

Through traffic at the Existing Freight Yard

5.6 As well as handling the transfer of goods between road and rail, the Existing Freight Yard at Palmerston North also handles the marshalling of the wagons passing through the area. In this context, the Existing Freight Yard serves a number of rail traffic flows from the north, south, east and west. The key flows include:

- (a) Auckland to Wellington and the South Island (and return);
- (b) Whareroa to Auckland (dairy);
- (c) Whanganui to Wellington and north;
- (d) Other traffic to and from New Plymouth;
- (e) Gathering traffic from nearby stations to ship onwards, especially to the north (Pahiatua, Longburn, Marton);
- (f) Karioi to Napier (pulp); and
- (g) Other traffic to and from Napier.

5.7 In total, the traffic associated with these through movements (as distinct from the freight transferred between road and rail at the Existing Freight Yard) amounted to about 2.2 million tonnes in 2019, about 13 per cent of the total freight carried by rail across the country.²⁴ This represents an increase of about 20 per cent over the traffic recorded for 2018. Given the range of destinations served by the through services, improvements to the marshalling for these movements at the Freight Hub and associated reductions in costs would therefore have widespread positive economic impacts over the rail network and its customers across the country.

5.8 Combining this with the traffic transferred between road and rail at the Existing Freight Yard, the total rail freight including both through movements and traffic to and from Palmerston North would therefore amount to about 2.8 million tonnes per year.²⁵

²⁴ Extracted from confidential data from KiwiRail on freight flows on the rail network.

²⁵ Extracted from confidential data from KiwiRail on freight flows on the rail network.

- 5.9 The number of train movements through the Existing Freight Yard amounts to about 12,000 per year in 2018 or about 45 per day. Of these, about 10,000 would start or stop at the Existing Freight Yard. The details of these are set out in the Concept Design Report at Section 5.²⁶

6. FREIGHT PATTERNS AND FORECASTS

- 6.1 The movement of goods through the Existing Freight Yard can usefully be considered within the context of the overall movements of freight both nationally and into and out of the Manawatu-Whanganui region. The forecasts of these provide an indication of the future markets in which rail will be involved, either maintaining or increasing their market share for key commodities.

National freight patterns

- 6.2 The revised National Freight Demand Study from 2017 / 2018 ("**NFDS**")²⁷ and the use of the associated Ministry of Transport Future Freight Model²⁸ gives a total growth in national domestic freight movements of about 45 per cent over the period from 2017 / 2018 to 2052 / 2053. These forecasts have been produced subsequent to the earlier estimates that are included in the Master plan for Intermodal Freight Hubs in New Zealand ("**Master Plan**") and now make an allowance for the updated population projections to 2048 available from Statistics New Zealand.²⁹ The revised NFDS and associated projections based on the Ministry of Transport model forecast a total national freight demand of 411 million tonnes in 2052 / 2053, compared to the earlier Masterplan forecasts of 393 million tonnes in 2050. I note that the Council's economist Mr Vuletich agrees that my forecasts are generally consistent with the outputs of the Ministry of Transport model and NFDS.³⁰
- 6.3 However, although the total forecast future freight demand has remained broadly unchanged from that forecast in the Masterplan, there are differences in the growth patterns for the different commodities. In particular there is expected to only be limited growth in primary agricultural products balanced by increased flows of building materials and manufactured goods.

²⁶ Technical Report A dated 23 October 2020, at page 23.

²⁷ "National Freight Demand Study 2017/18" Ministry of Transport September 2019

²⁸ <https://www.transport.govt.nz/statistics-and-insights/transport-outlook/sheet/updated-future-state-model-results>.

²⁹ Statistics New Zealand SubNational Population Projections 2018-2048.

³⁰ Section 42A Technical Evidence of Shane Vuletich, dated 18 June 2021, at paragraph [90].

- 6.4 While the movements of milk and dairy products are likely to remain broadly constant in volume terms, a major feature of the forecasts is the scale of the log harvest and the extent to which this will be utilised for domestic production. The supply of logs is volatile and fluctuates both in response to the potential availability of trees of a suitable age for felling and to the level of demand and potential pricing on international markets. The forecasts in the NFDS over the longer term are derived from the Wood Availability Forecasts published by Ministry of Primary Industry.³¹ These forecasts indicate substantial changes over time reflecting the availability of trees for harvesting and the likely intentions of the forest owners with a substantial decline in the volumes of logs harvested in the decade of the 2040s.
- 6.5 Although the position is expected to improve with increased log harvests over the later 2050s, the forecasts of the total log harvest and the flows of logs for export for 2052 / 2053 are below the levels currently being harvested and transported in New Zealand. Given the volatility of production, there is uncertainty with these forecasts and the levels of output that would arise beyond the forecasting period. Over the longer term, beyond this date, it is likely that with the current measures being supported by the Government with the proposals to plant a billion trees,³² the volumes harvested and potentially transported through the Rail Freight Hub in the latter half of the century will increase above the levels predicted for 2052. The expected decline in log traffic to 2052 predicted in the NFDS represents a change from the assumptions in the Masterplan which assumed continued growth in this traffic.
- 6.6 Regional growth forecasts for the Manawatu-Whanganui region have been derived from the Ministry of Transport Future Freight Model³³ now updated to take account of the revised population and regional GDP projections. These have been used to give estimates of the possible changes in the demand for movement through an intermodal freight facility in Palmerston North, whether this is the Existing Freight Yard or the proposed new Freight Hub at Bunnythorpe.

³¹ Wood Availability Forecasts for the different regions in New Zealand are available at <https://catalogue.data.govt.nz/dataset/wood-availability-forecasts>

³² <https://www.mpi.govt.nz/forestry/funding-tree-planting-research/one-billion-trees-programme/about-the-one-billion-trees-programme/>

³³ <https://www.transport.govt.nz/statistics-and-insights/transport-outlook/sheet/updated-future-state-model-results>

- 6.7 The implications of these regional growth figures for the Freight Hub are set out in Table 6.1.³⁴

Table 6.1 Forecast growth in the main freight demands through the main Palmerston North Freight Hub 2018 / 2019 – 2052 / 2053 (000 net tonnes)									
	Outbound			Inbound			Total		
	Flow in 2018 / 2019	Growth from 2018 / 2019	Flow in 2052 / 2053	Flow in 2018 / 2019	Growth from 2018 / 2019	Flow in 2052 / 2053	Flow in 2018 / 2019	Growth from 2018 / 2019	Flow in 2052 / 2053
Manufactured & retail items	35.9	26%	45.3	303.8	44%	437.5	339.7	42%	482.7
Other exc logs	39.5	1%	39.8	9.2	55%	14.3	48.7	11%	54.1
Total exc logs	75.4	13%	85.1	313	33%	451.8	388.4	38%	536.8
Logs	280.1	-71%	81.3	0.0	NA	0.0	280.1	-71%	81.3
Total	355.5	-53%	166.4	313.1	44%	451.8	668.6	-8%	618.1

- 6.8 For the main containerised and wagon load traffic flows particularly of manufactured and retail goods transported to the distribution centres in Palmerston North, the freight traffic through the Freight Hub is forecast to grow fairly substantially by 2052 / 2053. This largely reflects the increases in population and GDP now forecast for the Manawatu-Wanganui Region with the updates to the earlier population projections by Statistics New Zealand.
- 6.9 The forecasts in Table 6.1 for the Freight Hub assume distribution patterns into and out of the region and the shares of these movements transported by rail similar to those currently in operation. As a result, the forecasts do not take into account changes in these patterns that might happen over time and changes in the shares of the markets which might be captured by rail (for example, as a result of moves by the Government to address climate change), especially with an improved facility. The provision of improved intermodal logistics provided by the new Freight Hub could provide an opportunity for improving rail's competitive advantage, increasing the share of rail in the markets it is already serving, and also possibly expanding into new markets. This expansion into new markets could be particularly important for the rapidly growing movement of building materials identified above. For these commodities the flows into the region are forecast to increase by up to 90 per cent up to 2052 generated by the increases in population and

³⁴ Consultants analysis using Ministry of Transport Freight Futures model <https://www.transport.govt.nz/statistics-and-insights/transport-outlook/sheet/updated-future-state-model-results>

economic activity now forecast for the Manawatu-Whanganui region. While these are not carried to any significant extent into the region at present they are moved by rail in other areas. This would increase the volumes of commodities travelling by rail through Palmerston North and help in the achievement of both KiwiRail and the Central Government's objectives for the development of more sustainable transport outcomes. The forecasts in Table 6.1 may therefore be conservative.

7. ASSESSMENT OF ECONOMIC EFFECTS

Scope of the analysis

- 7.1 The economic effects on the community arise where the Freight Hub would impact the level of employment and economic activity in the Palmerston North area. In addition to these more local economic impacts on the community in Palmerston North and the surrounding area, there are also wider national economic impacts that would arise from the construction of the new Freight Hub and associated activities. These include improvements to the general competitiveness of rail relative to road, encouraging a shift in the modes used to transport freight and contributions to the Central Government's environmental and sustainability objectives.³⁵
- 7.2 While I have assessed some of the economic impacts in monetary terms, this is generally only indicative. While recognising that these broad impacts would exist, the main focus of my assessments and evidence has been on the particular economic development effects in the Palmerston North area although some consideration has been made of the direct benefits over the wider areas served by trains using the Freight Hub. Further discussion of the wider economic benefits of the Freight Hub is included in the evidence of Mr Colegrave.³⁶

Categories of impacts

- 7.3 The factors considered when assessing the economic development impacts of the Freight Hub comprise:

³⁵ These are not easy to quantify comprehensively for the Freight Hub since in many cases the effects rely on the actions of third parties, which are uncertain.

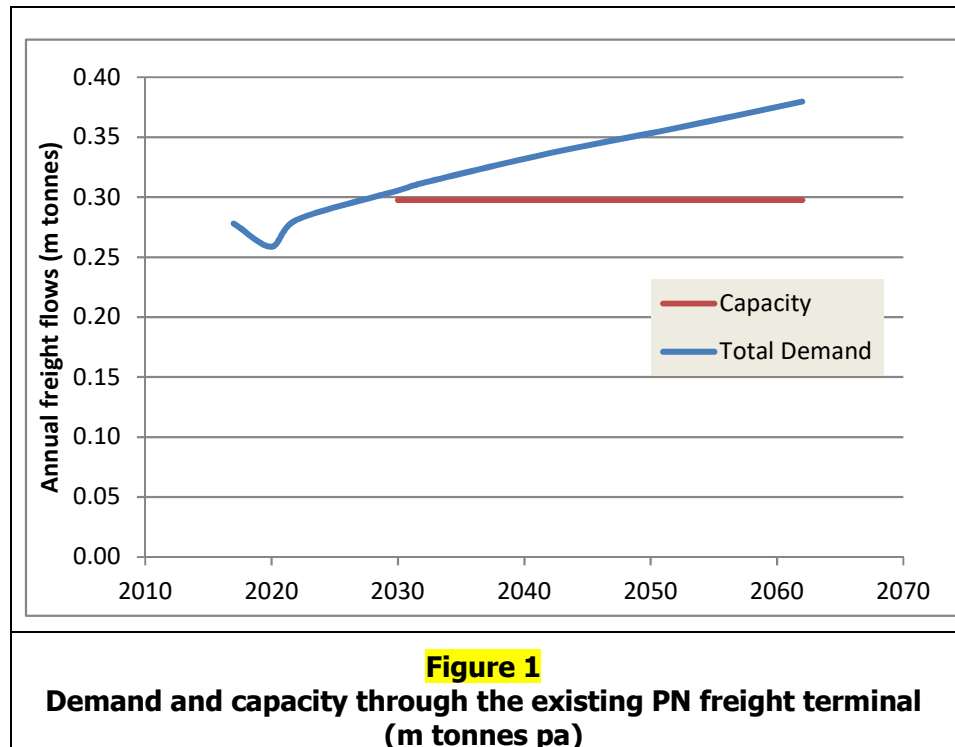
³⁶ Evidence of Fraser Colegrave, dated 9 July 2021, at Section 4.

- (a) impacts on users of the Existing Freight Yard in Palmerston North and surrounding area (eg through improved freight handling and reduced transportation costs);
- (b) impacts associated with freeing up the land currently occupied by the Existing Freight Yard;
- (c) potential for new development in the vicinity of the Freight Hub;
- (d) impacts on local businesses including those located in the NEIZ;
- (e) access to the workforce;
- (f) impacts on access to existing businesses in the vicinity of the Freight Hub;
- (g) impacts on Bunnythorpe; and
- (h) an assessment of the benefits from the cost savings and forecast transfer of traffic to rail for areas other than Palmerston North.

Impacts for existing users in the Palmerston North area

Increase in cost efficiencies and competitiveness

- 7.4 The new Freight Hub will improve the efficiency of the location of the Freight Hub ("**Site**") handling of freight during intermodal traffic transfer to or from rail at the Site and will help overcome emerging capacity issues with the Existing Freight Yard as the demands increase over time with the growth of the local economy. Capacity of the Existing Freight Yard is expected to be reached by 2030. This is illustrated in Figure 1, showing the growing shortage of capacity as the demand grows over time.



- 7.5 The Freight Hub will also provide for the handling of longer trains to, from or passing through the Site, which will in general improve the costs and quality of the rail services. These positive effects will encourage a modal shift resulting in more freight being transported by rail (rather than by road) giving wider community benefits. The effects of these two elements are considered below in paragraphs 7.10.
- 7.6 As set out in Section 4 of my evidence, the Freight Hub aligns with a number of national and local strategies. This alignment is likely to ensure that the development of the Freight Hub and associated activities will be supported by the local authorities in the area. In turn this will help to ensure that the best use is made of the asset supporting its role in regional development in Palmerston North and the surrounding area.
- 7.7 Other complementary measures to increase the use of rail and enhance the role of the Freight Hub include steps to improve track capacity. The provision of additional capacity to allow the more efficient operation and dispatch of freight trains in the Auckland area will help meet the timing requirements of services to the south. These would be supplemented by the purchase of new rolling stock to replace and augment the existing fleet. I note that a number of other improvements to the national network are already underway, as outlined in the evidence of Mr Moyle.³⁷

³⁷

Evidence of Todd Moyle, dated 9 July 2021.

- 7.8 The efficiency impacts of the freight being handled on a larger site (compared with the site for the Existing Freight Yard), The Freight Hub will provide benefits from:
- (a) improved facilities for marshalling trains allowing the introduction of trains of up to 1500 m in length for the route between Palmerston North and Auckland compared to the current maximum of 900 m;
 - (b) improved and expanded handling facilities for goods transferring between road and rail for unitised cargos (either in standard export containers or in lighter intermodal units for the domestic market) overcoming constraints that are likely to arise with the continued growth of this traffic; and
 - (c) improved handling facilities for other products such as logs.
- 7.9 As a result of these improved handling facilities, the efficiency of the supply chain for goods moved in and out of Palmerston North will be improved, thereby reducing the costs of transport and improving the reliability of the rail service provided to users in the area. The benefits arising would accrue both in respect of freight movements to and from Palmerston North and also more generally for traffic on the key routes linking the upper North Island with the rest of New Zealand to the south. This would result in benefits to existing rail users and also by making rail more attractive, should attract freight traffic from travelling by road with the consequent environmental, crash reduction and congestion benefits.
- 7.10 I have undertaken a quantitative assessment of the benefits of the Freight Hub to reflect two of the main impacts of the Freight Hub.³⁸ These take into account the recently revised Statistics New Zealand projections of regional population growth and are therefore slightly higher than those set out in my earlier S92 responses. The two main impacts considered are:
- (a) the provision of additional capacity for container handling; and
 - (b) the ability to handle trains longer than the current maximum length of 900 m.

³⁸ An initial assessment of quantified benefits was made in KiwiRail's First Section 92 Response dated 15 February 2021. Following further analysis and information from KiwiRail the results were updated in KiwiRail's Third Section 92 Response dated 28 May 2021. These have subsequently been revised further to incorporate new regional population projections from Statistics New Zealand. As a result the estimates of the benefits have changed from those set out earlier in my technical assessment.

7.11 In summary:

- (a) The cost savings to users with the additional capacity at the freight terminal have been estimated on the basis of the additional costs that users wishing to use rail would face if they were forced to use the more expensive alternative of movement by road. These benefits to users are estimated to increase from about \$0.4 million in 2032 to \$2.5 million by 2062. The associated social and environmental benefits from the reduction of emissions and reduced crash and congestion costs would grow from about \$0.3 million in 2032 to \$1.5 million in 2062.
- (b) The introduction of longer trains would allow savings in the operating costs associated with the movement of freight since trains can benefit from economies of scale as they get heavier. Because the additional amount that can be carried on an individual wagon is effectively constrained by the loading gauge and axle weight limits this means that the way to make trains heavier and achieve the economies of scale is to make them longer and increase train lengths from the current de facto limit of 900 m.
- (c) A detailed analysis has been undertaken which has considered the potential savings possible both in the terms of fuel costs and in the costs of drivers. This looked at evidence from overseas, particularly in relation to the fuel cost savings which could be up to 18 per cent. Taking into account this and other costs it was concluded that cost savings in the region of 9 – 12 per cent should be achievable.³⁹ The reduction in costs would not only benefit existing users but by making rail more attractive in relation to road would therefore result in some diversion of road traffic. Standard values from the MBCM have been used to assess the extent of this diversion.⁴⁰ In total these benefits are estimated to amount to about \$13 million in 2032 growing to about \$18 million by 2062.

7.12 Over a 60-year evaluation period for the Freight Hub, the benefits from the additional container handling capacity and use of longer trains from the outset are estimated to amount to about \$1.3 billion in total or about \$420 million NPV if discounted to the start of the project at the standard discount

³⁹ Further details of this have been set out in answer to question 2 in the Third Section 92 Response.

⁴⁰ MBCM Table 90.

rate of 4 per cent. These benefits do not take into account any measures by the Central Government or other agencies to encourage the use of rail further to help meet wider environmental and social objectives, such as addressing climate change. Of these, the direct benefits to Palmerston North traffic would amount to about 20 per cent and the benefits to the wider community from reduced environmental, crash and congestion costs would amount to about 40 per cent of the total.

- 7.13 While my analysis shows that additional capacity will be required to handle the forecast container movements after 2030, the timing of the introduction of longer trains is less certain. In practice, longer trains are likely to be introduced gradually over time. My analysis has shown that the sooner 1500 m trains are implemented the greater the economic benefits, but there are clear economic benefits from enabling trains that are longer than 900 m from 2030 onwards. The Council agrees that the need for the Freight Hub to provide for up to 1500 m trains has been demonstrated, even though the exact timing of the introduction of 1500 m trains to the rail network is uncertain.⁴¹
- 7.14 The direct benefits to Palmerston North freight traffic would include lower costs of transport movements to and from key markets. These savings would provide secondary opportunities and benefits to those sending goods through or for intermodal transfer at the Freight Hub or supporting these activities. This would also enhance the position of Palmerston North as a key distribution hub serving the lower North Island. This is likely to be reflected in increases in economic activities as industries using the Freight Hub respond to the reduced costs of transporting goods, either by achieving higher returns on their base output or using the opportunities arising from reduced transport costs to expand their activities.
- 7.15 The Freight Hub is also likely to provide opportunities for the local road haulage industry delivering these products to customers in the catchment area of the Freight Hub. There may be some reduced opportunities for longer distance road freight supplying the area from outside, particularly from Auckland, as some of this traffic is attracted to rail, although with the growth expected in the overall market for the movement of goods, it is likely that both road and rail freight movements would grow.

⁴¹ Section 42A Report, dated 18 June 2021, at paragraph [797].

- 7.16 In a series of interviews in Palmerston North with large freight generating companies in which I participated,⁴² one of the major freight forwarding companies indicated that they would probably relocate their business to be within the Freight Hub to gain the advantage of direct rail access into their premises. I consider it is likely that other similar businesses would take a similar approach. There would also be advantages for activities associated with the movements of goods located in the NEIZ adjacent to the Freight Hub. Based on current users, this would include the major distribution centres for Foodstuffs and the proposed development by Countdown in Alderson Drive. The Freight Hub would also be reasonably accessible to the other distribution centres located along Tremain Avenue and in Kelvin Grove and the presence of the Freight Hub is likely to attract other users to the NEIZ.
- 7.17 The improvements in freight services from the Freight Hub and more efficient supply chains for businesses located in the catchment area of the Freight Hub would also support local producing industries with a focus on export markets. This would be particularly important for those in the manufacture of food products, an activity which is important in the economies of Palmerston North and the surrounding areas.
- 7.18 The location of the Freight Hub further away from the existing activities in the city centre could have some adverse impacts on support activities based in the existing urban area that would be at a greater distance from their customers. Analysis of the outputs of the traffic model⁴³ has indicated that increases in travel distances and travel times are forecast to rise. The effect of this is however likely to be small and is likely diminish over time if the Freight Hub develops a sufficient level of activity to support the relocation of these activities to the Freight Hub or to a site adjacent to the Freight Hub.

Impacts associated with freeing up the Existing Freight Yard

- 7.19 While there are no firm plans for the redevelopment of the Existing Freight Yard, potential development options would be constrained by the site being between the NIMT and Tremain Avenue, a busy main road and by the potential contamination of the site which has been in use as a rail yard since

⁴² A series of interviews was conducted with key firms in the freight and logistics sectors in Palmerston North in August 2019. This included freight forwarders, transport and distribution companies and manufacturers of goods.

⁴³ The PNCC traffic model was used to analyse the traffic effects of the relocation of the rail freight hub to Bunnythorpe. This is described in detail in the Evidence of Mark Georgeson, dated 9 July 2021.

the 1960s. As a result, I consider that the site would likely be suitable for a range of light industry and commercial activities. This aligns with the current zoning of the site. My analysis has shown that the 20 ha site could typically support up to 250–500 workers.

- 7.20 On the basis of average figures for the area, these workers could contribute up to \$50 m per year to the GDP of Palmerston North. The broader impacts of freeing up the land at the Existing Freight Yard are discussed in Mr Colegrave's evidence.⁴⁴

Potential for new development in the vicinity of the Freight Hub

- 7.21 I have undertaken a qualitative assessment of the potential for new development in the vicinity of the Freight Hub. My analysis shows that the scale of activities potentially locating in the Freight Hub and the areas immediately surrounding could provide a critical mass for specialist suppliers in handling and logistics. This will encourage the relocation or new development of facilities to support these activities, with consequent increases in output and employment. The NEIZ zoning is suitable for industrial and commercial development and would provide opportunities to accommodate any new or relocated activities, allowing these to gain the benefits from the Freight Hub.
- 7.22 The use of NEIZ land for the Freight Hub means that less space would be available to be used by other businesses wishing to relocate to the area. However, Mr Colegrave's evidence is that the loss of some of the NEIZ land would be, at least partially offset by the release of the land occupied by the Existing Freight Yard.⁴⁵ In my view, the Freight Hub may also provide the opportunity for some businesses that would have otherwise located in the NEIZ outside the Freight Hub to take up opportunities within the Freight Hub itself.
- 7.23 Following on from my analysis above, the economic benefits arising from the potential for the Freight Hub to attract new businesses to the area include:
- (a) the impacts of increased employment for those living in Palmerston North and the areas to the north in the Manawatu district, particularly in Bunnythorpe and Feilding; and

⁴⁴ Evidence of Fraser Colegrave, dated 9 July 2021, at Section 4.

⁴⁵ Evidence of Fraser Colegrave, dated 9 July 2021, at Section 4.

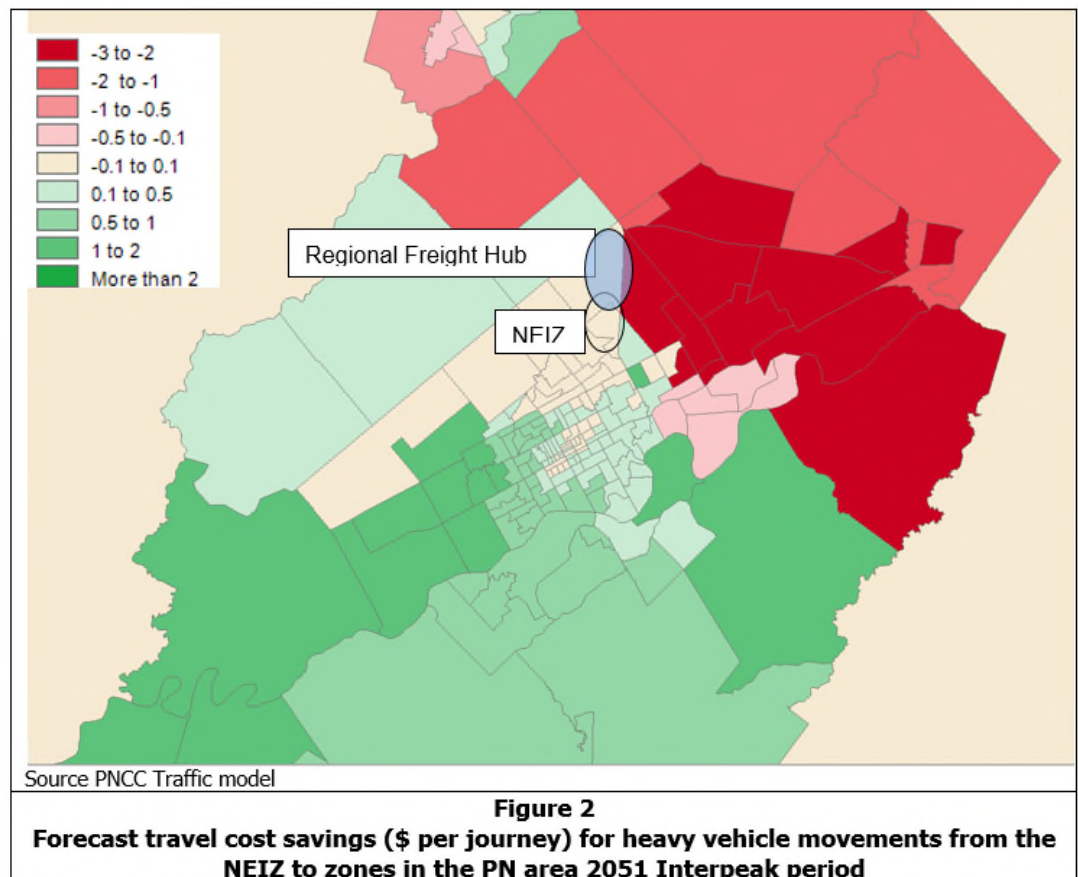
- (b) the benefits from a more integrated industrial structure with more support facilities located within or adjacent to the Freight Hub, potentially reducing the costs or increasing the attractiveness of business. These might include provision of specialist industrial services such as equipment supply and repair and other activities providing services to the workers in the Freight Hub.

Impacts on local businesses including those in the NEIZ

- 7.24 The employment in the Freight Hub of approximately 1000 or more workers over the long term and any further expansion of logistics activities in the NEIZ would provide opportunities for other businesses to relocate to the area to support the increased growth. These could range from the provision of specialist support services to support the businesses in the area (especially for the logistics industry), to the provision of activities in the area to service the social needs of those working in the area (such as cafes, childcare, and other personal services).
- 7.25 As an example of the effect that might be achieved, the breakdown of employment by industry in the existing NEIZ / Palmerston North Airport zone has been compared with that for the more developed Tremain Avenue area. In total, service activities in the Tremain Avenue area account for about 28 per cent of total employment in the area, compared to just 4 per cent in the existing NEIZ/Palmerston North airport area. This demonstrates the potential for the development of these types of activities from employment generated by Freight Hub and from activities subsequently attracted to the NEIZ.
- 7.26 In addition to the new market opportunities discussed above, there would also be changes in the general accessibility to their markets and suppliers for businesses located in the NEIZ. For firms sending or receiving goods by rail there would be better connections with the intermodal facilities in the Freight Hub. At present, the distance to the Existing Rail Yard on Tremain Avenue for firms located in the NEIZ is about 5 kms, involving travel through busy urban roads particularly along Tremain Avenue itself. These travel distances would be much shorter as a result of the development of the Freight Hub resulting in reductions in travel times and the overall costs of movement.
- 7.27 Accessibility from the NEIZ to other destinations within the Palmerston North area would on balance improve slightly with a reduction of average heavy vehicle costs in the interpeak period (when most journeys are undertaken) of

about 7 per cent, again improving the attractiveness of the area to serve the city as a whole, particularly the main urban area to the south and west.

- 7.28 The detailed pattern of changes in the estimated travel costs for heavy vehicles is set out in Figure 2 below.⁴⁶ This shows savings for journeys connecting to the main urban area to the south and west of the NEIZ, although with some increases in costs to the areas to the east and north.



Access to the workforce

- 7.29 The proposed Freight Hub lies at a greater distance from the existing residential areas of the workforce in Palmerston North. This will potentially

⁴⁶ This is based on an analysis of the position derived from the PNCC traffic model for 2051 comparing the travel time and distance differences for the fully built out 'with Freight Hub' and 'without Freight Hub' scenarios. As discussed in the transport First Section 92 Response dated 15 February 2021, in response to question 117 this contains the effect on the time taken for a particular trip once the Freight Hub is in place. The analysis in Figure 3 also includes changes in the distances travelled forecast by the model reflecting the closure of Railway Road and the provision of a perimeter route round the Freight Hub. The travel time and distance changes have then been evaluated using the parameters set out in the NZTA / Waka Kotahi MBCM to determine the impact on the total travel costs.

increase the commuting costs of workers travelling to the Freight Hub from the major urban area.

- 7.30 The Freight Hub is approximately 5 kms distance from the Existing Freight Yard. While this increased distance would not apply to all workers, there is the potential that the relocation could limit the workforce based in Palmerston North that might be available for employment in the activities in the Freight Hub. To some extent, this would be balanced by the opportunities for those living in locations in closer proximity to the Freight Hub in the smaller settlements of Bunnythorpe or Feilding. The outcome will depend on the range of skills offered by employees living at different locations that might be available for employment at the Freight Hub, as to the scale of the impact on the efficiency of operations.
- 7.31 In practice this effect is likely to be limited and would also be likely to diminish over time as workers relocated to be closer to their places of work.

Effects on access to existing firms in the vicinity of the Freight Hub

- 7.32 While in general as discussed above (at paragraph 7.1) the proposed development of the Site would support economic activities in the vicinity of the Freight Hub, Roberts Line would become the main access to the Freight Hub from the south. This and construction of the new Perimeter Road around the Freight Hub which would become a key link between the east of Palmerston North and Bunnythorpe as well as Feilding and areas to the north would impact on the activities currently located along Roberts Line, increasing the traffic flows along the road. These traffic flows are set out in the evidence of Mr Georgeson.
- 7.33 To the extent that access to properties on Roberts Line is made more difficult as a result, this may have the effect of making these businesses less attractive locations.
- 7.34 There is however the potential to develop measures which would mitigate these access issues are discussed in Mr Georgeson's evidence.⁴⁷

Effects on Bunnythorpe

- 7.35 For Bunnythorpe the main economic effects would be:

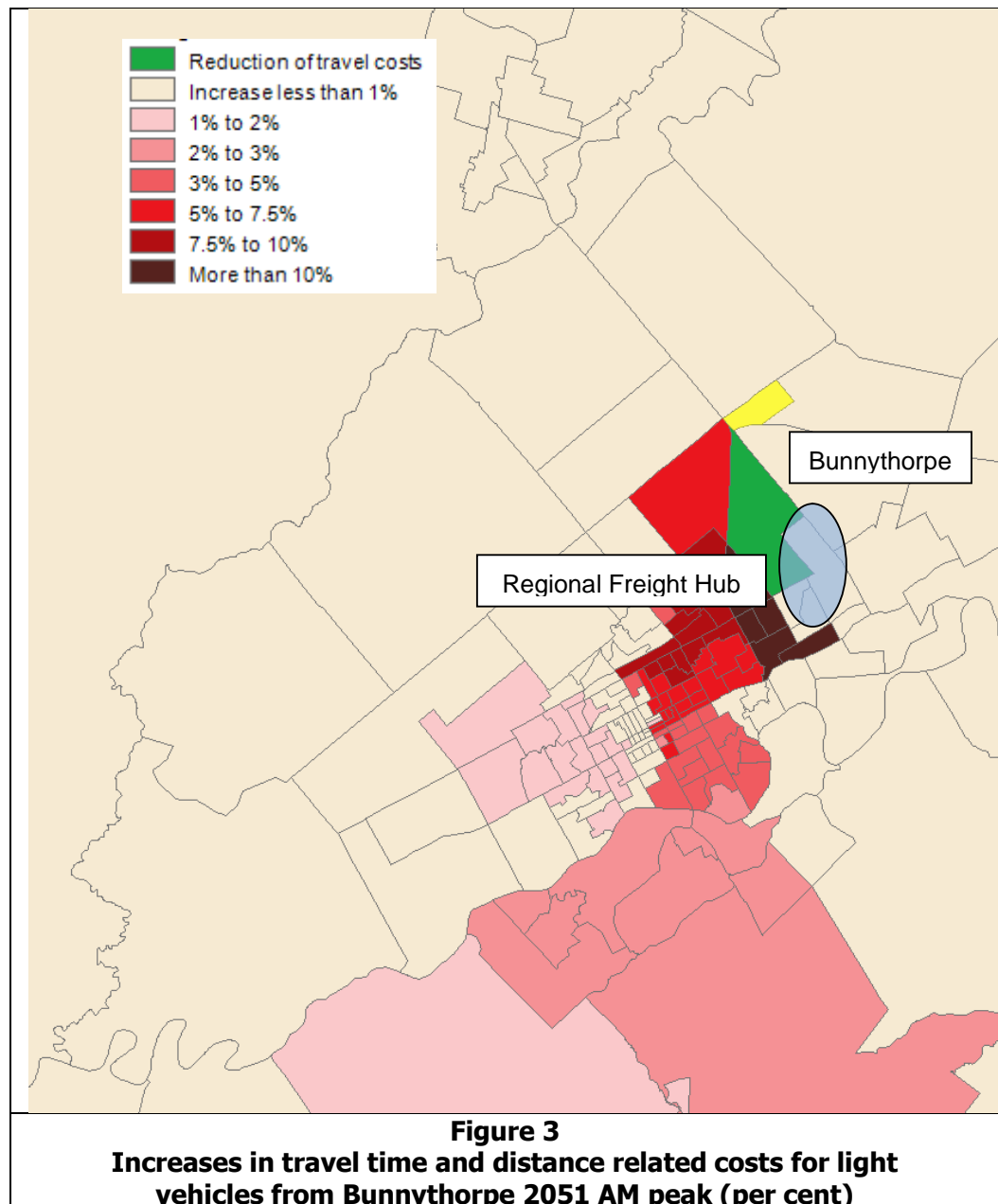
⁴⁷ Evidence of Mark Georgeson, dated 9 July 2021.

- (a) the availability of a major employment centre that would provide increased job opportunities for the residents of Bunnythorpe; and
- (b) some increases in travel costs to existing employment and other opportunities in the main Palmerston North urban area arising as a result of the changes to the roading network required to facilitate the Freight Hub and the effects of the additional traffic generated by the new facility and supporting activities. Reflecting this, using outputs from the PNCC traffic model (which have also been used for the Integrated Transport Assessment) it is estimated that in 2051 the total costs of travel (taking into account the value of the time spent as well as the vehicle operating costs) in the AM peak for Bunnythorpe residents travelling to these destinations will increase by about 3 per cent compared to the position if the Freight Hub is not constructed. These effects are illustrated in Figure 3.⁴⁸

7.36 It is important to note that the material in Figure 3 shows the changes in percentage terms, meaning a shorter trip will have a higher percentage increase than a longer trip with the same travel time increase. For example, a shorter trip from Bunnythorpe to the NEIZ will show a bigger percentage change because the delays to movements caused by the Freight Hub make up a greater proportion of the total trip time. By contrast, when compared to a trip from Bunnythorpe to say the Longburn area to the south, the delays caused by the Freight Hub make up a smaller proportion of the total trip time. As a result, the same increase in travel cost will not have as much of an effect on a longer trip as the increase is a smaller percentage change across the longer trip.

7.37 The percentage changes reflect the increased traffic flows, and longer travel routes immediately to the south of Bunnythorpe. It should be noted that these percentage increases will tend to decline as the overall distances and times for destinations further away from Bunnythorpe increase as described above.

⁴⁸ The results in Figure 3 are based on the changes in travel times for the AM peak, which are similar to those set out for the PM peak period in Table 2.1 of the Regional Freight Hub Section 92 Traffic Response February 2021. The use of the AM peak figures reflects the costs of accessing employment and other opportunities, rather than the return trip home.



- 7.38 In general, there will be an increase in travel costs to all destinations to the south as a result of the closure of part of the existing Railway Road, construction of the new perimeter road, and the increased volumes of traffic on the routes linking Bunnythorpe to the main urban area identified by the PNCC traffic modelling. For the most part these cost increases are relatively small (in the order of 2.5 per cent or less), although as noted above larger percentage increases are forecast for many of the shorter trips in the vicinity of the village to the south. These larger percentage increases however would be for journeys which would potentially gain the benefits of the substantial increase in employment opportunities with the Freight Hub just to the south of Bunnythorpe.

Impacts away from Palmerston North

- 7.39 In addition to the benefits for the Palmerston North and surrounding area, there would also be wider benefits to other rail users from the reduction in rail costs with the use of longer trains and to the community in general with the transfer of traffic from road to rail in response to these cost changes. Based on my Third Section 92 Response but taking into account the revised population projections these benefits to the wider area away from Palmerston North are estimated to amount to a total of about \$0.7–1.0 billion or about \$150–340 million if discounted to the start of the project, depending on the time at which longer trains are assumed to be operating.

8. RESPONSE TO SUBMISSIONS

- 8.1 I have reviewed relevant submissions relating to the economic effects of the Freight Hub. and the following main themes have been identified:⁴⁹

- (a) support for the Freight Hub and its economic benefits;
- (b) economic and freight forecasting including the impacts of Covid-19; and
- (c) lack of integration with industry.

Support for the Freight Hub and its economic benefits

- 8.2 A number of submissions support the Freight Hub and recognise the wide range of economic and associated benefits it will provide. These benefits would include:

- (a) Increased investment and economic activity as the role of Palmerston North as a regional distribution hub is enhanced;
- (b) Increased employment both directly from the Hub itself and from new and expanded activities responding to the enhanced opportunities that the Hub will generate; and
- (c) Reduced transport emissions as more traffic is moved by rail.

⁴⁹ The relevant submissions are Nicola Schreures and Thomas Good (17), Aaron P Fox (47), Darren Green (71), Danelle O'Keefe and Duane Butts (72), Mike Tate (23), Zaneta Park (24), [Anonymous submitter 97], Accelerate 25 Manawatu-Whanganui (56), Central New Zealand Distribution Hub Stakeholder Group (63), Waka Kotahi (65), Michael Sharp (55), and Foodstuffs North Island (58).

Economic and freight forecasting including the impacts of Covid-19

- 8.3 Some submitters have raised concerns with the projected freight forecasting and economic benefits associated with the Freight Hub.
- 8.4 I do not agree that the economic benefits are solely dependent on traffic transferring from road to rail. The evidence suggests that while improvements in the costs and level of service of rail operations will lead to a transfer of freight movements from road to rail and these have been identified using the relationships set out in the MBCM⁵⁰ there will also be benefits to existing rail traffic from the benefits of improved handling facilities for containers and other intermodal movements at the Hub for existing users and from the benefits arising from the use of longer trains facilitated by the Hub.
- 8.5 The reductions in the costs with improved container handling and the use of longer trains made possible with the Freight Hub would provide KiwiRail with the potential to reduce its charges to its customers. The extent to which this would eventuate would depend on market conditions but in the light of the continuing competition with road freight and the desire by the Government to maximise the use of rail for the movement of freight, it is likely that all, or at least almost all, of the anticipated cost savings would be passed on in order for rail to be competitive against the road alternative.
- 8.6 This would result in the considerable benefits to users and to the wider community which have been identified in the quantitative analysis and discussed above in paragraphs 6.19–6.21. In relation to a concern that the freight forecasts are flawed, the freight forecasts and associated economic models have been based on an assessment of the current position and then its projection to the future using fairly conservative assumptions. In particular these have assumed that there will be only limited growth in the movement of primary agricultural products through the Freight Hub, reflecting a continuation of existing patterns and discussions with industry stakeholders.
- 8.7 The forecasting assumptions are in line with those adopted by the Ministry of Transport in its Freight Outlook model, updated to take account of the most recent population projections by Statistics New Zealand as outlined above. The base forecasts for rail freight assume a continuation of the current modal shares, which may be a conservative position given the Central Government's objective of transferring additional freight from road to rail to meet the environmental and safety benefits of the switch and its contribution

⁵⁰

MBCM Table 99.

to climate change objectives. It is also likely to be conservative in the light of growing shortages of drivers which may limit the extent to which the road transport industry may be able to take up the opportunities associated with the growing freight task.⁵¹

- 8.8 Some submitters have raised concerns that the impacts of Covid-19 will affect the patterns of demand for freight. While this has clearly had an impact on many parts of the economy, its effects on the exports of primary products and also supermarket sales have been limited. There has also been little discernible impact on the demand for building materials with the construction industry continuing to grow strongly. In general, these industries are currently in a fairly buoyant state and are placing increasing demands on the transport sector, with the potential for transfer to rail at a level higher than incorporated in the steady state BAU assumptions used for the appraisal. While long term forecasts are necessarily uncertain, the current state of the market and the conservative approach taken to the forecasting would suggest that these predictions are relatively robust and that Covid-19 is likely to have a negligible impact on freight demand over the longer term operation of the Freight Hub.

The impacts of changes in truck technology on modal shift to rail

- 8.9 Some submitters have raised concerns that improvements in truck technology will make road freight more competitive with rail and so will reduce the extent to which traffic might divert to rail.
- 8.10 It is recognised that developments in technology will affect both road and rail freight movements in the long term. While there have been trials for the management of road freight movements by the use of platooning (vehicles travelling in groups being managed by the lead truck) which reduces fuel costs, these types of development will be challenging to implement. In the New Zealand context they will be particularly difficult to implement because of the types of narrow and winding roads and long distance routes used by road vehicles operating in the same markets as the longer distance rail services which would benefit from the Freight Hub.
- 8.11 A matter raised in submissions is the introduction of electrically powered trucks. While some tentative steps have been taken in this direction mainly

⁵¹

References include:

- <https://www.newshub.co.nz/home/money/2021/01/trucking-industry-desperately-short-of-drivers.html>
- <https://truckjournal.co.nz/driver-shortage-still-a-pressing-issue-for-industry/>

for urban delivery services⁵² the challenges of developing electric trucks capable of delivering large payloads over long distances are regarded as formidable.⁵³ The introduction of such vehicles is therefore unlikely. The use of electric vehicles for urban deliveries including distribution from the Freight Hub would reduce the carbon footprint of the overall journey using rail and thus make its use more attractive to customers.

- 8.12 Other technology improvements could also benefit rail in the long term, offsetting the effects of any changes in road transport in terms of a competitive advantage.
- 8.13 The Council's economist, Mr Vuletich, agrees that the assumption that the mode share of rail remains constant is reasonable.⁵⁴ While there are clearly uncertainties, on balance changes in technology are considered to be unlikely to discourage a modal shift from road to rail. However the modal split could be influenced by Government policies to encourage the use of rail and by an increasing desire on the part of customers to reduce the carbon footprint associated with the movement of their goods.

Lack of integration with industry

- 8.14 Some submitters have raised a concern that the design of the Regional Freight Hub does not provide rail connections for potential users in the NEIZ and that there is no provision for a dedicated freight corridor connecting the Regional Freight Hub with sites in the NEIZ.

Rail connections for potential users

- 8.15 Freight hub users have been categorised by CEDA into three main groups:⁵⁵
- (a) Level 1 users who are heavily rail dependent and who need railhead access. These would typically be the major freight forwarders;
 - (b) Level 2 users who also make substantial use of rail but who do not require direct railhead access. These could locate either within the

⁵² <https://www.countdown.co.nz/community-environment>

<https://www.foodstuffs.co.nz/here-for-nz/sustainability/climate-change>

⁵³ <https://www.woodmac.com/news/opinion/the-long-haul-for-electric-heavy-trucks/>
<https://www.commercialfleet.org/fleet-management/will-electric-trucks-be-in-it-for-the-long-haul>

⁵⁴ Section 42A Technical Evidence of Shane Vuletich, dated 18 June, at paragraph [95].

⁵⁵ Section 42A Technical Evidence of Shane Vuletich, dated 18 June, at paragraph [44].

Hub or close to it in the NEIZ. These would include the major distribution centres such as those currently operated by Countdown and Foodstuffs; and

- (c) Level 3 users who are less frequent users of rail who would typically choose to locate away from the Site.

8.16 Applying CEDA's categorisation of rail connection users here, the proposals for the Freight Hub include a number of rail connected warehouses within the Site in the area identified as the Freight Forwarders Depot. This will give the Level 1 users within the transport and logistics industry the potential for direct connections with rail services, avoiding the need to move commodities by truck on the road system outside the Hub and thus facilitate the movement of freight by rail.

8.17 Some submitters have raised that provision be made for a grade separated connection between the NEIZ and the Freight Hub who choose to locate outside the Freight Hub. It was suggested that this should be capable of use by vehicles not permitted on the public road network such as straddle carriers and MAFI trailers.⁵⁶ This issue has also been raised in the Section 42A Report and is discussed in further detail below.

9. RESPONSE TO SECTION 42A REPORT

9.1 I have reviewed the sections of the Section 42A Report relevant to my evidence, particularly the evidence prepared by Shane Vuletich.

9.2 In general, this evidence supports the findings in my evidence stating:⁵⁷

that the Freight Hub is likely to generate significant economic benefits for the region

9.3 Mr Vuletich has not undertaken his own independent economic analysis and yet asserts that it appears that the potential regional benefits have been overstated because of the "early reporting of longer train benefits and allocation of transport cost savings to Palmerston North users."⁵⁸

⁵⁶ A MAFI trailer is a trailer capable of carrying heavy loads often within ports but which because of its configuration cannot be used on a public highway.

⁵⁷ Section 42A Technical Evidence of Shane Vuletich, dated 18 June 2021, at paragraph [5].

⁵⁸ Section 42A Technical Evidence of Shane Vuletich, dated 18 June 2021, at paragraphs [87] and [100].

- 9.4 While there is uncertainty over the timing of the introduction of longer trains, KiwiRail is starting to introduce the modifications to rolling stock which would permit their use. Trains of longer than 900 m are currently in operation in the South Island. Due to the cost advantages, I consider it is likely that KiwiRail will start introducing longer trains (albeit of a shorter length than 1500 m) at an early stage after 2030. As a result, while the full benefits of the longer trains may not be achieved until the middle of the century some benefits are likely to be achieved at an earlier stage. This does not mean that the benefits themselves have been overstated but rather that when they will be realised is dependent on the timing of their introduction.
- 9.5 Mr Vuletich indicates that he believes that the benefits from the cost reductions with the Freight Hub would be spread between different groups and the totals allocated to Palmerston North rail users are therefore overstated. He does however accept that the method used to estimate the total benefits is reasonable.
- 9.6 The reductions in the costs with improved container handling and the use of longer trains made possible with the new Freight Hub would provide KiwiRail with the potential to reduce its charges to its customers. The extent to which this would eventuate would depend on market conditions but in the light of the continuing competition with road freight and the desire by the Government to maximise the use of rail for the movement of freight, it is likely that all, or at least almost all, of the anticipated cost savings would be passed on in order for rail to be competitive against the road alternative. This would result in the considerable benefits to users and to the wider community which have been identified in the quantitative analysis and discussed above in paragraphs 7.8–7.12
- 9.7 Mr Vuletich also states that the Ministry of Transport model provided with the Section 92 Response "appears to use an outdated set of population projections to inform its freight demand projections."⁵⁹
- 9.8 The population estimates used in the assessment of the future freight demand were those incorporated in the current version of the model developed by the Ministry of Transport which used population projections based on the position in 2013. Updated population projections based on the

⁵⁹ Section 42A Technical Evidence of Shane Vuletich, dated 18 June 2021, at paragraph [91].

position for 2018 are now available in the Statistics New Zealand website.⁶⁰ These predict rather higher population growth in the Manawatu-Whanganui region than was anticipated earlier. I have therefore rerun the model using the new figures.

- 9.9 The outputs from the model show that with the higher population assumptions and associated increases in regional GDP, the demand flow through the Freight Hub is forecast to be higher than the earlier estimates. As a consequence, the benefits from the provision of the additional capacity at the terminal increase by over 40 per cent compared to earlier Section 92 estimates. There would also be more longer distance train traffic with the benefits increasing by about 1–2 per cent. Overall on the assumption that longer trains are in operation from the opening of the facility, the total quantified benefits increase by about 6 per cent.
- 9.10 If alternatively it is assumed that longer trains are not introduced until 2050, the increase in benefits amounts to about 11 per cent.
- 9.11 It is agreed that the longer term impacts of the reduced costs of operation at the new Freight Hub would be substantial. These are however difficult to quantify reliably. They have therefore not been included in the quantitative assessment but have been recognised in my qualitative assessment.
- 9.12 Mr Vuletich raises the issue of the connections between the Freight Hub and the NEIZ. He notes that there is no special provision for Level 2 users who wish to locate outside the Freight Hub and transport goods between their premises and the Freight Hub using vehicles such as straddle carriers and MAFI trailers which are not permitted on a public road. He does however comment that:⁶¹

Initial freight volumes may not warrant the level of expenditure that would be required to develop a grade-separated connection immediately.

- 9.13 He also quotes the traffic and transportation evidence of Harriet Fraser which states:⁶²

⁶⁰ As part of this updating the assumptions of regional GDP per capita were kept unchanged so regional GDP would increase in line with population increases.

⁶¹ Section 42A Technical Evidence of Shane Vuletich, dated 18 June 2021, at paragraph [148].

⁶² Section 42A Technical Evidence of Harriet Fraser, dated 18 June 2021, at paragraph [125].

My understanding is that for containers to be moved between the two sites without using the public road network a straddle corridor with a width of around 50 m would be needed.

- 9.14 This would represent a very substantial corridor width about twice as wide as that for Railway Road and about the same as the main runways at Palmerston North Airport.
- 9.15 In my view, a grade separated corridor between the NEIZ and the Freight Hub is neither necessary nor justifiable from an economic perspective. Level 2 users who wish to have the closest connections with the rail heads in the Freight Hub would potentially have the opportunity of locating in the areas identified as Rail Service Distribution Centres within the Freight Hub itself. As a result, it would only be a part of the Level 2 market for which any dedicated freight route might be required. However, these users currently appear to be able to operate satisfactorily using the public road.
- 9.16 As well as providing land for the proposed route in the Freight Hub, there would need to be a corridor to provide the segregated connections necessary within the NEIZ. Given the width of the corridor required and the potential length of the corridors within the NEIZ (if they are to provide reasonable coverage) this could potentially sterilise considerable areas of land within the NEIZ with a resulting high cost. In addition, the majority of the traffic of the Level 2 users is carried in containers with weights that can be accommodated on vehicles using public roads so there is little need for specialised equipment to carry these. These factors, the potentially limited market for the connection and the costs associated with its construction would severely constrain the economic feasibility of the link. Mr Georgeson's evidence also states that there would be sufficient capacity at the roundabout providing the main route into the Freight Hub to handle the flows identified.⁶³
- 9.17 Given these considerations, there appears to be no economic justification for the sterilisation of the land that would be required for this freight corridor and the costs of construction and operation that would be incurred, given the low volumes likely to be carried, and the adequate alternative access routes available.

Richard Paling

9 July 2021

⁶³ Evidence of Mark Georgeson, dated 9 July 2021.

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

**STATEMENT OF EVIDENCE OF FRASER COLEGRAVE
ON BEHALF OF KIWIRAIL HOLDINGS LIMITED**

ECONOMICS

1. SUMMARY

1.1 This evidence addresses the likely wider economic effects of the Freight Hub (ie those economic effects that are likely to occur over and above direct effects on the freight network). Those wider economic effects include:

- (a) Freeing up land at KiwiRail's existing rail yard at Tremaine Avenue ("**Existing Freight Yard**") for other uses. Not only will this help offset the "loss" of North-East Industrial Zone ("**NEIZ**") land due to the Freight Hub, but the land underlying the Existing Freight Yard appears to be far more valuable than other, nearby industrial land. Accordingly, releasing that land for alternative uses will enable it to be put to new productive uses and hence confer economic benefits on the city.
- (b) Impacts of changes in land use due to the NoR. The Freight Hub will consume approximately 177 hectares of land, about 50 hectares of which is currently zoned as NEIZ. While the uptake of that NEIZ land may bring forward the need to rezone additional industrial land, the proposed site for the Freight Hub ("**Site**") spans land that has very low values compared to other land across the city. As a result, it is unlikely to impose significant economic opportunity costs.
- (c) Employment and other construction-related effects. The process of planning for, designing, and constructing the various buildings and

structures that comprise the Freight Hub will draw in workers from many fields and create jobs and incomes for numerous workers across a broad range of fields. In fact, I estimated that construction of the Freight Hub could boost North Island gross domestic product ("**GDP**") by nearly \$100 million per annum for 10 years, create full-time employment for nearly 920 people (again, for 10 years), and boost annual household incomes by \$48 million. In addition, once operational, the Freight Hub (and its associated onsite freight partners) could provide full-time employment for more than 1,000 people.

- (d) Effects on housing demand. Construction of the Freight Hub will increase the demand for employment in Palmerston North city, some of which will be met by migration into the city. These new workers who are moving to the city, in turn, will need somewhere to live, thereby increasing the demand for city housing. Assuming that a quarter of total construction costs are spent in Palmerston North, and that half of the resulting increase in city employment is met by migration, I estimated that construction will generate local housing demand for an additional 115 dwellings (over and above what would be anticipated if the Freight Hub was not constructed).

1.2 My evidence also responds to relevant economic issues raised in submissions and confirms that those various economic concerns are either unlikely to transpire and / or will be no more than minor.

1.3 Finally, I respond to two issues raised in the Section 42A Technical Evidence by Mr Shane Vuletich dated 18 June 2021. Specifically, I confirm that his suggestion of using cost-benefit analysis to estimate employment effects is misguided in the current context, and that his comments on the benefits of freeing up land at the Existing Freight Yard do not reflect KiwiRail's natural focus on the NoR process (instead of potential future uses of the Existing Freight Yard).

2. INTRODUCTION

2.1 My full name is Fraser James Colegrave. I am an economist and the managing director of Insight Economics, an economics consultancy in Auckland. I hold the qualification of Bachelor of Commerce (First Class Honours) in Economics from the University of Auckland.

Experience

- 2.2 I have over 21 years' consulting experience and have led, and completed, more than 500 projects across a wide range of sectors during that time. I have estimated the regional and national economic impacts of some of the largest projects and organisations in New Zealand, including:
- (a) New Zealand's largest gas field (Maui);
 - (b) New Zealand's largest dairy farm;
 - (c) New Zealand's largest mussel farm;
 - (d) Auckland Airport;
 - (e) a \$250 million infant milk formula plant;
 - (f) the velodrome and cycling centre of excellence in Cambridge; and
 - (g) the upgrade and extension of Skyline Resort in Queenstown.
- 2.3 I regularly appear as an expert witness before Councils, Boards of Inquiry, Independent Hearing Panels, the Land Valuation Tribunal, the Environment Court, the Family Court, and the High Court of New Zealand.

Involvement in the Freight Hub

- 2.4 I was engaged by KiwiRail in 2021 following lodgement of the NoR application for the Freight Hub to assist with, and provide advice on, various economic issues that were raised in Palmerston North City Council's ("**PNCC**") first request for further information. These included matters relating to:
- (a) the impacts of freeing up the Existing Freight Yard for other uses;
 - (b) the impacts of changes in land use associated with the Freight Hub proposal;
 - (c) employment and other construction-related impacts;
 - (d) impacts on housing demand; and
 - (e) broader strategic / economic effects.

Code of conduct

- 2.5 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that

might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

3.1 This statement of evidence will:

- (a) provide an overview of my assessment of the economic impacts of the Freight Hub;
- (b) respond to the submissions received that relate to the economic effects of the Freight Hub; and
- (c) address relevant matters raised in the Section 42A Report.

4. ASSESSMENT OF ECONOMIC EFFECTS

4.1 The future development and operation of the proposed Freight Hub will have a wide range of economic effects, many of which have been addressed in detailed work by other technical specialists, particularly Mr Paling, so I do not repeat them here.

4.2 The broader economic effects of major transport initiatives like the Freight Hub are described as wider economic benefits ("**WEBs**") in Waka Kotahi NZ Transport Agency's ("**Waka Kotahi**") new economic evaluation manual – The Monetised Benefit and Cost Manual ("**MBCM**").¹ These broader economic effects include:

- (a) *Productivity impacts* – which can arise when economic activities cluster together and give rise to agglomeration effects. This agglomeration generates economic benefits by reducing transport costs and lifting the average productivity of businesses (for example, through the sharing of labour, specialised assets, and ideas). As businesses establish and thrive around the proposed Freight Hub over time, they will benefit from agglomeration effects, just like the various businesses that recently collocated with the Waikato Freight Hub in Hamilton once it opened.

¹

<https://www.nzta.govt.nz/resources/monetised-benefits-and-costs-manual/>

- (b) *Employment impacts* – in addition to providing employment during construction, the Freight Hub's future operations will also create stable, direct long-term employment for the local community.
- (c) *Competition effects* – a more cost-effective freight service will reduce transport costs for a broad range of businesses, helping them to become more competitive in their respective markets. This is addressed in detail in the evidence of Mr Paling, which I agree with.²
- (d) *Exemplar effects* – The proposed Freight Hub may be the first of many new freight hubs developed across New Zealand to help strengthen the national rail network and encourage a modal shift away from transporting freight by road. If so, the Freight Hub proposal may have important wider benefits by creating a blueprint for future developments and hence improving the economic efficiency with which the national rail network is developed over time.

Impacts of freeing up land at the Existing Freight Yard site

- 4.3 Development of the proposed Freight Hub will free-up land at the Existing Freight Yard, with resulting impacts on the local land market.
- 4.4 First, relocation of the Existing Freight Yard will release its land from its current use. While future redevelopment or uses of the Existing Freight Yard land are not yet confirmed, prior analysis by Mr Paling suggests that it may be suitable for various light industrial or commercial activities. I agree.
- 4.5 Redevelopment of the Existing Freight Yard site for such uses may offset the uptake (or "loss") of NEIZ land as part of the proposed new designation for the Freight Hub. This, in turn, may help to neutralise the impacts of the proposal on Palmerston North city's supply of industrial land, particularly since the Existing Freight Yard is zoned industrial and could be subdivided into relatively large lots (if needed), just like the NEIZ.
- 4.6 Second, there may be broader effects if the Existing Freight Yard land has a different value to other industrial zoned land in Palmerston North city. That may be the case simply because this land is closer to the central business district than other industrial land, or because it has other attributes that are particularly attractive to the market.

²

Evidence of Richard Paling, dated 9 July 2021.

- 4.7 Specifically, if the land underlying the Existing Freight Yard is significantly more valuable than other industrial zoned land nearby, the land's pending availability for other future industrial uses will confer economic benefits on the city, and vice versa. This is because the proposal frees up that valuable/scarcely for other productive purposes, whereas currently it is tied up in an existing use
- 4.8 To examine this possibility, I used Core Logic's *Property Guru* ("**Property Guru**") tool to compare the land value of properties directly adjacent to the Existing Freight Yard site to other industrial zoned land nearby.³ My working hypothesis was that, if the land directly adjacent to the Existing Freight Yard is significantly more or less valuable than other nearby industrial land, the same may also be true of the land upon which the Existing Freight Yard resides.
- 4.9 The two figures below show the areas that I compared for this purpose. The red outlines in Figure 1 represent land directly adjacent to the Existing Freight Yard site and the red outlines in Figure 2 represent nearby industrial areas used as comparators.



*Figure 1: Properties Directly Adjacent to the Existing Freight Yard site
(Highlighted in Red Outlines)*

³ The location of these other industrial sites is shown in the map below. They were selected because they have the same zoning as the Existing Freight Yard and are also located very nearby. Accordingly, they differ largely / only because they are not immediately adjacent to the Existing Freight Yard.



Figure 2: Other Industrial Properties Used for Comparison Purposes

- 4.10 The analysis returned property information for 36 industrial properties directly adjacent to the Existing Freight Yard site, and a further 431 other industrial properties located nearby. Figure 3 below compares the land values of adjacent properties (the red bars) to other industrial properties (the grey bars).

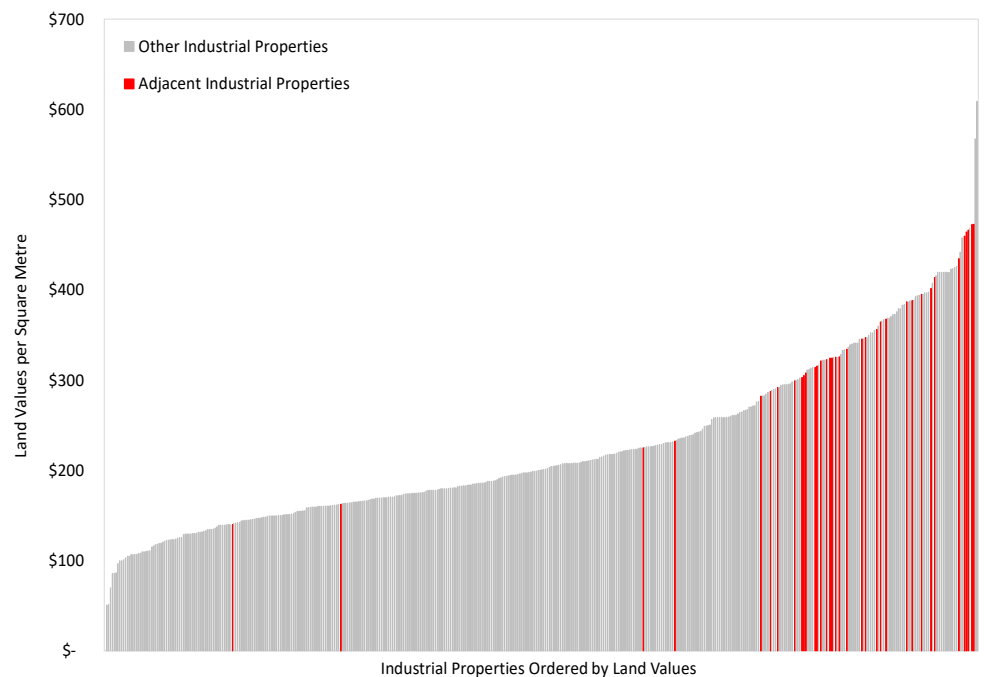


Figure 3: Comparison of Land Values Across the Two Locations (\$ per m²)

- 4.11 The cluster of red bars on the righthand side of Figure 3 confirms that land directly adjacent to the Existing Freight Yard is more valuable than other industrial land. In fact, the average land value ("LV") for industrial properties adjacent to the Existing Freight Yard site was \$341 per square metre, compared to only \$216 for the other areas. Thus, sites directly adjacent to the

Existing Freight Yard site are worth 57% more per square metre of land than comparable properties nearby.

- 4.12 To test whether this observed difference in LVs was statistically significant, I used an Excel function called the z-test for two means. This is a type of statistical "hypothesis test", which formally measures whether the observed variance in average LV represents a fundamental difference between the two datasets or is merely a statistical anomaly.
- 4.13 The strength of the test result is measured by the p-value, which is bound by zero and one. The closer the p-value is to zero, the more certain it is that the observed differences represent a true divergence in LV, and vice versa. In general, p-values less than 0.05 indicate strong statistical significance, while values greater than 0.1 indicate that differences are likely to be an anomaly.
- 4.14 The Figure below shows the outputs of the statistical test, where the p-values are effectively zero. The associated value of negative 9 for the z-score means that the probability of these observed differences in LV being a statistical anomaly (rather than reflecting a true difference in land values) is less than one in a trillion.

z-Test: Two Sample for Means		
	<i>Other</i>	<i>Adjacent</i>
Mean	216.18	341.23
Known Variance	7,487.00	6,137.00
Observations	431.00	36.00
Hypothesized Mean Difference	-	
z score	- 9.12	
P(Z<=z) one-tail	-	
z Critical one-tail	1.64	
P(Z<=z) two-tail	-	
z Critical two-tail	1.96	

Figure 4: Outputs from Statistical Tests

- 4.15 While the statistical tests do confirm a significant difference in LVs, they cannot tell me *why* the values differ so greatly. In my view, there are two possible reasons:
- (a) first, these sites adjacent to the Existing Freight Yard may be more valuable due to their proximity to the Existing Freight Yard site and associated rail facilities; or
 - (b) second, these sites adjacent to the Existing Freight Yard may be more valuable because of other reasons, such as their relatively central location in Palmerston North city, proximity to residents (ie

workers), accessibility from Tremaine Avenue, and proximity to the CBD.

- 4.16 I consider it likely that both factors are at work in these circumstances. Accordingly, it follows, that the construction of the Freight Hub and decommissioning of the Existing Freight Yard site will not only free-up relatively valuable industrial land near Palmerston North, but that the relocation of the freight hub activities may also positively influence the value of industrial land adjacent to the new location for the Freight Hub (ie the NEIZ).

Impacts of Changes in Land Use Due to the NoR

- 4.17 The Freight Hub will span approximately 177 hectares of land between the Palmerston North Airport and Bunnythorpe, approximately 127 hectares of which is currently zoned rural, and the remaining 50 hectares of which is zoned NEIZ.
- 4.18 To understand the potential impacts of changes in land use resulting from the proposed NoR, I used Property Guru to extract information on the land parcels that comprise it. This enabled me to assess the uses to which that land is currently put, and to gauge its current market values.
- 4.19 Property Guru could not trace the outline of the boundaries of the proposed designation ("**Designation Extent**") perfectly, which meant that the results excluded a few parcels that fall within the Designation Extent, while including a few that do not. Overall, however, I consider that the results provide a reasonable approximation of the affected area from which to consider any potential effects on land use changes.
- 4.20 Figure 5 below shows the area for which property information was extracted. It comprises 52 parcels with a total land area of nearly 159 hectares.

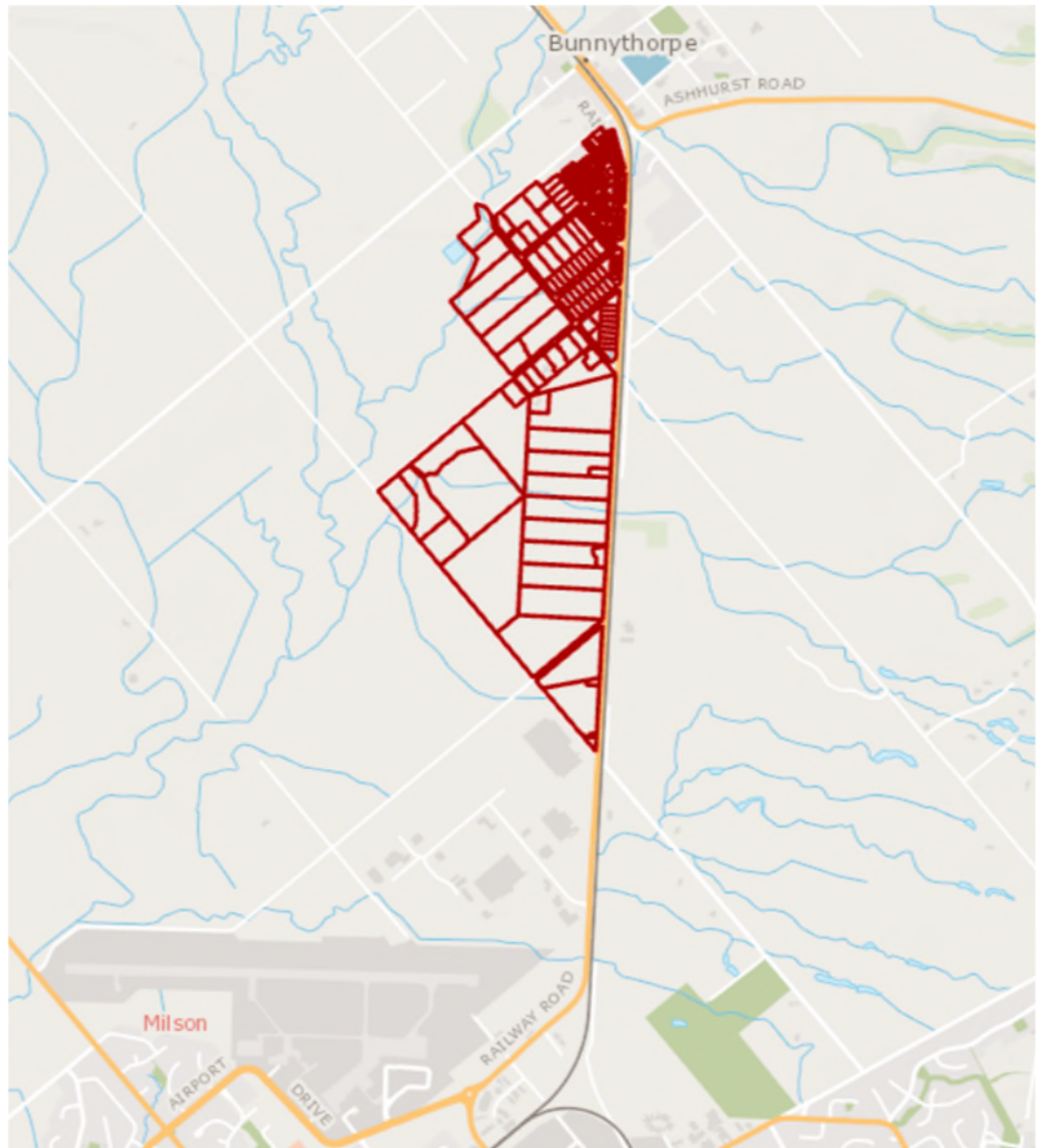


Figure 5: Property Guru Approximation of Land Affected by the NoR

4.21 Table 1 summarises the current land uses based on data from Property Guru, along with corresponding land areas and LV.

Table 1: Land Uses for Parcels within the Designation Extent

Land Use Types	# of Properties	Land Area (ha)	Total LV (\$m)	\$/m ² LV
Farming	7	75	\$4.7	\$6
Rural / Lifestyle	19	52	\$5.9	\$11
Residential	18	7	\$2.8	\$43
Vacant Industrial	6	25	\$8.6	\$35
Other	2	1	\$0.5	\$39
Totals	52	159	\$23.0	\$14

- 4.22 Table 1 shows that most of the parcels (71%) within the Designation Extent are either residential or lifestyle (ie rural residential) properties. However, these account for only 37% of the total land area analysed. Farming properties, conversely, account for 13% of land parcels but 47% of land area. The other notable land use is vacant industrial (which represents some of the undeveloped land within the NEIZ), which accounts for just over 10% of parcels but nearly 16% of total land area in the Designation Extent.
- 4.23 Further, the LVs attached to each land use range from \$6 per square metre for farming up to \$43 for residential, with vacant industrial land weighing in at around \$35 per square metre. The overall average per square metre is \$14. These figures are quite low overall compared to land prices elsewhere in the city,⁴ which suggests that the loss of land within the Designation Extent will not cause significant opportunity costs. This is particularly true for the land used for farming within the Designation Extent, which Property Guru mostly labels as "uneconomic" due to its evidently marginal nature.
- 4.24 Another important consideration is the potential effects of the accelerated uptake of NEIZ land, 50 hectares of which would be occupied by the Freight Hub. According to reporting recently completed under the National Policy Statement on Urban Development Capacity 2016 ("NPS-UDC"), "approximately 150ha of the 212ha of land zoned for large floor-plate development (in the NEIZ) has been developed or has been secured with the intention to develop in the short to medium-term (up to 10 years)."⁵ Accordingly, it concludes, there may be a need to consider the provision of additional land for large-lot industrial sooner than previously anticipated.⁶
- 4.25 The same report goes on to state:⁷

One of the drivers for early market interest in securing land in the Extension Area is the announcement of rail access into the area. Rail seems to be a catalyst that is drawing investment interest because of the opportunity for the Extension Area to become a central North Island multi-modal transport and distribution hub that includes convenient access to road, rail and air. Market indications at the end of 2018 are that a number of large sites in the Extension Area are now under contract or have been purchased by development interests.

⁴ For example, as shown earlier, the average value of land across various industrial areas of the city was \$216 / m², which is 15 times higher than the average value for the land notionally affected by the NoR.

⁵ Palmerston North Housing and Business Development Capacity Assessment Report, May 2019.

⁶ Ibid. At [2.30] on page 12 states "it is likely that capacity issues for large floor-plate industrial land is likely to arise in the next 10-15 years (medium to long-term) rather than beyond the 20-year horizon (long-term) projected in the Capacity Assessment.

⁷ Ibid. At para [7.19] on page 107.

- 4.26 In other words, the market started acquiring land in and around the NEIZ extension area in anticipation of an intermodal freight hub because it would create a significant economic anchor towards which complementary activities would naturally gravitate. Therefore, not only would the Freight Hub consume a significant proportion of the Palmerston North city's current stock of large-lot industrial land, but it has also accelerated the uptake of peripheral land to enable the agglomeration of like-activities. This agglomeration (or clustering) of economic activity, in turn, will generate economic benefits by reducing transport costs and lifting the average productivity of businesses (for example, through the sharing of labour, specialised assets, and ideas). Indeed, these agglomeration benefits are the motivating force for compatible / related economic activities willingly collocating with one another across the world.
- 4.27 As a result, Palmerston North city will need to start planning for the rezoning of other land to ensure that there is a sufficient supply of large-lot industrial sites to meet requirements over the longer term. I do, however, reiterate that the loss of some NEIZ land to the Freight Hub will be offset, at least partially, by the release of land currently occupied by the Existing Freight Yard (assuming this is redeveloped for industrial purposes). Given the relative proximity of that land to the CBD, it is highly likely to be more valuable than the land occupied by the Freight Hub in the NEIZ.
- 4.28 On the basis that I am not aware of any factors that would preclude the successful identification and rezoning of additional land to offset the increased uptake of NEIZ as a result of the Freight Hub and complementary land uses, it is unlikely, in my view, that there will be any adverse economic effect. Conversely, the development of the new Freight Hub at the proposed location will instead give effect to PNCC's objective of using "Palmerston North's central location and access to road, rail and air transport to build a significant future-proofed freight and distribution hub."⁸

Effects on employment and other construction related effects

- 4.29 The future development of the Freight Hub will cost several hundred million dollars and hence create significant economic stimulus for the Palmerston North city, Manawatu-Wanganui region, and the broader North Island economy. For example, the process of planning for, designing, and constructing the various buildings and structures that comprise the Freight Hub will draw in workers from many fields and create jobs and incomes for numerous workers across a broad range of fields. For example, the following

⁸ <https://www.pncc.govt.nz/media/3130972/city-development-2018.pdf>, page 16

workers would be required to complete the Freight Hub, many of which would be city / regional locals:

- (a) architects, planners, lawyers;
- (b) quantity surveyors;
- (c) transport specialists;
- (d) civil and structural engineers;
- (e) site preparation workers;
- (f) building contractors and sub-contractors; and
- (g) plumbers, electricians, glaziers.

4.30 To estimate the potential economic impacts associated with the design and construction of the Freight Hub, I used a multiplier analysis. This incorporates detailed matrices called input-output tables, which show how the various sectors of the economy are interrelated. Consequently, they enable the overall impact of the proposal, including its flow on effects, to be estimated.

4.31 Given the scale of the Freight Hub development and its construction will likely draw on resources from a broad area, I selected the entire North Island as the relevant study area. For each major phase in the development process, I then mapped the estimated costs to sectors of the North Island economy. Finally, I overlaid the corresponding economic multipliers to derive the estimated impacts on North Island GDP, employment, and household incomes. Table 2 below presents the results.

Table 2: Estimated Total Economic Impacts of Construction (\$million)

Economic Impact Measures	Direct	Flow-On	Total
GDP \$m	\$300m	\$680m	\$980m
Employment (FTE-years)	2,960	6,230	9,190
Household Incomes \$m	\$185m	\$295m	\$480m

4.32 As demonstrated in Table 2, construction of the Freight Hub could generate nearly \$1 billion of GDP for the North Island (including \$680 million of flow-on effects), and create employment for nearly 9,200 full-time-equivalent years ("**FTE-years**").⁹ In addition, increased employment could boost household incomes (ie worker wages and salaries) by around \$480 million over the construction period for the Freight Hub.

⁹ An FTE-year means one full-time equivalent employed for a full year. Hence, 9,200 FTE-years could mean 4,600 people employed for two years, 920 people employed for 10 years, and so on.

- 4.33 Since the construction period is expected to last approximately 8 to 10 years, it is helpful to convert these aggregate estimates into annual equivalents. To that end, Table 3 restates the impacts above on an annual basis assuming a construction period of 10 years.

*Table 3: Estimated **Annual** Economic Impacts of Construction (\$million)*

Economic Impact Measures	Direct	Flow-On	Total
GDP \$m	\$30m	\$68m	\$98m
Employment (FTE-years)	296	623	919
Household Incomes \$m	\$18m	\$30m	\$48m

- 4.34 Table 3 shows that construction of the Freight Hub could boost North Island GDP by nearly \$100 million per annum for 10 years, create full-time employment for nearly 920 people (again, for 10 years), and boost annual household incomes by \$48 million.
- 4.35 Assuming that half of these North Island impacts occur regionally, the Freight Hub could boost regional GDP by nearly \$50 million per annum for 10 years, provide employment for almost 460 people, and lift regional household incomes by \$24 million per annum for 10 years.
- 4.36 This shows that the economic impacts of construction of the Freight Hub are significant, and represent a material gain to both the regional and wider North Island economies.
- 4.37 It is also important to put these economic impacts in the context of the likely effects of several other major projects that are anticipated for the Palmerston North city and Manawatu-Whanganui region over the next 10 years or so. A list of these other projects (reproduced in Figure 6 below) was compiled by PNCC and subsequently outlined in several documents, including a recent report titled Urban Development Capacity Indicators for Palmerston North (June 2020).¹⁰

¹⁰

<https://www.pncc.govt.nz/media/3133106/urban-development-capacity-indicators- June 2020.pdf>

Major construction projects		
Major development and construction projects announced for Palmerston North and the Manawātū region amount to more than \$3.0 - \$4.0 billion of construction activity over the period to 2030.	Development	\$ million
	Timing	
Some projects under development do not have final values for the project, such as the construction of the MidCentral critical service block and KiwiRail freight hub, although KiwiRail suggests it might attract \$4 billion in investment to Palmerston North.	Manawātū Gorge	650
	Linton and Ohakea regeneration plan	397
	Mercury Energy - Turitea	256
	Massey University capital plan	230
	Powerco growth and security projects	150
	Hokowhitu campus redevelopment	90 - 135
	P-8A Poseidon aircraft - infrastructure	300
	NZTA regional roading investment	cost and timing to be confirmed
	BUPA retirement village	40
	KiwiRail regional freight hub	cost and timing to be confirmed
	MidCentral DHB acute services block	370
	MidCentral surgical and mental health	57
	Countdown distribution centre	66

(Source: Palmerston North City Council)

Figure 6: Major Projects Planned for the City/Region

- 4.38 This broader list of major projects shows that the Freight Hub will be one of many major initiatives that will significantly bolster local / regional GDP, incomes, and employment. Taken as a whole, this forthcoming body of work will create sustained employment for a large and diverse workforce, rather than resulting in only one-off, transient economic effects.
- 4.39 Further, the Freight Hub will have significant employment effects over the longer term due to ongoing operations. According to preliminary analyses performed by KiwiRail, the Freight Hub (and its associated onsite freight partners) could provide full-time employment for more than 1,000 people. This is likely to be conservative however because these estimates are based on current KiwiRail employment figures from the Existing Freight Yard. As the Freight Hub grows to reach its long-run operating capacity, the fulltime employment figures are likely to significantly exceed the baseline estimate of 1,000 people.

Effects on housing demand

- 4.40 The increases in employment associated with the construction of the Freight Hub – and the other major projects identified above – will increase the demand for local housing, and hence potentially place some pressure on Palmerston North city's housing market. The diagram below broadly illustrates the general relationship between the estimates of increased employment tabulated above, and the corresponding impacts on the demand for city housing.

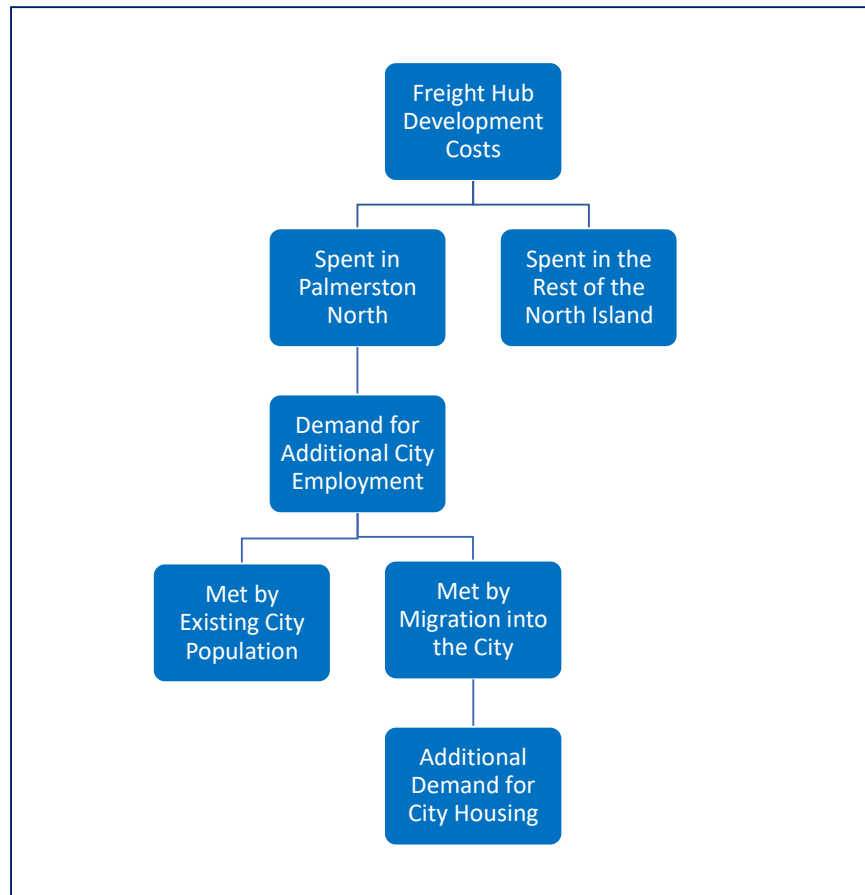


Figure 7: Relationship between Freight Hub Costs / Impacts and Local Housing Demand

- 4.41 To summarise, construction of the Freight Hub will increase the demand for employment in Palmerston North city, some of which will be met by the existing population, and some of which will be met by migration into the city. These workers who are coming to the city, in turn, will need somewhere to live, thereby increasing the demand for city housing.
- 4.42 To estimate the level of this effect, I determined the proportion of Freight Hub construction costs spent in the city, plus the proportion of the resulting increase in local city employment met by migration.
- 4.43 In the absence of any concrete information on the likely share of construction costs spent in the city, and in the interests of adopting a conservative approach, I assumed that a quarter of total construction costs will be spent in Palmerston North, and that half of the resulting increase in city employment will be met by migration. Then, I applied these assumptions to the estimated annual increases in employment during construction shown in Table 3 above. Under these assumptions, I estimated that construction of the Freight Hub will generate local housing demand for an additional 115 dwellings (over and

above the demand that would be anticipated if the Freight Hub was not constructed).

- 4.44 While this might seem like a significant figure itself, it needs to be considered in context. Specifically, according to the 2017 Sense Partners household projections for Palmerston North city, this will equate to only about a quarter of a year's average demand for additional dwellings out to 2043. Those household projections were contained in reporting recently completed under the NPS-UDC and are reproduced below.

Table 4: Long-term household projections for Palmerston North

	Sense Partners (September 2017)			Statistics New Zealand (December 2016)		
		Average annual change			Average annual change	
Period ended	Households	Number of households	Rate of change(%)	Households	Number of households	Rate of change(%)
2001	28,000			28,000		
2006	28,900	180	0.6%	28,900	180	0.6%
2013	31,500	371	1.2%	31,500	520	1.2%
2018p	33,000	300	0.9%	33,500	400	1.2%
2023p	35,300	460	1.4%	35,100	320	0.9%
2028p	37,600	460	1.3%	36,600	300	0.8%
2033p	40,000	480	1.2%	37,900	260	0.7%
2038p	42,100	420	1.0%	39,000	220	0.6%
2043p	44,300	440	1.0%			

Source: Statistics New Zealand and Sense Partners

5. RESPONSE TO SUBMISSIONS

- 5.1 The following submitters have raised matters relating to the economic effects of the Freight Hub on the economy that relate to matters addressed in my assessment:

- (a) Aaron Fox;
- (b) Accelerate 25;
- (c) Manuwatu and Horowhenua District Councils;
- (d) Central Economic Development Agency ("**CEDA**");
- (e) Danelle O'Keefe and Duane Butts;
- (f) Darren Green;

- (g) submitter 97;¹¹
- (h) Nicola Schreurs and Thomas Good; and
- (i) Peter Gore and Dale O'Reilly.

5.2 I have considered these submissions and respond to them by way of themes rather than individual submissions. Mr Paling has addressed, in his evidence, economic effects relevant to his assessment and area of expertise.¹²

Economic Benefits of the Freight Hub

5.3 Several submitters identified various economic benefits likely to arise from the Freight Hub. Those submitters include the Central Economic Development Agency, Accelerate 25, and Horowhenua District Council.

5.4 The likely economic benefits cited by these submitters include:

- (a) that freight businesses will invest in the region due to the increased volumes distributed through the Freight Hub;
- (b) job creation in the build phase;
- (c) reduced costs of building and maintaining roads;
- (d) central city land released for higher value activities;
- (e) reduced emissions from transitioning from road to rail; and
- (f) safer roads in central Palmerston North.

5.5 I acknowledge these benefits and consider that they will be both significant and enduring.

Opportunity Cost of Designated Land

5.6 Some submitters have raised concerns about the opportunity cost of land foregone to designation. For example, Nicola Schreurs and Thomas Good state that 66 properties will be subsumed, which inflates the overall cost of the proposed Freight Hub. Firstly, I understand that approximately only 24 dwellings will need to be acquired, not 66.¹³

¹¹ KiwiRail understands from PNCC that this submitter wishes to remain anonymous.

¹² Evidence of Richard Paling, dated 9 June 2021, at section 8.

¹³ This issue was addressed in the social impact assessment, which can be accessed here <https://www.pncc.govt.nz/media/3133269/j-social-impact-assessment.pdf>

- 5.7 I acknowledge that the Freight Hub will require the acquisition of properties that currently contain dwellings. However, I disagree with the assertion by submitters that the underlying land is expensive and will therefore significantly inflate the overall cost of the Freight Hub.
- 5.8 According to the Property Guru data shown in paragraph 4.23 above, the average value of land within the Designation Extent is \$14 per square metre. This is very low overall. For example, the average LV across various industrial areas of the city was \$216 per square metre, which is 15 times higher.
- 5.9 Even if the value of buildings and other improvements are included in the calculations, according to Property Guru, the value of properties within the Designation Extent remains relatively low. In fact, the average value of land and buildings in the affected area translates to only \$21 per square metre of land, which is ten times lower than the value of land alone in the city's various industrial areas (of \$216 / m²).
- 5.10 For further context, I used Property Guru to extract data on every vacant residential section sold in Palmerston North city over the last two years to gauge their current values. This provided data on 282 sections with a total land area of 34.6 hectares and a combined value of \$123 million. This equates to an average land value of \$354/m², which is more than 16 times higher than the average value of land and buildings within the Designation Extent per square metre of land.
- 5.11 Finally, PNCC's assessment of feasible housing capacity – undertaken pursuant to the NPS-UD or its predecessor – assumes that greenfield residential sections will have an average land value of \$533 / m².¹⁴ This is 25 times higher than the combined value of land and buildings within the Designation Extent per square metre of land.
- 5.12 I therefore disagree that the proposed location of the NoR, coupled with the existing uses of the underlying land will significantly inflate the cost of the Freight Hub. Given the relative LVs outlined above, the opposite appears to be the case.
- 5.13 Other submitters, such as Peter Gore and Dale O'Reilly, are concerned about the loss of productive farm sites in the affected area. I acknowledge that small-scale farming occurs on some of the affected land. However, detailed reviews of aerial photos – coupled with official employment data and Property Guru

¹⁴ PNCC Housing & Business Development Capacity Assessment Summary Report, May 2019, page 19.

information – suggest that the extent of any productive farming is limited in this area. Moreover, land currently used for farming within the Designation Extent had an average LV of only \$6 per square metre, which is very low compared to the value of land in other parts of the city (as described above at paragraphs 4.22 to 4.23 of my evidence).

Impacts on Residential Land/Dwelling Market

- 5.14 Some submitters consider that the land would better be used for other purposes, such as residential development. For example, Aaron Fox contends that the Freight Hub land would be better used for housing in response to a "pressing need for space within the city's boundaries for new subdivision."
- 5.15 To assess the need for additional land to meet projected residential growth, I reviewed reports and data published under the NPS-UDC. First, I considered PNCC's housing capacity assessment ("**HCA**"), which compares projected housing demand to future supply to assess likely sufficiency.
- 5.16 PNCC's latest HCA was completed in May 2019 and indicates that the city has sufficient supply to meet short-term needs, but requires more capacity to meet medium- and long-term demand.¹⁵
- 5.17 To meet those longer-term future requirements, a City Development Strategy and integrated spatial plan have recently been adopted by PNCC, which set various directions that will improve the city's dwelling supply in both existing and new/greenfield areas.¹⁶ The Section 42A Report confirms that the Council also considers that sufficient land is available to be zoned and serviced to accommodate predicted greenfields residential growth.¹⁷
- 5.18 In addition, the city's new Housing and Future Development Plan clearly prioritises future greenfield areas for growth. The map below illustrates that below, which confirms that the land for the Freight Hub was **not** identified as a future residential development.¹⁸

¹⁵ Available here <https://www.pncc.govt.nz/media/3133754/housing-business-development-capacity-assessment-may-2019.pdf>

¹⁶ The city development strategy is contained in a stand-alone document, which is available here <https://www.pncc.govt.nz/council-city/official-documents/strategic-direction/goal-1-an-innovative-and-growing-city/city-development-strategy/>. The spatial plan appears on page 170 of the 10 Year Plan (LTP), which is available here <https://www.pncc.govt.nz/media/3131028/10-year-plan-2018-28.pdf>

¹⁷ Section 42A Report dated 18 June at paragraph [818].

¹⁸ Available here <https://www.pncc.govt.nz/media/3130979/housing-and-future-development-plan-2018.pdf>



Figure 9: Price-Cost Ratios for Palmerston North (yellow) and Auckland (green)

- 5.22 Figure 9 shows that, despite a gradual increase over the last five years, Palmerston North's price-cost ratio has remained below 1.5 since at least 1993. Auckland's, conversely, has been above 1.5 since 1994 and has even been as high as 3 in recent times. This further reinforces the observation that Palmerston North does not have a significant shortage of residential land that would justify rezoning the NoR land for that purpose.
- 5.23 Given that recent PNCC analyses identify and confirm several future growth areas around the city, none of which are near the NoR land, I disagree that the Freight Hub proposal foregoes the land for residential purposes. I do not consider that this land would not have been used for residential development absent the Freight Hub.
- 5.24 Aaron Fox also expresses concern that people whose land is acquired because of the designation for the Freight Hub may not reinvest funds into similar properties elsewhere in the district, which will affect supply. However, if those properties were owner-occupied, a failure to purchase another home elsewhere in the district has no net impact on the city's residential market, because both supply and demand fall by the same amount.

Regional Employment and GDP Effects

- 5.25 Several submitters have raised issues regarding the Freight Hub's likely impacts on the regional economy, particularly employment effects. For example, Aaron Fox describes the Freight Hub representing aspirational economic forecasting, coupled with unrealistic projections of 1,000 new jobs and \$4 billion of investment over a 10-year period. Similarly, Darren Green considers that the promise of new jobs will come at the expense of old ones,

while Danelle O'Keeffe and Duane Butts believe that the local construction sector is already under pressure, with the Freight Hub only making it worse.

- 5.26 I disagree that the Freight Hub represents aspirational forecasting, or that the projection of 1,000 construction¹⁹ jobs is unrealistic.
- 5.27 While I only became involved in the process once the NoR had been lodged, I was responsible for estimating the likely employment impacts of construction in response to a request for further information and the following response is accordingly limited to those aspects.
- 5.28 The methodology that I used for that purpose was the same that I have previously used to analyse the likely impacts of numerous other major projects across New Zealand. My methodology is based on detailed supply-chain information provided by Statistics New Zealand, and is widely used around the world to estimate the likely regional and national economic impacts of different projects, industries, organisations, and events.
- 5.29 The estimate of 919 full-time construction-related employees shown in Table 3 of my response to PNCC's first section 92 request dated 14 December 2020 ("**First Section 92 Request**") represented total employment across the entire North Island for the Freight Hub's direct and indirect (flow-on) effects. These flow-on effects, in turn, reflect:
- (a) increased economic activity at a wide range of North Island businesses that will supply skills, materials, and services to enable construction (which are known as indirect effects); and
 - (b) the effects of increased spending by people employed directly or indirectly because of the project, which creates an additional round of economic stimulus (known as the induced effect)
- 5.30 Accordingly, the estimate of 919 full-time employees in my report does not translate to more than 900 people working full-time on site, as some submitters may have interpreted it to mean.
- 5.31 Rather Table 3 in my response to the First Section 92 Request shows that fewer than 300 people will be employed directly due to the construction process, with the rest employed elsewhere via flow-on effects.

¹⁹

Some submitters are unclear whether they are referring to construction or operating effects when commenting on employment effects. Since I estimated the construction employment impacts, I mainly focus on those here.

- 5.32 I also disagree that construction jobs created by the Freight Hub will provide no net gains, as asserted by some submitters. This is because, while I agree that some workers will transfer from existing jobs in the region, the jobs that they vacate then become available for other district / regional residents to fill. As a result, there will be net increases in employment opportunity.
- 5.33 In terms of the Freight Hub adding pressures to an industry that is already experiencing supposed skills shortages, I acknowledge that the construction sector has been under capacity pressure for some time. However, if the NoR is confirmed, construction will not commence immediately due to lead times associated with the finalisation of design and associated regional consents that will be required. That lead time will provide an opportunity for the city and region to clearly signal the need for more construction workers and for prospective workers to react accordingly.
- 5.34 Moreover, there are several carefully-planned and well-resourced Central Government and industry initiatives that have been designed specifically to address sector capacity constraints. These include:
- (a) The 2019 Construction Accord – which will strengthen the partnership between Central Government and industry and help transform the construction sector for the benefit of all New Zealand. It identifies four shared goals and assigns responsibilities to different stakeholders to help achieve them. Most importantly, it recognises the need for a more skilled and reliable workforce to overcome capacity constraints that have limited construction activity in the past.
 - (b) 2018 Construction Skills Strategy and Action Plan – This has seen the Central Government collaborate with industry to drive a rapid and sustainable shift that delivers the right people, at the right time, with the right skills, to meet New Zealand's current and future construction needs.
 - (c) A new authority – Kāinga Ora – has been recently created, which will deliver on Central Government's vision of healthy, secure, and affordable homes within diverse and thriving communities. It has a broad range of statutory powers that will enable it to deliver new construction projects in a far more streamlined and coordinated manner than before.
- 5.35 In addition to these new initiatives, which will directly assist the sector along several dimensions (including capacity), the earthquake-related construction

activity in Christchurch has begun to taper off, which is releasing resources for deployment elsewhere and is hence helping to ease nationwide capacity constraints. This is illustrated in the chart below, which plots the gross floor area of new building work consented in Christchurch city each year since 1991.

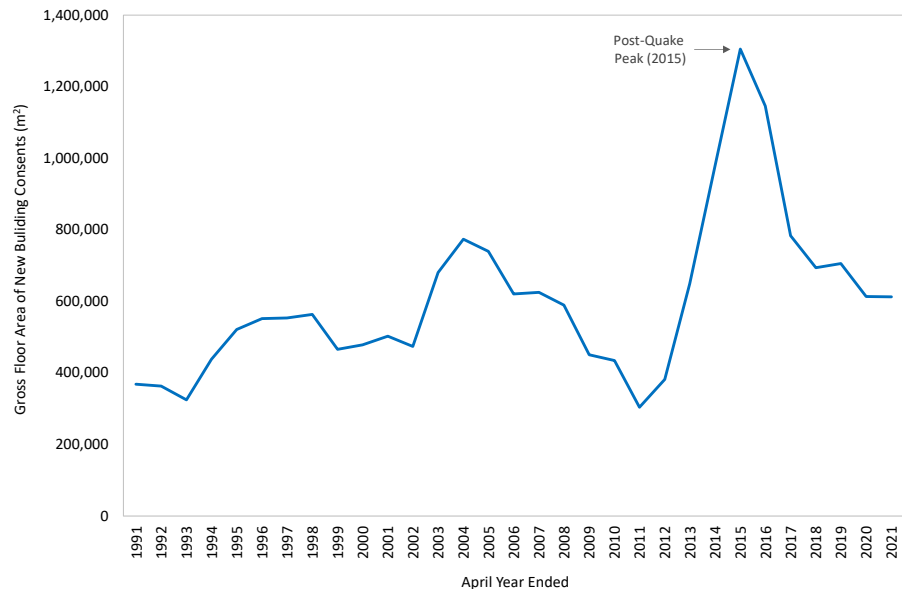


Figure 10: Christchurch City Consents for New Buildings – Gross Floor Area (m2)

- 5.36 As a result, I disagree that the Freight Hub will exacerbate perceived prevailing construction sector pressures to any material degree.

Industrial Land Impacts

- 5.37 One submitter expressed concern about the Freight Hub's impacts on industrial land. Specifically, Danelle O'Keefe and Duane Butts note that future uses of the Existing Freight Yard site are unknown and that KiwiRail has not made any undertakings in that regard. They further opine that the Freight Hub negatively effects the availability of land in the NEIZ and essentially creates a monopoly on real estate in the NEIZ.
- 5.38 I acknowledge that the future use of the Existing Freight Hub site has yet to be determined, which is understandable in my view given that KiwiRail's focus has been to secure designation for the new site first. This does not mean that they will unduly delay decisions about how the existing land will be reallocated if the NoR for the Freight Hub is confirmed.
- 5.39 I agree that the Freight Hub will consume land in the NEIZ, but I disagree that it creates a monopoly on such land or will have enduring effects on the ability of local businesses to find suitable space there.

- 5.40 I addressed these matters at paragraphs 4.24 to 4.28 above, where I noted that the Freight Hub – and other activities have already established in the NEIZ in anticipation of it – have consumed significant chunks of NEIZ land.
- 5.41 However, since I am not aware of any factors that would preclude the successful identification and rezoning of additional land to offset the increased uptake of NEIZ due to the Freight Hub and complementary land uses, it seems unlikely that there will be any adverse economic effect.
- 5.42 Conversely, the development of the new Freight Hub in this location will instead give effect to PNCC's stated objective of using "Palmerston North's central location and access to road, rail and air transport to build a significant future-proofed freight and distribution hub."

6. RESPONSE TO SECTION 42A REPORT

- 6.1 I have reviewed the sections of the Section 42A Report relevant to my evidence, particularly section 5.3.1 of the Section 42A Technical Evidence by Shane Vuletich, dated 18 June 2021, which addressed my estimates of construction impacts.
- 6.2 While Mr Vuletich agrees that construction will generate significant economic benefits, he disagrees with the methodology that I used to estimate the likely impacts on GDP, incomes, and employment.
- 6.3 Before I respond to Mr Vuletich, I wish to reiterate that there is strong agreement between PNCC and KiwiRail that the project will deliver significant economic benefits and will help PNCC to achieve its vision of enabling a significant, future-proofed freight and distribution hub. I therefore respond to the issues raised by Mr Vuletich purely for completeness.
- 6.4 At paragraph 113(a) of the Section 42A Technical Evidence by Shane Vuletich, Mr Vuletich concludes that my estimates of construction benefits are overstated because they are based on an economic impact assessment ("EIA"). He goes on to contend that social cost benefit analysis ("CBA") is the preferred methodology of Central Government agencies, and hence that I should have used that instead.
- 6.5 I agree that CBA is a common methodology used by Central Government, particularly for assessing specific policies and / or comparing the likely impacts of competing investment options.

- 6.6 However, social CBA is not the preferred method for assessing transport projects, as Mr Vuletich intimates, with such assessments instead directed by Waka Kotahi's *Monetised Costs and Benefits Manual* ("**MCBM**").²⁰
- 6.7 The MCBM is a highly detailed (379-page) manual that provides detailed procedures for assessing the likely economic impacts of transport projects. I understand that it closely informed the economic assessments already completed by Mr Paling prior to my involvement in the project. However, as far as I am aware, the MCBM does not address the employment impacts of transport projects, which I was tasked with estimating.
- 6.8 It is also critical to consider the context in which the EIA was used. In late 2020, the NoR was lodged along with a suite of detailed technical reports, including an economic analysis by Mr Paling (which, again, I understand was conducted according to the MCBM).
- 6.9 Later that year, KiwiRail received a request for further information under section 92 of the RMA. Amongst other things, the first further information request requested a quantitative assessment of the economic impacts of the project on employment, plus the related effects on housing demand.
- 6.10 Given that the Freight Hub's likely other economic and non-economic effects had already been assessed and noting the first further information request's focus on a quantitative assessment of employment impacts, EIA was the logical choice. Indeed, the key use of EIAs is to estimate the employment (and GDP) impacts of planned economic activities, such as the proposed new Freight Hub. Accordingly, I disagree that a social CBA should have been used instead.
- 6.11 I also note that, in an RMA context where the focus is on the effects of a specific proposal, and where detailed information on all other effects has been provided by subject matter experts (and then synthesised in the corresponding Assessment of Environmental Effects), it is wholly inappropriate for an economic assessment to attempt to weigh them all up in a social CBA.
- 6.12 Doing so would not only lead to double-counting of non-economic effects (because they are already addressed in separate technical reports), but would also unduly elevate the status of the economic assessment beyond that of all other technical experts (such as noise, traffic, social, and so on). In addition, many of the non-economic effects that would presumably feed into such a CBA elude quantification, let alone monetisation (as required for a CBA).

²⁰

This replaced the former Economic Evaluation Manual in 2020.

- 6.13 Finally, I note that Treasury’s guidance on social CBA also acknowledges that “EIA can provide useful contextual information for decision makers” despite not being a suitable tool for weighing up all the economic and non-economic costs and benefits of a specific project or decision.²¹
- 6.14 Accordingly, while I acknowledge that social CBA is a commonly used tool for Central Government decision making, particularly for the comparison of competing investment options, I disagree that it should have been used to estimate the likely employment effects of the proposed Freight Hub, as requested in the first further information request.
- 6.15 In section 5.5 of his Economics Report, Mr Vuletich identifies various potential economic benefits arising from the release of land from its current use at the Existing Freight Yard. However, he then concludes that these should be afforded relatively little weight as KiwiRail has yet to commit to a specific course of action to make that land available for new uses in future.
- 6.16 While KiwiRail does not yet have any firm plans for the Existing Freight Yard. However, in my view, this is understandable given that KiwiRail's focus has been to secure designation for the new site first. However, this does not mean that little weight should be placed on potential future uses of the Existing Freight Yard.

Fraser Colegrave

9 July 2021

²¹ Treasury, Guide to Social Cost Benefit Analysis, July 2015, paragraph 244, page 54.

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

**STATEMENT OF EVIDENCE OF KAREN BELL
ON BEHALF OF KIWIRAIL HOLDINGS LIMITED**

PLANNING

1. SUMMARY

- 1.1 KiwiRail has lodged a NoR to designate approximately 177 ha of land for a Regional Freight Hub in Palmerston North. The designation will provide for the construction and operation of the Freight Hub on the North Island Main Trunk Link ("**NIMT**"). In selecting the preferred location for the Freight Hub, I consider that KiwiRail has undertaken a robust assessment of alternatives.
- 1.2 The Freight Hub will result in significant positive effects, including reduction in greenhouse gas emissions by enabling freight transport by rail, national, regional and local economic benefits from both the construction and operation of the Freight Hub, as well as landscape and visual amenity benefits from landscape planting. These benefits will help to support Palmerston North's growing role as a key logistics and distribution hub for the North Island, building upon the services already provided for at the existing rail yard on Tremaine Avenue ("**Existing Freight Yard**").
- 1.3 The scale and complexity of a project like this means there will be a range of adverse effects as a result of the construction and operation of the Freight Hub. However, I consider that with the range of mitigation measures and the management tools (including the future Outline Plan of Works phase) incorporated into the design of the Freight Hub and the Proposed Conditions, these effects can be avoided, remedied or mitigated. The Proposed Conditions will ensure that mana whenua, key stakeholders and the wider

community have the ability to provide input as the project progresses, and any effects on them can be carefully addressed.

- 1.4 In my opinion, the Freight Hub is consistent with relevant planning and other strategic documents, as summarised in Appendices 2 and 3 of my evidence. I consider that the NoR for the Freight Hub meets the statutory requirements of section 171 of the RMA. I consider that the Commissioners should recommend that the NoR be granted subject to the Proposed Conditions as sought by KiwiRail, attached as **Appendix 1**.

2. INTRODUCTION

- 2.1 My full name is Karen Anne Bell. I am a Principal Planner and Technical Specialist at Stantec. I hold the qualifications of Bachelor of Arts majoring in Geography and a Bachelor of Town Planning, both degrees from the University of Auckland. I am a full member of the NZ Planning Institute.

Experience

- 2.2 I have over 30 years of experience in the NZ Planning industry, working for Auckland City Council for over 20 years primarily in district plan development which included processing Notices of Requirement. I moved into the private sector in 2007 working for seven years at Hill Young Cooper, where I was involved in a range of projects. One of the projects involved processing KiwiRail's Notice of Requirement and regional consents to deliver the 20 km rail spur from the North Auckland Line at Oakleigh to Marsden Point. I undertook this work on behalf of both Whangarei District Council and Northland Regional Council.
- 2.3 Since moving to Stantec, (formerly Montgomery Watson Harza and known as MWH) in November 2014 I have assisted a range of public sector clients in the delivery of a range of projects, primarily transport and water infrastructure.

Involvement in the Freight Hub

- 2.4 I was engaged by KiwiRail to provide technical planning advice and have been involved with the Freight Hub project since early 2019. I am the Technical Lead for the Stantec project team in relation to the preparation of the NoR.
- 2.5 The work to lodgement of the NoR has involved three phases, being:
- (a) Phase 1 - Master Planning;

(b) Phase 2 - Site Identification; and

(c) Phase 3 - NoR and Assessment of effects.

2.6 Both Phases 1 and 2 were led by technical specialists in relation to the specific outputs of those phases and I have led Phase 3.

2.7 As Technical Lead I have been responsible for ensuring that KiwiRail received the technical support required to deliver a NoR that met KiwiRail's operational requirements for the Freight Hub and the requirements of the RMA.

Phase 1

2.8 In Phase 1, I supported a rail expert from our Canadian business (who has subsequently retired), who was the technical lead for the development of the masterplan. The output of this work is discussed in further detail in Ms Poulsen's evidence.

Phase 2

2.9 Phase 2 was the preparation of the multi-criteria analysis assessment ("**MCA**"). Through this process I attended all of the workshops with KiwiRail representatives, technical specialists, and key stakeholders. The MCA process is discussed in further detail below and in Ms Poulsen's evidence.¹

2.10 I attended some face to face landowner meetings and all the project's public and community engagement sessions. I also assisted KiwiRail in relation to content for the communication and engagement online platform.

2.11 Following the public and community engagement, I was involved in the further refinement of the concept design and development of the extent of the designation for the NoR ("**Designation Extent**").

Phase 3

2.12 Phase 3 involved coordinating our team of experts working with KiwiRail to identify the extent of land required to ensure that KiwiRail's' operational requirements were addressed.

2.13 Following my involvement in identifying the physical extent of the designation I prepared the NoR and proposed conditions. I also prepared the Assessment of Environmental Effects ("**AEE**").

¹ Evidence of Olivia Poulsen, dated 9 July 2021.

- 2.14 I was also involved in the preparation of KiwiRail's section 92 response dated 15 February 2021 ("**First Section 92 Response**"). This involved:
- (a) assessing the proposal in relation to the relevant objectives and policies of the Horizons One Plan, the National Policy Statement Freshwater Management and other National Policy Statements and the Palmerston North City Council District Plan ("**District Plan**");
 - (b) providing input into other technical expert responses in relation to objectives and policies and provisions of RMA documents;
 - (c) preparation of imagery showing the location of assets overlaid with the concept plan; and
 - (d) the assessment of the potential effects of the NoR on services and assets.
- 2.15 I have assisted in the preparation of the section 92 response dated 21 May 2021 ("**Second Section 92 Response**") in relation to the planning aspects of the questions about air quality and dust effects. I also assisted in the preparation of the section 92 response dated 28 May 2021 ("**Third Section 92 Response**").

Code of conduct

- 2.16 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

- 3.1 This statement of evidence will:
- (a) provide an overview of the Freight Hub project and the NoR;
 - (b) describe the existing environment;
 - (c) summarise the key conclusions of the AEE;
 - (d) assess the NoR against the relevant statutory framework in section 171 of the RMA;

- (e) respond to the submissions received and address relevant matters raised in the Section 42A Report; and
- (f) outline the further proposed amendments to the conditions.

4. OVERVIEW OF THE FREIGHT HUB AND NOTICE OF REQUIREMENT

Project description

- 4.1 The NoR seeks to designate land to construct and operate the Freight Hub. The main elements of the Freight Hub are described in the evidence of Mr Moyle and Mr Skelton's evidence explains the technical inputs that went into the development of the Freight Hub.²
- 4.2 The development of the Freight Hub is necessary to accommodate the forecasted future growth in freight movements by rail with longer trains required to make rail freight more efficient. The Freight Hub is proposed to operate twenty-four hours a day, seven days a week. The Freight Hub will eventually replace the constrained Existing Freight Yard and will include all the activities at the Existing Freight Yard, except for the passenger terminal and network communication centre.

Notice of Requirement

- 4.3 The NoR applies to approximately 177.7 ha of land that is located to the north of Roberts Line, east of the Mangaone Stream and includes Railway Road on its eastern boundary. The Designation Extent is located between Palmerston North Airport and Bunnythorpe as outlined in Figure 1 below.

² Evidence of Todd Moyle, dated 9 July 2021, at section 7 – Key components of the Freight Hub; Evidence of Michael Skelton, dated 9 July 2021, at section 5.

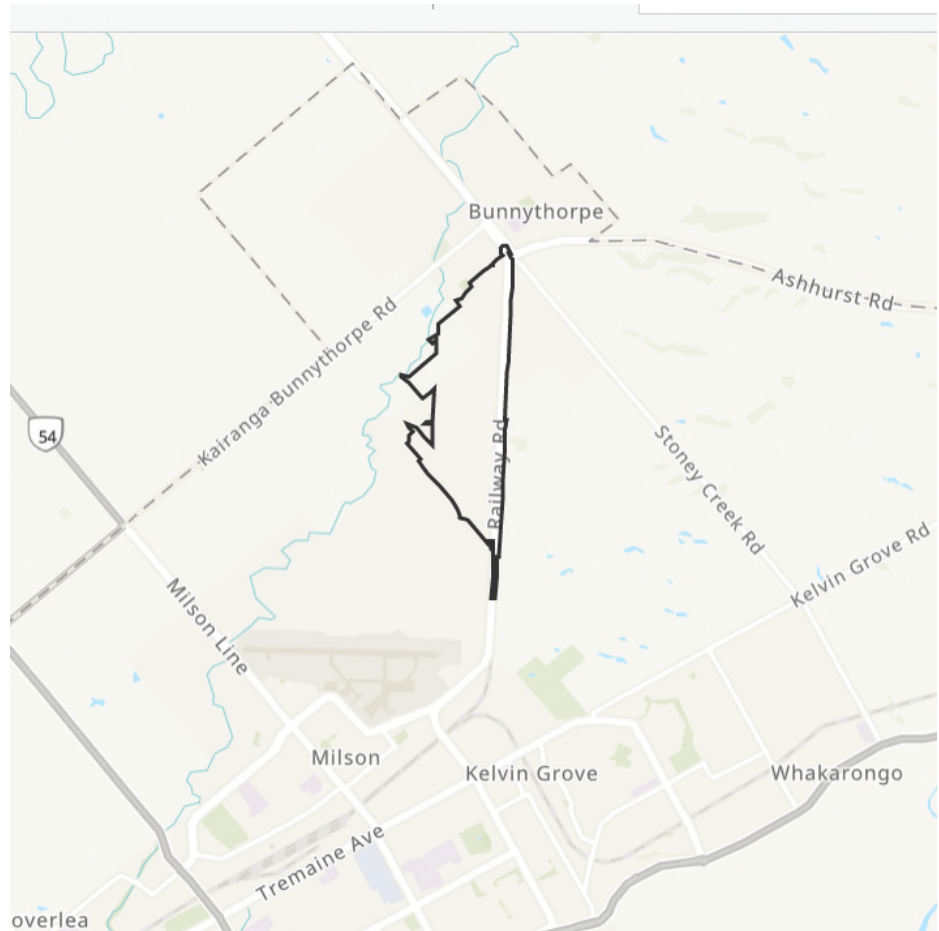


Figure 1 – Designation Extent

- 4.4 The Designation Extent as noted above includes a section of Railway Road from Roberts Line to Maple Street and also includes the 2.4km long section of the North Island Main Trunk ("**NIMT**") located between Railway Road and Sangsters Road.
- 4.5 The Designation Extent includes enough land to ensure that the Freight Hub can meet anticipated freight growth and that the effects of the operating the Freight Hub can be appropriately managed and mitigated. This includes land:
- (a) for ponds and wetlands of sufficient size to both manage the quality of the stormwater discharged from new impervious surfaces, and to hold back the discharge until after a rain event passes. The Designation Extent also includes the area of land required to enable the ponds to drain to the local stormwater system. The detail about the stormwater approach is described in the evidence of Mr Leahy.³ As this is the NoR stage, a key consideration of determining the

³ Evidence of Allan Leahy, dated 9 July 2021.

extent of land required in the Designation Extent and its shape was ensuring that:

- (i) there was sufficient area provided to manage the potential effects of contaminants in stormwater discharged from the Freight Hub;
 - (ii) upstream stormwater can be conveyed through / under the Freight Hub; and
 - (iii) there is no risk of upstream flooding effects or adding to the flood levels downstream.
- (b) to provide for a new perimeter road to provide access to the Freight Hub. The new road will extend from the Richardson Line / Roberts Line intersection at the southern end of the Freight Hub to Railway Road at the northern end. The road will also replace some of the connectivity currently provided by Railway Road. The detail about the need for this road connection is described in the evidence of Mr Georgeson and Mr Skelton;⁴
- (c) occupied by a section of the NIMT to enable that land to be recontoured to the same vertical alignment as the Freight Hub. The NIMT will be relocated immediately adjacent to the arrival and departure yards of the Freight Hub. The proposed use of the land currently occupied by the NIMT is described in (d)(i) below;
- (d) for the works required to mitigate the effects of operational noise including:
- (i) a three km long high noise bund / wall that will extend from Stony Creek Road to beyond the Roberts Line / Railway Road intersection. The top of the wall will be five metres above the level of the Freight Hub; and
 - (ii) a high noise barrier, comprising a combination of bunding and noise walls will be formed to the north and west of the new perimeter road. The details of the noise mitigation proposals are described in the evidence of Dr Chiles.⁵

⁴ Evidence of Michael Skelton, dated 9 July 2021, at section 5 – roads and connectivity.

⁵ Evidence of Stephen Chiles, dated 9 July 2021, at section 7.

- (e) for an extensive area of landscaping in the areas occupied by the noise barriers and stormwater ponds. The detail about the landscaping and visual mitigation is described in the evidence of Ms Rimmer;⁶ and
- (f) required on Sangsters Road to provide access for two specific properties, due to removal of a level crossing access they informally use from Railway Road.

4.6 The purpose of the designation is to develop, operate and maintain railways, railway lines, railway infrastructure, and railway premises as defined in the Railways Act 2005, and activities and infrastructure required to enable the transportation of goods by rail and road. The Freight Hub is reasonably necessary to enable KiwiRail to achieve its objectives that are to:

- (a) increase its operational capacity to efficiently accommodate projected regional and national freight growth and support wider regional development;
- (b) enable rail to be integrated with, and connected to, other transport modes and networks; and
- (c) improve the resilience of the regional and national freight transport system over time.

4.7 KiwiRail seeks a 15-year lapse period for the designation in the District Plan. The following actions need to be undertaken before construction of the Freight Hub can commence (not necessarily in this exact order):

- (a) obtain funding commitments to undertake the bulk earthworks to enable this to occur;
- (b) relocate the NIMT (which as discussed below will require an alteration to the existing designation);
- (c) acquire all the land within the Designation Extent;
- (d) stop the legal roads within the Designation Extent and arrange access to properties affected by road closures (in conjunction with Palmerston North City Council ("**PNCC**");

⁶ Evidence of Lisa Rimmer, dated 9 July 2021, at section 8.

- (e) undertake further site analysis and on site surveys and investigations to inform the development of the detailed design for the Freight Hub including earthworks and trackwork, building layout, services and stormwater;
- (f) undertake further engagement and ongoing consultation with stakeholders and community;
- (g) obtain other relevant approvals including regional resource consents and archaeological authority;
- (h) prepare the Outline Plan of Works;
- (i) tender and award the construction contract(s), and prepare management plans to comply with the designation and any regional consent conditions;
- (j) source fill material required for the bulk earthworks;
- (k) pipe and divert existing watercourses and undertake bulk earthworks to establish the Site;
- (l) allow sufficient time for the works to stabilise prior to relocating the rail track for the NIMT and commencing construction of the Freight Hub and perimeter road; and
- (m) install permanent noise barriers and vegetation where appropriate.

4.8 Given the scale and significance of the project, as well as the complexity of the design and works involved, in my view the five year default period in the RMA is insufficient. The 15-year lapse period sought is necessary and appropriate to provide KiwiRail certainty that it can undertake the necessary steps required to enable the Freight Hub to be delivered. A 15-year lapse period would also be in line with other projects of a similar scale and complexity, such as Transmission Gully and the City Rail Link, each of which had a 15 year lapse period. This would also provide time for PNCC to consider future zoning of the surrounding area and for integration with wider regional transport network improvements.

Other approvals

4.9 Regional resource consents under the Horizons' One Plan or its successor are expected to be required for:

- (a) bulk earthworks;
- (b) discharges from the disturbance of contaminated soil;
- (c) stormwater discharged to existing streams from the stormwater management devices;
- (d) stream works including the diversion of existing watercourses and installation of culverts; and
- (e) the alteration to the existing designation for the NIMT.

4.10 In addition, resource consents are expected to be required under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health ("**NES-CS**") for the change in use and as the volume of land to be disturbed will exceed the permitted activity standards in the NES-CS, and under the National Environmental Standard for Freshwater Management ("**NES-F**") for the stream works related to installation of culverts.

4.11 As outlined in the evidence of Mr Parker, three sites within the Designation Extent have been verified as archaeological sites as defined in the Heritage New Zealand Pouhere Taonga Act ("**HNZPTA**"). It is expected that an archaeological authority will need to be obtained for these sites and any other archaeological sites identified that meet that definition and as a precautionary measure.

4.12 It is also possible that permits under the Wildlife Act 1953 may be required for the relocation of animals, fish and birds located on the land affected.

4.13 These other approvals are not being sought concurrently with the NoR. In my opinion, this is not necessary at this stage as the detail and timing of future work has not yet been determined.

5. THE EXISTING ENVIRONMENT

Locality

5.1 The Designation Extent lies within the area contained by:

- (a) the Mangaone Stream in the west;
- (b) Sangsters Road to the east;

- (c) Roberts Line and the North East Industrial Zone (NEIZ) land to the south; and
 - (d) Maple Street to the north.
- 5.2 Within the Designation Extent are approximately 20 dwellings on small lifestyle properties, and land (that includes unformed legal road) farmed by a small number of landowners.
- 5.3 Palmerston North Airport is located to the south and the Bunnythorpe township is located to the north. The take off and approach paths to the Airport are located to the south of the Freight Hub and the Designation Extent. The northern end of the Designation Extent is to the immediate south of the residential zoned land and the Bunnythorpe Cemetery on Maple Street.
- 5.4 Railway Road and the existing NIMT are located within the eastern side of the Designation Extent as is a small unformed section of Sangster Road. There are dwellings located along the eastern side of Sangsters Road, with some on residential zoned sites accessed from Nathan Place at the northern end and some on rural zoned land accessed from the formed section of Sangsters Road between Clevely Line and Parrs Road.
- 5.5 On the western side of the Designation Extent are several lifestyle properties and farms located between the Designation Extent and the Kainga – Bunnythorpe Road.
- 5.6 To the south in the North Eastern Industrial zone ("**NEIZ**") land on the opposite site of Roberts Line is the Foodstuffs Distribution Centre and currently several lifestyle properties.
- 5.7 The northern end of the Designation Extent is around 7.79m higher than the southern end. The NIMT and Railway Road undulate along their lengths in this location as there are gullies and watercourses that pass in culverts under these two pieces of transport infrastructure. Generally, the land falls away from the NIMT in a south westerly direction towards the Mangaone Stream.

Landscape

- 5.8 The existing landscape is described in the evidence of Ms Rimmer.⁷ In summary, the land within the Designation Extent is relatively open and largely undeveloped. There are low lying areas associated with the open

⁷ Evidence of Lisa Rimmer, dated 9 July 2021, at section 6.

watercourses that flow through the Designation Extent from Railway Road towards the Mangaone Stream. The low lying areas within the Designation are identified as flood prone in PNCC's planning maps.

- 5.9 Vegetation within the Designation Extent is described as including naturalised exotic weeds along the waterways and mature shelter belts and trees. There is some indigenous vegetation in the form of recent planting along the Mangaone and naturalised low growing plants along the tributaries and around the recent rural lifestyle developments either along fence lines or around buildings and or / houses.

Zoning and Land use

- 5.10 Approximately two thirds of the Designation Extent is in the Rural zone and the remainder is zoned NEIZ, apart from the small area of land to the north described in paragraph 5.1 above as being zoned residential.⁸ KiwiRail has an existing designation in the District Plan being designation 3 – Railway Purposes. In addition to the NIMT, several formed roads fall within the Designation Extent and there are paper roads that are leased to local landowners and grazed.
- 5.11 Apart from a small area of Class 6, the land in the Designation Extent is classified either as Class 2 or 3 under the New Zealand Land Resource Inventory Land Use Capability (LUC) Classification system. As far as I am aware none of the land is used for horticultural purposes.

Geology and geomorphology

- 5.12 The soil types are outlined in the evidence of Mr Mott.⁹ The Designation Extent is a mix of recent alluvium in the gullies and alluvial terrace deposits.

Network utilities

- 5.13 There are existing network utility assets present in the Designation Extent, including a Transpower pylon located at the northern end between Railway Road and Maple Street. Transmission lines run across the NIMT and Railway Road to the pylon, and from there to a pylon outside the Designation Extent close to Maple Street.
- 5.14 A First Gas high pressure gas pipeline bisects the Designation Extent, and a wastewater sewer line runs along Railway Road. There are also Power Co

⁸ I note that this was not identified in the AEE supporting the NoR as lodged.

⁹ Evidence of Andrew Mott, dated 9 July 2021, at section 5.

lines and poles located in the roads. PNCC's water supply bore site is located adjacent to the Designation Extent at the corner of Railway Road and Roberts Line and there are other network utility assets such as power lines in the formed roads.

Hydrology

Catchment

- 5.15 The Designation Extent is within the Mangaone Stream catchment and water drains towards the Mangaone Stream. Based on the 200-year flood maps available from the Horizons Regional Council ("**HRC**") two flood plains are located within the Designation Extent. Stormwater from the Northern and Central upstream catchments are conveyed through the Designation Extent, as described in the evidence of Mr Leahy.¹⁰

Watercourses

- 5.16 There are two stream systems identified in the Designation Extent (described as stream systems 1 and 2 in the evidence of Mr Garrett-Walker)¹¹:
- (a) stream system 1 has four tributaries which converge into a single channel upstream of Te Ngaio Road. The northern most branch is now considered permanently wet and the others ephemeral. The northern tributary has no functional riparian vegetation, has poorly defined channel / banks and pasture grasses are common within the stream channel.
 - (b) stream system 2 has two tributaries that converge downstream of the Designation Extent. The northern tributary is considered to be perennial but is largely unfenced and lacks a riparian buffer and unlikely to provide reasonable habitat/conditions to aquatic fauna other than those highly tolerant of adverse conditions. The southern tributary is considered ephemeral.
- 5.17 The streams flow in an east to west direction before draining into the Mangaone Stream.
- 5.18 Stable fish habitat is limited to the northern branch of stream system 1 and the northern tributary of stream system 2 and fish present are considered to be limited to only eel and koura with any regularity, although in low abundance.

¹⁰ Evidence of Allan Leahy, dated 9 July 2021, at section 5.

¹¹ Evidence of Jeremy Garrett-Walker, dated 9 July 2021 at section 6 – stream environment.

- 5.19 Mr Garrett- Walker has reviewed the stream systems and Designation Extent and considers the potential ecological effects of stream loss as very low over all and in relation to the Mangaone Catchment as a negligible magnitude of effect. Based on best practice being observed he has considered it highly likely that long culverts can support an aquatic fauna and sediment inputs will have a very low level of effect.¹²
- 5.20 He has also considered the definition of wetland in the NPS-FM and has concluded that no natural inland wetlands have been located within the Designation Extent based on Site investigations to date and it is unlikely that any would be present on sites that would have not been visited.

Groundwater

- 5.21 Groundwater levels vary with several ground water bores including the PNCC water bore located in the area.

Flora and Fauna

- 5.22 The Site is within the Manawatu Plains Ecological District which is highly modified and dominated by pasture and exotic vegetation. Common bird species are those typical of highly modified agricultural landscapes, such as magpies, sparrows, and blackbirds. Some native species, such as silver eye, pukeko and kingfisher are also likely to be present though the pastoral habitat is not necessarily used as primary habitat.
- 5.23 It is unlikely that indigenous fish species are present in the streams, although occasionally be frequented by eels during wet periods. Eels and common bully may reside in the lower third of stream system 2.
- 5.24 Further details on the existing ecological environment are outlined in the evidence of Mr Garrett-Walker.¹³

Historic and cultural heritage

- 5.25 Pre-1864, the area is described as having been used by Māori for low intensity, seasonal occupation with a focus on freshwater fisheries, hunting, trapping and the collection of other forest resources. This changed with sale of the Ahuatunga Block to the Crown in 1864 as early European settlers were required to improve the land before they could permanently acquire title, and the land was cleared and drained.

¹² Evidence of Jeremy Garrett-Walker, dated 9 July 2021 at section 8.

¹³ Evidence of Jeremy Garret-Walker, dated 9 July 2021, at section 6.

- 5.26 The Site is entirely within the historic town and suburban limits of the old township of Bunnythorpe and was farmed and settled in the 1880's and 1890's. The junction of the east, west and main trunk rail lines that had originally been anticipated at Bunnythorpe ended up in Palmerston North, and the township did not grow as originally anticipated, with Palmerston North becoming the largest township in the Manawatu.
- 5.27 There are three verified archaeological sites as defined in the HNZPTA located within the Designation Extent. These are the Rogers' house, at 489 Railway Road, the Clevely house site, at 121 Clevely Line, and the Clevely historic section (Bunnythorpe Suburban Section 1510 at 121 Clevely Line).
- 5.28 There are no verified sites of Māori origin within the Designation Extent, but areas of highest archaeological potential are likely to be near the various streams and waterways or any areas of historic wetland. Due to the historic settlement of the area, there are 197 sites within the Designation Extent that have archaeological potential.
- 5.29 Due to the historic settlement of the area, there are 197 sites within the Designation Extent that have archaeological potential.
- 5.30 Further detail on the archaeological context of the Freight Hub is outlined in the evidence of Mr Parker.¹⁴

6. ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

Positive effects

- 6.1 There are a range of significant positive effects expected from the Freight Hub, which are described below. Further work has been undertaken as part of the section 92 responses to quantify where possible the positive effects.

Road safety benefits

- 6.2 Road safety benefits include:
- (a) enabling the reduction in the number of freight trucks on the wider North Island road network relative to rail, as more freight will be able to be moved by rail;
 - (b) the removal of one rail level crossing on Railway Road (two others are being closed independently of the Freight Hub); and

¹⁴ Evidence of Daniel Parker, dated 9 July 2021.

- (c) the new perimeter road will be constructed to modern design standards which will lower the risk currently experienced by traffic on Railway Road.

Reduction in greenhouse gas emissions

- 6.3 By enabling the increased use of rail relative to road for moving freight the Freight Hub will contribute the reduction of greenhouse gas emissions through low carbon transportation of freight. As outlined in the evidence of Mr Moyle, transporting a tonne of freight by rail generates 70% less emissions than road transport.¹⁵ In terms of emissions costs, freight moved by road between Auckland and Palmerston would have an emission cost of \$9.00 per tonne, compared to \$3.10 per tonne for rail with road connections.
- 6.4 The Freight Hub will also contribute to emissions reductions by enabling more freight to be transported through electrified parts of KiwiRail's network, utilising the electrified section of the NIMT between Palmerston North and Hamilton.
- 6.5 The Freight Hub will also enable the introduction of longer trains, which are more fuel efficient, further contributing to emissions reductions.

Economic benefits

- 6.6 The benefits of introducing both additional container handling capacity and use of longer trains from commencement of operation of the Freight Hub are estimated to amount to about 1.3 billion in total. These benefits do not take into account any other measures by central government or other agencies to encourage the use of rail further to achieve social or environmental outcomes (and so for that reason are conservative estimates). Of these benefits, the benefits to Palmerston North would amount to about 20%, with benefits to the wider community amounting to 40%.
- 6.7 Longer trains are also more fuel efficient and provide other economies of scale benefits, which will result in reductions in the operation costs of rail. This will help to increase rail's competitive advantage over road for freight transport and help to encourage modal shift. This was because the diversion of freight traffic away from the road network will reduce the level of congestion on the network which will provide benefits to road users and local businesses.

¹⁵ Evidence of Todd Moyle, dated 9 July 2021, at paragraph [4.3].

- 6.8 The operation of the Freight Hub is expected to provide for more efficient and reliable movement of containers by allowing more efficient and potentially faster handling with consequent further benefits to users.
- 6.9 The Freight Hub will generate significant short term construction and long term operational employment opportunities, providing significant investment in the Manawatu Region and Palmerston North District. Construction of the Freight Hub is estimated to create full-time employment for nearly 920 people over the likely 10 years it will take to construct. Employment at the Freight Hub once operating is likely to be a small increase on the Existing Yards levels to 585 in stage 1 and just over 1,000 at completion. This is a conservative assessment and there is potential for this figure to be significantly higher. This investment will also help with New Zealand's long term economic recovery from the impacts of Covid-19.
- 6.10 The establishment of the Freight Hub and corresponding release of land from the Existing Freight Yard in Palmerston North City for alternative uses is also considered a positive economic effect.
- 6.11 Local businesses are also expected to benefit from opportunities to relocate close to the Freight Hub, with further expansion of logistics activities in the NEIZ. These benefits are also expected to extend to specialist support services to support businesses in the area (particularly the logistics industry), and the provision of other activities in the area to service the social needs of those working there.
- 6.12 Business development close to the Freight Hub will also provide for a more integrated industrial structure, with more support for facilities located within or adjacent to the Freight Hub, reducing the costs or increasing the attractiveness of business.
- 6.13 The Freight Hub will also improve the value of the industrial land in the NEIZ adjacent to the Freight Hub, accelerating uptake of this land which has to date experienced slow growth.

Noise and vibration benefits

- 6.14 Noise and vibration benefits relate to the removal of activity at the Existing Freight Yard likely resulting in reduced noise exposure for nearby houses, particularly to the north.
- 6.15 Realignment of the NIMT between Roberts Line and Bunnythorpe will enable construction of the east noise barrier and reduce noise and vibration at houses

to the east. With the NIMT moving further away from these houses, the flattened, newer sections of track will be quieter, and the removal of road crossings over the railway will reduce the need for bells or train horns on that section of the NIMT.

- 6.16 Some road closures will also provide positive noise and vibration effects for the local area, including removal of a section of Railway Road between Roberts Line and just before Maple Street, reduce road-traffic noise at houses to the east, and closure of Roberts Line at Railway Road will result in less traffic to the south on Roberts Line, reducing road traffic noise to nearby houses.

Landscape and visual benefits

- 6.17 The significant amount of landscape planting proposed across the Site, particularly the area of naturalised lowland bush and wetland vegetation near the naturalised channel and stormwater ponds will create positive natural character effects given that the existing tributaries through the Site are highly modified and have low natural character values.
- 6.18 The proposed footpath and off-road track increases options for walking and cycling in the area. This combined with the opportunities for a lookout on Te Araroa Trail, and with planting along the perimeter road, will contribute to positive urban landscape effects.
- 6.19 The scale of the development also means a comprehensive and integrated landscape planting package is being implemented over a large area. This provides for a more integrated landscape than would otherwise occur through smaller, piecemeal developments.

Stormwater benefits

- 6.20 As with landscaping, the Freight Hub will establish a comprehensive stormwater management system across a large area, which will provide better stormwater outcomes than small, incremental developments otherwise would. The stormwater management system will help to reduce upstream flooding, due to specific culvert design and climate change resilient culvert design.
- 6.21 The stormwater management system will also reduce sediment loads with the land use change from rural to urban. Onsite collection and use of captured stormwater is another low impact design technique expected to be implemented that will help runoff mimic natural runoff processes.

Ecology benefits

- 6.22 The stormwater management system will provide opportunities to improve fish passage upstream of the Freight Hub as modern culvert design standards require fish passage to be enabled. Some of the stream tributaries do not allow for fish passage in their current state.
- 6.23 While the stormwater pond and wetland systems are not being installed as ecological mitigation or offsetting, these areas provide opportunities for indigenous wetland habitat for wetland adapted fauna. This will result in an overall net gain in wetland habitat from the Freight Hub.
- 6.24 Other features proposed within the Site, such as the landscape planting and stormwater ponds, will be an overall betterment in terms of avifauna habitat.

Social impact benefits

- 6.25 The employment opportunities expected from the Freight Hub are also expected to benefit the local community where they provide improved viability of community services such as Bunnythorpe School are noted in the Social Impact assessment as being possible benefits from the changing population.
- 6.26 In the following sections, I outline the potential adverse effects of the Freight Hub.

Economic effects

Construction

- 6.27 The construction of the Freight Hub will result in the removal of Railway Road which is the key transport link between the east of Palmerston North and Bunnythorpe, as well as Feilding and areas to the north. Mr Paling notes that the changes to the roading arrangements and the length of construction effects will impact on businesses such as Foodstuffs currently located along Roberts Line as the traffic flows along Roberts Line will increase.¹⁶
- 6.28 Mr Colegrave notes that increases in employment associated with the construction of the Freight Hub will increase the demand for local housing, and hence potentially place some pressure on the city's housing market.¹⁷
- 6.29 As the Freight Hub will consume approximately 177 hectares of land, about 50 hectares of which is currently zoned as NEIZ and this reduces the amount of

¹⁶ Evidence of Richard Paling, dated 9 July 2021, at section 7.

¹⁷ Evidence of Fraser Colegrave, dated 8 July, at section 4 – effects on housing demand.

industrial land available, although this may be potentially offset by the redevelopment of the Existing Freight Yard for commercial and / or light industrial uses.

Operation

- 6.30 Potential adverse effects are also identified in the evidence of Mr Paling. He notes that relocation of the Existing Freight Yard could limit access for the workforce based in Palmerston North that might be available for employment for activities in the Freight Hub. However, this is expected to be a small negative effect because it is balanced against the opportunities for those living in locations closer to the Freight Hub outlined above, and the adverse effect will diminish over time as workers relocate to be closer to their places of work. Mr Paling's evidence also highlights that as a result of surveys of businesses along Tremaine Avenue, the land along Roberts Line still to be developed under the NEIZ may be less attractive to some to develop and/or lease due to the increase in traffic with the closure of Railway Road and the possible difficulties of accessing sites from a busy main road.¹⁸

Measures to address effects

- 6.31 While in general (as outlined in the evidence of Mr Paling and Mr Colegrave), the Freight Hub will support economic activities in its vicinity, including in the NEIZ, some local businesses that are close to the Freight Hub will experience adverse effects due to the traffic flow and traffic volume changes along with the road changes that will occur around the Freight Hub. There is the potential to mitigate these access issues through road design and by working with businesses such as Foodstuffs, which would, in my view, make effects on this small number of businesses negligible. A number of roading network improvements are also proposed to address these as outlined in the evidence of Mr Georgeson and as set out at 6.43 to 6.59 below.
- 6.32 While specific mitigation for pressure on housing supply is not something that KiwiRail is able to mitigate through the NoR process, I note that the Section 42A Report indicates¹⁹ that the Council considers sufficient land is available to be zoned and serviced to enable more housing.
- 6.33 Increased uptake in the NEIZ may also require the Council to rezone more land for industrial use.

¹⁸ Evidence of Richard Paling, dated 9 July 2021, at section 7.

¹⁹ Section 42A Report, Council Officers Report, at paragraph [818]

Social Impact effects

- 6.34 The social impacts resulting from the Freight Hub are outlined in the evidence of Ms Austin. These relate to changes to the quality and amenity of people's environment and the quality of their daily lives and anxiety, stress, and uncertainty.

Construction

- 6.35 Ms Austin's evidence is that landowners in the local impact area²⁰ will experience uncertainty as to how their property values will be affected.²⁰ Prior to construction, the land within the Designation Extent will need to be acquired by KiwiRail. With the process of property acquisition there are potential impacts on these directly affected landowners. For some, this includes anxiety and stress associated with the acquisition process. For those living within the 'local impact area' but not within the Designation Extent there is additional uncertainty about what the changes associated with construction of the Freight Hub will mean for them.

- 6.36 As outlined above, construction will bring several positive economic benefits in terms of employment opportunities associated with the construction phase which has flow on social benefits. Construction of the Freight Hub is estimated to create full-time employment for nearly 920 people over the likely 10 years. New workers in the area may increase pressure on housing supply.

- 6.37 Amenity effects will impact on those living outside the Site. These are related to noise and visual impacts and increased travel times.

Operation

- 6.38 Uncertainty, stress and anxiety and concerns about impacts on quality of life associated with amenity and health effects and impacts on patterns of day to day living are identified as being associated with the operational phase. In addition, there are effects related to changes in the character and feeling of the community associated with changes to the residential population over time. Housing supply issues may also be related to the increase in employment from operation of the Freight Hub.

²⁰

Evidence of Kirsty Austin, dated 9 July 2021, section 6.

Measure to address effects

- 6.39 Mitigation of some of the effects for landowners inside the Designation Extent is likely to be achieved through the decision being confirmed through the RMA process for the NoR and completion of the land purchase process.
- 6.40 The mitigation of effects for those living in the wider area will be achieved over a longer period. The first step is through completion of the NoR process and the designation being made effective with the final conditions confirmed. This will enable people to move on with their lives and make decisions that could have been placed on hold because of the uncertainty.
- 6.41 Opportunities to be actively involved through the Community Liaison Forum provide opportunities for feedback on the management plans. Involvement in the process could assist in reducing uncertainty associated with the operational phase. The final design and regional consents related to the earthworks and works in the streams will assist to reduce the anxiety and stress associated with concerns of some about the potential flooding of property.
- 6.42 Relocation of the NIMT, installation of the noise barriers and implementation of the Landscape and Design Plan will mitigate some uncertainty about changes in the character and feeling of the community but this will only be achieved over time. Over time seeing decisions being made about the wider roading network will also assist in reducing uncertainty. The Community Liaison Forum will provide a process where KiwiRail can regularly update the community on matters relevant to the Freight Hub. This, together with the Road Network Integration Plan, will ensure that as network integration details are finalised (such as any future ring road), the community will remain informed.

Transportation network effects

Construction

- 6.43 Given the uncertainty about the source of the large volumes of fill required for the bulk earthworks as outlined in Mr Skelton's evidence,²¹ it has not been possible to assess the construction transport effects in detail at this stage. In the absence of identified sources and uncertainty about future road upgrades it is not clear what routes will be followed by heavy trucks. There is also the possibility that rail could form part of the solution.

²¹ Evidence of Michael Skelton, dated 9 July 2021, at section 6.

- 6.44 The size of the Site and the nature of the works, particularly with the need to relocate the NIMT and closure of Railway Road, means that there will be disruption to the current roading patterns. The effect will be reduced by the construction of the perimeter road first before the NIMT is relocated, but for a project of this scale there will be some impacts. Mr Georgeson considers that the new Perimeter Road offers a substantially improved design and safer travel for commuters. While it will result in a marginally longer journey and although there will be an increase in traffic on Roberts Line, the improved design will ensure effects will be minor.²²
- 6.45 The condition of the road network around the Designation Extent will be affected by the movement of heavy vehicles and this effect has been raised in the Section 42A Report. These are existing issues and I consider that it is inappropriate to introduce conditions that require KiwiRail to survey, upgrade or maintain the wider road network (as the Council has requested).

Operation

- 6.46 Once constructed, the Freight Hub is identified as generating changes to the transportation network that include:
- (a) an increase over time in traffic demand and heavy vehicle movements in the local road network in the roads around the Freight Hub (as opposed to the relative reduction in heavy vehicle movements from the road network more generally);
 - (b) a shift in traffic distribution associated with closure of Railway Road and the Roberts Line level crossing; and
 - (c) in the longer term, deterioration of some of local roads from increased use.
- 6.47 Travel times will increase due to the following:
- (a) closure of Railway Road; and
 - (b) closure of the Roberts Line east / Railway Road intersection for those traveling between Kelvin Grove and the NEIZ.
- 6.48 The introduction of longer trains which will increase the delays at the Kairanga Bunnythorpe Road level crossing by 1-2 minutes however it is recognised that

²² Evidence of Mark Georgeson, dated 9 July 2021, at section 7, and paragraph [9.19].

while specific journeys may take longer, the use of that longer trains will result in fewer trains causing delays at the level crossing.

- 6.49 Due to the closure of Railway Road and removal of the Clevely Line level crossing, the current bus route connecting Feilding and Bunnythorpe to Palmerston North will need to be re-routed. There is an opportunity for new bus stops to be provided to serve both the NEIZ and the Freight Hub.
- 6.50 The effects of the Freight Hub include actual and potential changes to the current access arrangements for several sites. There are actual effects on 422 and 422A Railway Road that gain access from an informal level rail crossing from Railway Road as this access will be removed. Changes to Roberts Line west intersection with Railway Road and Roberts Line itself will result in impacts on existing accesses, including to the access to Foodstuffs Limited's parking area.
- 6.51 Te Araroa Trail currently follows the alignment of Sangsters Road which is only partly formed. The Designation Extent includes the unformed section of Sangsters Road and once the works are completed, access along the Trail is expected to be reinstated.

Measures to address effects

- 6.52 Mr Georgeson has outlined in his evidence how he expects the construction traffic effects to be addressed and this includes development of a Construction Traffic Management Plan ("**CTMP**") once the construction details have been confirmed. A number of changes have been made to these conditions in response to the Section 42A Report.
- 6.53 Construction worker parking is expected to be accommodated within the Designation Extent to avoid pressure on on-street parking.
- 6.54 A range of changes and upgrades to the wider regional transport network have been signalled to be delivered by PNCC, working in conjunction with Waka Kotahi NZ Transport Agency ("**Waka Kotahi**"). These include intersection upgrades, bridge upgrades, road widening and safety upgrades.
- 6.55 The loss of the function of Railway Road will be mitigated by the construction of the perimeter road early in the construction phase. Once Railway Road is stopped, KiwiRail has proposed by way of conditions to form an access to Roberts Line for 422 and 422A Railway Road (even though they have legal access to the north to the unformed section of Sangsters Road and east via an unformed section of Richardson Line to Tutaki Road).

- 6.56 There will be consequential changes to the Railway Road / Roberts Line intersection but the removal of the level crossing at Roberts Line signalled in the NoR will have already been removed by PNCC according to Ms Fraser. While the changes to Roberts Line will affect the Foodstuffs' site, KiwiRail is committed to working with Foodstuffs to provide an option that meets Foodstuff's access requirements to its site.
- 6.57 KiwiRail will work with PNCC as to how provision can be made for the Te Araroa Trail both during construction and operation of the Freight Hub. KiwiRail will work with stakeholders in relation the formation and timing of reforming the Te Araroa Trail along Sangsters Road.
- 6.58 Freight Hub will accommodate all its parking within the Freight Hub itself once constructed. There will also be improvements to existing NEIZ accesses along Roberts Line as required.
- 6.59 Other mitigation related to managing traffic effects from the operation of the Freight Hub is outlined in Mr Georgeson's evidence and include the following amended conditions set out in Appendix 1:
- (a) a Level Crossing Safety Impact Assessment ("LCSIA") assessment at four locations to determine the safety risks and need for safety improvements at these level crossings and agree responsibilities for upgrades if required;
 - (b) the development of a Road Network Integration Plan that addresses the integration of the Freight Hub with the wider road network and provision for a range of upgrades if not provided beforehand in condition 48;
 - (c) a requirement to deliver all or part of the perimeter road prior to the closure of Railway Road to ensure connectivity is provided; and
 - (d) the development of an Operational Traffic Management Plan to manage the traffic generated by the operational activities of the Freight Hub and any other measure to manage adverse effects on the transport network.

Noise and vibration effects

Construction

- 6.60 Dr Chiles' evidence indicates that construction noise and vibration effects should be minor due to the separation of works from most houses and scope to avoid night works.²³

Operation

- 6.61 Based on the acoustics model used to predict operational noise generated by activities at the Freight Hub and the ambient noise monitoring undertaken the Dr Chiles' evidence is that unmitigated noise from the Freight Hub would be clearly audible and potentially disturbing at houses in a wide area, as identified in Figure 3 of Dr Chiles' evidence.²⁴ He has also considered road-traffic noise resulting from the new perimeter road.²⁵
- 6.62 Noise effects predicted from the road-traffic noise arising from the operation of the new perimeter road are predicted by Dr Chiles to meet the criteria specified in the District Plan for new road noise (New Zealand Standard 6806).²⁶
- 6.63 Dr Chiles also notes that stopping vehicle movements from Railway Road along the eastern section of Roberts Line because of the removal of the level crossing together with installation of the recommended noise barrier, will result in reduced traffic noise.
- 6.64 The Acoustics Assessment noted that the trains operating in the Freight Hub would be on new ground and track formations which will reduce potential vibration and that due to the 100 m plus distance of the trains from houses to the north, south and west of the Freight Hub no mitigation was necessary. In relation to the houses to the east of the Freight Hub, compliance with the vibration standards was considered likely.

Measure to address effects

- 6.65 Dr Chiles has recommended that construction noise and vibration effects should be managed in accordance with standard practice, including implementation of a Construction Noise and Vibration Management Plan.²⁷ He has suggested that construction noise can be mitigated with permanent or

²³ Evidence of Stephen Chiles, dated 9 July 2021, at paragraph [6.7].

²⁴ Evidence of Stephen Chiles, dated 9 July 2021, at paragraph [6.3].

²⁵ Evidence of Stephen Chiles, dated 9 July 2021, at paragraph [6.4].

²⁶ Evidence of Stephen Chiles, dated 9 July 2021, at paragraph [6.5].

²⁷ Evidence of Stephen Chiles, dated 9 July 2021, at paragraph [7.8].

temporary screening, if required.²⁸ In agreement with the Council Officers' Construction Noise Levels and Vibration Criteria have been included in the Proposed Conditions set out in Appendix 1.

- 6.66 Dr Chiles has also agreed that the road surface for new roads should be specified in the designation conditions (86) to ensure NZS 6806 is met.²⁹
- 6.67 The NoR provides for an extensive noise barrier to be installed around the Freight Hub due to the predicted noise levels outlined in Dr Chiles' evidence and his assessment that was provided in support of the NoR. This is because of the effect of the predicted level of noise exposure on existing dwellings if the mitigation was not provided as part of the NoR. The mitigations include the construction of noise barriers on the east, north and western boundaries of the Freight Hub to reduce the noise levels to less than 55bB LAeq(1h) during the daytime. The barriers are expected to reduce noise to levels permitted under the NEIZ.
- 6.68 Other noise management measures were also recommended that included:
- (a) operation of the Freight Hub in accordance with noise criteria set out in the Acoustics Assessment;
 - (b) determination of where Category A noise criteria may be exceeded (at the time of detailed design) and treatment of affected existing houses where required to achieve internal noise criteria;
 - (c) an operational noise and vibration management plan, including:
 - (i) the measures of how the relevant noise criteria will be achieved;
 - (ii) modelling and monitoring of noise and vibration, including permanent noise monitors; and
 - (iii) good practice site management to avoid unreasonable noise.

²⁸ Evidence of Stephen Chiles, dated 9 July 2021, at paragraph [6.7].

²⁹ Evidence of Stephen Chiles, dated 9 July 2021, at section 9.

Landscape and visual effects

Construction

- 6.69 The combination of effects associated with the long period of construction and the scale of the earthworks and other activities required to establish the Freight Hub are assessed as being high to moderate-high adverse.
- 6.70 The Landscape and Visual Effects Assessment considered the effects of the Freight Hub on the natural character of the Mangaone Stream and its tributaries (the watercourses running through the Designation Extent), the effects of change in the natural and urban landscapes and effects on visual amenity. The introduction of lighting which is required to ensure the safety of those working on the Freight Hub and to meet new roading standards while a change can be controlled, and the effects minimised due to the new technology available.
- 6.71 Ms Rimmer has considered that the existing tributaries through the Site are highly modified and have low natural character values and that effects are related to the loss of the tributaries on the natural character.
- 6.72 The main effects on natural landscape were identified as being from recontouring of the Site and the introduction of new built forms.

Operation

- 6.73 The urban landscape effects were identified as being related to the overall fit of the Freight Hub, its noise barriers, larger scale buildings and the changes with the perimeter road with the existing urban patterns.
- 6.74 The effects on visual amenity are related to impacts of the change of views for different viewing audiences such as those travelling (by train, walking and driving) and those with close views as they live nearby. This is also affected by the changes to lighting of the existing environment.
- 6.75 The Landscape and Visual Effects Assessment noted that residents with unobstructed, open views near the Site are most likely to experience the highest adverse visual amenity effects.
- 6.76 The Landscape and Visual Effects Assessment recommended that lighting effects related to the potential level of spill and glare in relation to residential properties were investigated at the detailed design phase. Since lodgement of the NoR KiwiRail has undertaken more work in relation to lighting and the updated Lighting Design confirms compliance with relevant lighting standards.

Measures to address effects

- 6.77 Construction effects will be partly mitigated through installation of planting where possible early in construction stages, outside the Freight Hub.
- 6.78 Operational effects on natural character are proposed to be mitigated by the proposed naturalisation of the northern stream channel and by the opportunity to provide fish passage within the sections to be culverted. The significant area of naturalised lowland bush and wetland vegetation around the stormwater ponds will enhance natural character and provide public access.
- 6.79 The extensive planting and use of a coherent palette of materials for all structures together with adherence to the NEIZ design guide (where practicable) will mitigate effects on the natural landscape. The decision to utilise the layout with the larger structures to the south within the NEIZ, relocating the NIMT, provision of footpaths and off-road path routes associated providing recreational and connectivity opportunities and the proposed planting will assist in mitigating the urban landscape effects of the Freight Hub.
- 6.80 Mitigation of effects on views for those travelling is achieved through the proposed planting over time. Mitigation in the form of additional screening and or planting is proposed to be investigated in the next stages of the project. The issue of the impact of the Freight Hub and the screening on individual properties as a visual amenity issue where I have a different view from the Council officers and Ms Rimmer. Ms Rimmer has noted the locations where further investigation may be warranted in paragraph 8.9 of her evidence.
- 6.81 I do not support the listing of roads or properties in the conditions at this time as the modelling and assessment required with the detailed design has not been undertaken and the properties affected may be more or less than those listed by Ms Rimmer. The conditions as contained in Appendix 1 to my evidence require the location and type of planting to be shown and for the plan to show how planting will mitigate visual amenity affects in relation to residential properties which enables affected dwellings to be identified through that process (condition 52 (b)(ii)).
- 6.82 I note that Ms Rimmer has recommended in her evidence other changes to conditions in line with the recommendations of the Council officers in relation to landscape and design to mitigate effects, which are reflected in the conditions appended to my evidence (**Appendix 1**).

- 6.83 The issue use of the NEIZ design guide as the basis for the Landscape and Design Plan set out in condition 52 is discussed later in my evidence (refer paragraph 10.28).

Lighting effects

Construction

- 6.84 Mr McKensey has indicated that potential effects from construction vehicle headlight sweep, security lighting and working lights between 11:00pm and dawn, can be addressed through the construction management plan.³⁰

Operation

- 6.85 Mr McKensey has considered that the main potential lighting effects of the Freight Hub would be light spill to residential areas, glare to residential areas, glare to motorists, sky glow and confusion to aircraft operators.
- 6.86 Mr McKensey's assessment is that the updated lighting design complies with AS / NZS 4282:2019 (control of the obtrusive effects of outdoor lighting), environmental zone A2. Mr McKensey considers that the lighting effects will be low to negligible as a result.³¹

Measures to address effects

- 6.87 While Mr McKensey considers that the effects will be low to negligible, the lighting for the Freight Hub will be subject to further detailed design at a later stage of the process.³²
- 6.88 An operational lighting design plan is proposed to demonstrate how KiwiRail will ensure compliance with lighting standards will be achieved. These conditions as appended to my evidence (**Appendix 1**) have been amended as recommended in Mr McKensey's evidence in line with the recommendations of the Council Officers.

Ecological effects

Construction

- 6.89 The ecological effects related to constructing the Freight Hub include vegetation clearance / loss, loss of avifauna and herpetofauna habitat, stream loss, introduction of barriers to fish passage, and earthworks sediment related

³⁰ Evidence of John McKensey, dated 9 July 2021, at paragraph [8.9].

³¹ Evidence of John McKensey, dated 9 July 2021, at paragraph [1.4].

³² Evidence of John McKensey, dated 9 July 2021, at paragraph [6.37].

discharges to water. The effects were considered in the context of the ecological values affected, the expected magnitude of effect (ie the scale), and the expected overall level of ecological effect.

- 6.90 The loss of the terrestrial vegetation and fauna was considered a Very Low level of ecological effect, one which typically does not require any form of mitigation response.
- 6.91 The stream loss was considered in terms of the different stream systems present in the Designation Extent. The stream loss in both systems was initially considered a Low Magnitude of Effect (very slight change from the existing baseline condition). The combination of the impact of the loss of the streams within the Freight Hub on the Mangaone Stream Catchment was also considered to be a Negligible Magnitude of Effect (negligible change from the existing baseline condition). The assessment has been reviewed following two recent site visits to the northern end of the Designation Extent.
- 6.92 Impediments to fish passage have been considered in relation to the northern tributary of stream system 2 where there is upstream perennial fish habitat. The effects are potentially related to the design and installation of any culvert located on this tributary, and if culverts are installed incorrectly and result in impeded passage, then migrating fish may not be able to access favourable habitats upstream. If this occurred, the impediment to migrating fish was assessed as having a high magnitude of effect on the low value stream system 2, resulting in a low level of effect if improper installation occurs. Mr Garrett-Walker's view is that if culverts are installed correctly this could have a positive effect resulting in an overall net ecological gain relative to fish passage.³³
- 6.93 The culvert design and installation will be subject to regional consent processes under the Horizons One Plan and the NES-F. KiwiRail will look to provide continuous passage to upstream perennial fish habitat related to stream system 2 but until the culvert details are provided this is not possible to confirm.
- 6.94 The effect of the required earthworks is the potential to temporarily reduce the water quality of the surrounding waterways, including the Mangaone Stream through uncontrolled erosion and sediment runoff. The earthworks will be subject to regional consent processes and the provisions of the Horizons One Plan. While the detail about the erosion and sediment control measures have not been developed, the assessment was that there was overall a Very Low

³³ Evidence of Jeremy Garrett-Walker, dated 9 July 2021, at paragraph [8.10].

level of effect partly due to the low magnitude of effect on these negligible and / or low value systems and that it was assumed that streams under the Freight Hub will be piped prior to substantial earthworks occurring.

Operation

- 6.95 Stormwater entering the waterways from the Freight Hub was identified as the only operational phase ecological effect. It was noted that there is the potential to reduce the water quality of the watercourses across the Site through the input of impermeable roading and rail contaminants (for example copper, lead, zinc, hydrocarbons).

Measures to address effects

- 6.96 Preclearance surveys of will be required and if animals and birds are found measures will be put in place to salvage them if required. All steps required under the Wildlife Act 1953 will be followed with appropriate permits obtained. In addition, it is anticipated that regional consent conditions will require survey, salvage and relocation of fish to suitable areas prior to any works occurring within the stream environments.
- 6.97 While the stream loss in terms of habitat loss was considered a low effect, it was recommended that alternative replacement aquatic habitat should be provided around the Freight Hub where possible and practicable, to collect and convey stormwater and provide replacement aquatic habitat. The proposed provision of an open planted stream channel along the northern edge of the Freight Hub can reduce the overall quantum of lost stream habitat.
- 6.98 To ensure fish passage to upstream habitats is retained, the design of any pipes and culverts installed in streams is recommended to allow for unimpeded fish passage to these habitats.
- 6.99 Best practice sediment management will be undertaken to mitigate effects of sediment generation from earthworks across the Site. Some of the stormwater treatment devices such as the vegetated stormwater ponds and wetlands are expected to be installed at the construction stage, and these will assist to capture sediment.
- 6.100 The effects of stormwater from the operation of the Freight Hub on water quality will be mitigated via the measures outlined in Mr Leahy's evidence and as summarised below. Mr Garrett-Walker has concluded that if treated via suitable devices such as vegetated swales, wetlands, detention devices, etc,

the stormwater quality (as per Schedule E of the Horizons One Plan) being discharged into the receiving environment will be acceptable.³⁴

- 6.101 I note that no designation conditions are proposed in relation to ecological effects as the regional consents will require the measures identified above and in the evidence of Mr Garrett-Walker to be undertaken.

Stormwater and Flooding effects

Construction

- 6.102 Potential construction related stormwater effects are associated with silt generation and mobilisation and temporary sediment and erosion effects associated with earthworks and working close to and within watercourses. These effects will be assessed in detail at the regional resource consent stage.
- 6.103 To date no sensitive receiving environments have been identified downstream of the Site. Notwithstanding this, the discharge of sediment from the Site during construction works will need to be managed and mitigated.
- 6.104 Flooding effects are related to the displacement of flood capacity and the potential for upstream flooding due to earthworks raising the level of the land occupied by the Freight Hub.

Operation

- 6.105 As noted above, understanding the effects of the increase in stormwater generated from the Freight Hub and new perimeter road on the Mangaone Stream catchment informed the Designation Extent to ensure that there was sufficient area provided to detain the stormwater and to remove contaminants. It was recognised that the stormwater management system will be part of the detailed design and regional consent phase, therefore the assessment for the NoR was high level and focused on ensuring that the stormwater quality and quantity effects can be managed within the Site.
- 6.106 Most of the Freight Hub and the new roading will be contaminant generating but the water quality will be managed using dedicated stormwater treatment wetlands within detention ponds areas. There are further opportunities to remove contaminants by including low impact design techniques such as swales and raingardens and specifying roofing materials. While the detention of water will be the main approach to managing effects on water quantity the effect will be reduced through providing for reuse of water where appropriate.

³⁴ Evidence of Jeremy Garrett-Walker, dated 9 July 2021, at paragraph [10.5].

Measures to address effects

- 6.107 As noted above the provision for detention and treatment areas within the Designation Extent will be the main form of mitigation for the operational effects of stormwater. The construction effects will also rely on the detention areas in part as these will form part of the erosion and sediment control measures that will be required to minimise the risk of sediment entering streams.
- 6.108 Flooding effects will be minimised by the staging of the works to ensure that the culverts are installed, and upstream waters are able to pass through the Site.
- 6.109 A stormwater management framework will need to be developed to provide for the management of the different contaminant generating activities present in the Designation Extent and how these will be specifically managed. A draft stormwater management framework was provided to PNCC and HRC prior to the Designation Extent being confirmed to give them comfort that the work being done had covered. The stormwater management framework will need to be developed further to influence detailed design and the development of the regional consent applications.
- 6.110 The Council Officers recommend that potential flood management matters are identified in a Stormwater Management Framework and secured through designation conditions. Mr Leahy has outlined in his evidence how flooding risks have been assessed and that they will be considered through detailed stormwater management design.³⁵ The work Mr Leahy has undertaken has shown that the management of significant risks from natural hazards is possible through the location and design of the Freight Hub and provision for large volumes of stormwater detention within the designation.
- 6.111 The volume and quality and impact of discharges from the hub will fall within the scope of the required regional consents. I do not consider that the Stormwater Management Framework needs to be provided for in the designation conditions. In order to provide comfort that the outcomes of the Stormwater Management Framework are able to be achieved the management of stormwater and flooding is provided for in the requirement to develop a Stormwater Management Report and the report will be used to inform the detailed design for key components of the Stormwater Management System. The requirement for the Stormwater Management and Monitoring Plan and Monitoring Plan as outlined in the Proposed Conditions is also to

³⁵ Evidence of Allan Leahy, dated 9 July 2021, at paragraph [9.6].

ensure that the stormwater system as a part of the land use is managed appropriately on an ongoing basis.

- 6.112 I recognise that there is overlap between the functions of the district and regional council in regard to managing stormwater and flooding and the drafting of the Proposed Conditions in the NoR was undertaken in recognition of those matters that the district council is responsible for and in my view are therefore appropriate.

Geotechnical risk

- 6.113 A high-level assessment of the geotechnical risks for the Freight Hub was undertaken by Mr Mott. His assessment noted that the geotechnical risks for the Freight Hub are related to the potential of soft and liquefiable ground being present which can lead to lateral spreading and differential settlement.³⁶ Other geotechnical risks identified were seismic hazards (earthquakes), stability of slopes and potential for poor subgrades under proposed new roads.³⁷
- 6.114 Mr Mott's assessment was that these risks can be identified through detailed geotechnical investigations that are likely to consist of boreholes, CPT's test pits, hand augers and laboratory testing and then managed through the detailed design stage using standard engineering practices. Where necessary these could include the use of ground improvement measures such as pre-loading of fill for settlement, digging and replacement of unsuitable fill, and stone columns.

Archaeological effects

- 6.115 The scale and nature of the proposed change in the existing landform due to the construction related earthworks associated with delivering the Freight Hub and the perimeter road means that any archaeological sites within the Designation Extent may be affected.
- 6.116 Mr Parker confirms that there are no registered historic places or New Zealand Archaeological Association recorded archaeological sites associated with pre-1864 Māori occupation that will be affected by the Freight Hub.³⁸ Any unknown sites are expected to be smaller sites associated with forest-based activities. The most likely locations for unknown sites to be encountered is alongside or in general proximity to streams. The effects will be low providing appropriate documentation and recording.

³⁶ Evidence of Andrew Mott, dated 9 July 2021, section 6 and paragraph [7.2].

³⁷ Evidence of Andrew Mott, dated 9 July 2021, section 6.

³⁸ Evidence of Daniel Parker, dated 9 July 2021, at paragraph [1.1].

- 6.117 Within the Designation Extent, Mr Parker has identified three sites associated with the 1864-1900 colonial landscape as verified (they have a confirmed location and extent) and are confirmed to be pre-1900 as archaeological sites under the legal definition of the HNZTPA, being:
- (a) the Rogers' house, at 489 Railway Road;
 - (b) the Clevely house site, at 121 Clevely Line; and
 - (c) the Clevely historic section at 121 Clevely Line.
- 6.118 Another seven houses, house sites and buildings that have moderate site potential (as they have a confirmed location and extent and a high probability of being pre-1900) will be affected. Of the three verified sites, two are considered to be significantly affected. These are the Roger's house (from being destroyed), and the Clevely historic section (due to sensitivities with the site). The Clevely house site is not considered to be significantly affected because the house is no longer there.
- 6.119 Mr Parker's evidence notes that further research into the age, significance, and condition of the tentatively identified heritage buildings through the archaeological process, will be required to confirm if the HNZPTA should apply and to verify the actual archaeological value of the seven sites referred to in his evidence.³⁹
- 6.120 KiwiRail has proposed conditions requiring any land disturbing works to occur in any area not subject to an archaeological authority will be subject to an accidental discovery protocol.
- 6.121 In addition, Mr Parker agrees with the conditions suggested by PNCC in relation to managing the effects on archaeology through observing an accidental discovery protocol, contractor training, procedures following the accidental discovery and procedures for the custody of taonga (excluding kōiwi tangata), or material found at an archaeological site.⁴⁰

Cultural effects

- 6.122 As outlined in Ms Poulsen's evidence KiwiRail continues to engage with Ngāti Kauwhata, Rangitāne ki Manawatu, and Ngāti Raukawa. KiwiRail has been

³⁹ Evidence of Daniel Parker, dated 9 July 2021, at paragraph [8.5].

⁴⁰ Evidence of Daniel Parker, dated 9 July 2021, at section 10.

exploring ways to formalise the relationships with iwi to foster a positive and effective working relationship moving forward.⁴¹

- 6.123 KiwiRail has proposed the development of a mana whenua engagement framework, to ensure recognition and incorporation of iwi values from the design, through to implementation. This is intended to enable iwi to determine how they wish to work on the project and ensure that their values are represented.

Contaminated land and air quality effects

Contaminated land

Construction

- 6.124 The Preliminary Site investigation did not identify any specific sources of potential contamination as no Hazardous Activities and Industries List (HAIL) sites were confirmed as being within the Designation Extent. However, the potential for sheep dips and spray races along with burn pads being present due to the pastoral farming practices undertaken were identified as well as an unexercised resource consent for a truck wash facility.
- 6.125 The outcomes of the Detailed Site Investigation ("DSI") undertaken before works commence will inform whether a consent is required under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations ("NESC").
- 6.126 The removal of potentially contaminated soil material in these areas while beneficial may lead to mobilisation and wider distribution of contamination. Exposure of both site construction workers and the public to contaminated dusts could be a possible risk.

Operation

- 6.127 Within the operational Freight Hub several HAIL activities will take place. These include goods-handling yards, workshops, refuelling facilities and maintenance area and the railway yard, temporary or permanent storage areas for potentially hazardous goods and a refuelling facility. They are HAIL activities because of the contaminants such as diesel fuel, oils and greases potentially released along with cleaning chemicals or other substance that potentially give rise to ground contamination.

⁴¹ Evidence in Olivia Poulsen, dated 9 July 2021, at paragraph [6.7].

Measures to address

- 6.128 A Contaminated Site Management Plan ("**CSMP**") can readily manage the potential contamination impacts of the construction works should this be required, depending on the outcomes of the DSI.
- 6.129 Containment measures will be incorporated in both the design of the Freight Hub and day-to-day operation of the Freight Hub to prevent ground contamination and best practice measures Standard Operating Procedures ("**SOPs**") are expected to be in place to manage individual aspects of the sites such as clean-up of spillages and ensure the integrity of channels and wash bay areas is assured to minimise adverse effects from contaminants will be minimised.
- 6.130 Existing bores within the Designation Extent and its surrounds can be utilised to monitor for any potential groundwater contamination.

Air Quality

Construction

- 6.131 Dust created during earthworks and from the movement of heavy vehicles during the construction phase of the Freight Hub has the potential to cause adverse effects on the surrounding environment including on those neighbours that rely on roof water for water supply.

Operation

- 6.132 The operation of the Freight Hub will potentially result in dust and exhaust emissions from the use of heavy trucks and from locomotives and other rail related vehicles. As diesel electric locomotives currently operate on the network it is recognised that there is a risk of particulate matter discharging to air from incomplete combustion of diesel fuel although this is not caused by electrified locomotives. In addition, there is the potential for diesel odour. Mr Heveldt has assessed that the effects of both the odour and the particulate matter will be very localised and will result in no more than minor adverse effects on air quality.⁴² However, there is the potential that there could be an accumulation of particulates on roofs within 100 m of the Freight Hub marshalling yards which could have an impact on drinking water quality of the roof water is used for that purpose.

⁴² Evidence of Paul Heveldt, dated 9 July 2021, at paragraph [8.4].

Measures to address effects

- 6.133 Continuous monitoring of total suspended particulate ("**TSP**") was recommended by Mr Heveldt in his evidence to facilitate the active management of on-site activities that generate dust and particulate.⁴³ This is because background levels of dust will need to be determined before construction commences to assist with evaluating compliance with air quality assessment criteria during construction.
- 6.134 The updated Construction Management Plan contained in Appendix 1 includes a requirement for a specific Construction Dust Management Plan ("**CDMP**"). It is noted that the CDMP will be required under the regional consent required for bulk earthworks, as that resource consent will when implemented will provide a regime of effective controls over dust emissions associated with the construction activities.
- 6.135 At this point it is not anticipated that a regional consent will be needed for air discharges from any operational activities.

Effects on network utilities

- 6.136 As noted in section 9.12 of the AEE and the section 92 response dated 5 May 2021 ("**Second Section 92 Response**")⁴⁴ there are both above and below ground network utility assets currently located within the Designation Extent. In addition, PNCC's water bore while not within the Designation Extent is surrounded by the Designation.
- 6.137 As noted in the Third Section 92 Response, the Transpower National Grid asset (overhead lines and a pylon) is located at the north of the Freight Hub in an area subject to noise mitigation and landscaping. There is no direct effect expected on this asset either due to the operation of the Freight Hub or its construction.
- 6.138 The roads in the Designation Extent as well as the PNCC and Powerco assets within the roads will be directly affected as the formed roads will either be removed altogether or redesigned and the assets in them will also either be removed and / or relocated. In addition, the First Gas pipeline that crosses the Designation Extent from Roberts Line to Sangsters Road will need to be relocated.

⁴³ Evidence of Paul Heveldt, dated 9 July 2021, at paragraph [9.10]

⁴⁴ Section 92 Response dated 5 May 2021, Attachment 11.

- 6.139 The PNCC water bore is not directly affected by the NoR however any changes to its access would be affected by the NoR and require KiwiRail's approval.
- 6.140 No adverse effects are anticipated on these parts of Transpower's National Grid located within the Designation Extent, as no new buildings or permanent structures are proposed in the vicinity of the National Grid. No adverse effects are anticipated for the other assets until construction of the Freight Hub commences.

Measure to address effects

- 6.141 KiwiRail will work with utility operators to manage existing network utility assets affected by the Freight Hub in a way that ensures continuity of their services. In the meantime, a condition as suggested in the Section 42A Report has been incorporated into the Proposed Conditions to ensure that access is guaranteed to assets located in roads within the Designation Extent until such time as the roads are stopped. The condition reflects the access rights present under the National Code of Practice for Utility Operators' Access to Transport Corridors that is a legislated requirement under the Utilities Access Act 2010.
- 6.142 KiwiRail has been working collaboratively with PNCC to develop an agreement to ensure that effects on PNCC's assets are managed in a coordinated way. As noted in s42A Report: Palmerston North City Council Infrastructure Assets by Mr van Bentum the agreement includes:⁴⁵
- (a) stopping of paper and formed PNCC roads;
 - (b) the shared pathway on the eastern side of the rail lines; and
 - (c) road integration works.
- 6.143 These matters are provided for in the Proposed Conditions through the Road Network Integration Plan.
- 6.144 The balance of PNCC infrastructure assets are to be addressed through the project agreement between PNCC and KiwiRail, the draft of which is discussed in Mr van Bentum's evidence.⁴⁶
- 6.145 KiwiRail will work with Transpower to ensure its requirements are met when the landscaping is planned close to its assets. A condition is proposed to

⁴⁵ Section 42A Technical Evidence: Palmerston North City Council infrastructure assets, dated 18 June 2021, at paragraph [4].

⁴⁶ Section 42A Technical Evidence: Palmerston North City Council infrastructure assets, dated 18 June 2021, at section 4.

ensure the selection of plants and their location will comply with the Electricity (Hazards from Trees) Regulations 2003 at full maturity is proposed. KiwiRail is working with First Gas to ensure the relocation of the high pressure gas pipeline and will work with Powerco to also relocate its assets.

Effects on productive land supply

- 6.146 It is noted that the Government has proposed a National Policy Statement for Highly Productive Land ("**NPS-HPL**") to prevent the loss of productive land and promote its sustainable management. The public consultation on the NPS-HPL was undertaken in 2020 and it is understood that final decisions on the proposed NPS-HPL will be made by ministers and Cabinet in the second half of 2021 and if approved, the proposal would likely take effect in the second half of 2021.⁴⁷ As this is a proposed National Policy Statement, there is no need to have regard to it.
- 6.147 However, mindful of the Rural Xone applied to 120 ha of the Designation Extent, potential effects on productive land supply were assessed. In this context it is noted that while most of land within the Designation Extent is classified as versatile and productive land (being class 2 and 3 soils), not all the land is currently or potentially available for food production.
- 6.148 Approximately 50 ha of the land is already zoned for non-productive activity as it is in the NEIZ. In addition, some of the Rural zoned land to the north of the NEIZ on Te Ngaio and Cleverly Roads has been subdivided and small lifestyle blocks created. The fragmented nature of these smaller parcels and ownership and the houses and ancillary areas of driveway; garages etc already reduces the productivity of the overall Rural zone within the Designation Extent. Some of the land identified as class 2 and 3 is also formed and unformed road and rail corridor.
- 6.149 While there will be a loss in land currently available as productive land and zoned for that purpose, I consider given the other benefits that arise from the Freight Hub that the effects are minor.

⁴⁷ Ministry of Primary Industries web site
<https://www.mpi.govt.nz/consultations/proposed-national-policy-statement-for-highly-productive-land/>

7. STATUTORY FRAMEWORK

7.1 The statutory framework under section 171 of the RMA applies to the consideration of a NoR for a new designation. Section 171 provides:

....

- (1) When considering a requirement made, a territorial authority must, subject to Part 2 of the RMA, consider the effects on the environment of allowing the requirement, having particular regard to:
 - (a) any relevant provisions of:
 - (i) a national policy statement:
 - (ii) a New Zealand coastal policy statement:
 - (iii) a regional policy statement or proposed regional policy statement:
 - (iv) a plan or proposed plan; and
 - (b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work; if -
 - (i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or
 - (ii) it is likely that the work will have a significant adverse effect on the environment; and
 - (c) whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and
 - (d) any other matter the territorial authority considers reasonably necessary in order to make a decision on the requirement.

Relevant Policies and Plans (s171(1)(a))

- 7.2 Given the detailed analysis is set out in the AEE and the Section 92 Response, my conclusions in relation to the relevant planning documents are summarised in **Appendix 1**.
- 7.3 In my opinion, the assessment against relevant policy statements and plans demonstrates the Freight Hub is consistent with these documents, and consequently meets the provisions of section 171(1)(a) of the RMA.

Consideration of alternatives (s171(1)(b))

- 7.4 Section 171(1)(b) requires that where the requiring authority does not have all necessary property rights on the land which the works will be undertaken or the works will have a significant effect of the environment, adequate consideration must be given to alternative sites, routes, or methods of undertaking the work.
- 7.5 As KiwiRail did not have all necessary property rights to the land required, alternative site locations and methods were considered by KiwiRail.⁴⁸ There were three stages to the assessment of alternative process:
- (a) Stage 1 – site selection.
 - (b) Stage 2 – site layout; and
 - (c) Stage 3 – spatial extent.
- 7.6 The process followed is set out in the following diagram in Figure 2.

⁴⁸ Assessment of Environmental Effects, dated October 2020, at section 10.2 of the AEE.

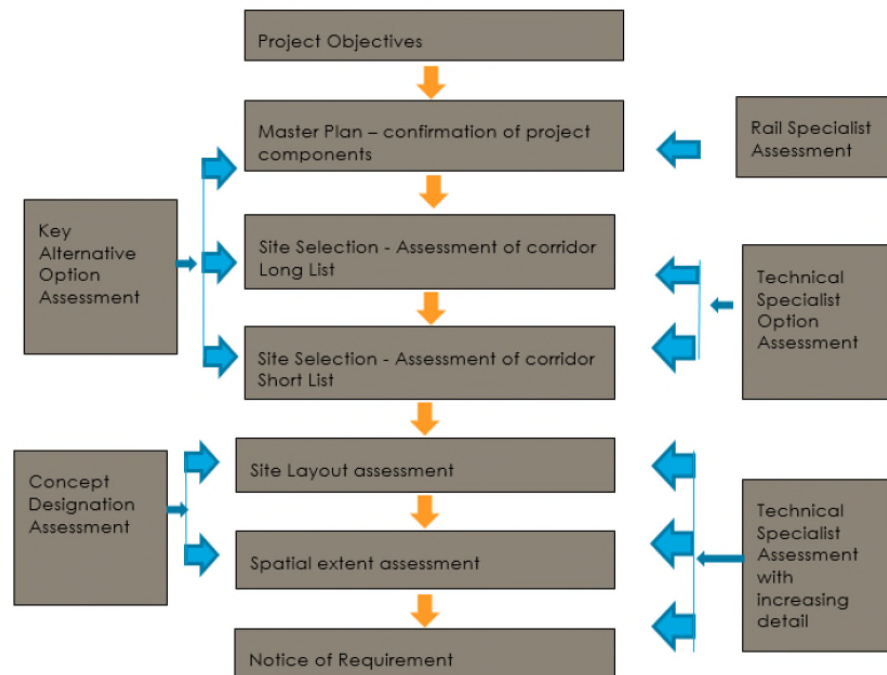


Figure 2. Site Selection Process

Stage 1 - Site selection process

- 7.7 The site selection process looked at a range of potential sites from the Manawatū River almost to Feilding along the NIMT. This was in line with KiwiRail's objectives and recognised Palmerston North's strategic position on the NIMT.
- 7.8 Utilising the MCA process described earlier, a long list of nine potential areas located along the NIMT assessed. The nine potential area options included four sites in the vicinity of Bunnythorpe, four in the vicinity of Longburn and the Existing Freight Yard. The sites are listed in Table 1⁴⁹ in Ms Poulsen's evidence.
- 7.9 The MCA assessment involved independent technical assessments of each of the sites against a comprehensive set of criteria. The criteria used included rail, engineering degree of difficulty, connectivity, economic, resilience, heritage and archaeology, natural environment, property, noise, and vibration, visual and landscape, strategic fit and community cohesion. The assessment also involved a series of workshops and decision conferencing which is a tool that brings key experts, client representatives and stakeholders together to provide different perspectives, and generate shared understanding through an impartially facilitated and interactive process.

⁴⁹

Evidence of Olivia Poulsen, dated 9 July 2021, at paragraph [5.2].

- 7.10 Each of the nine locations was assessed and scored against the agreed set of criteria. Through the assessment and scoring process the nine locations were reduced to five and then to a short list of three, through decision conferencing. Through the MCA workshop process, KiwiRail's operational and locational requirements were refined and the presence of sensitive or difficult to replace activities such as:
- (a) Marae;
 - (b) schools;
 - (c) the Feilding Airport;
 - (d) possible constraints such as the presence of ecological areas of value; and
 - (e) large areas of existing or future residential zoned land were identified.
- 7.11 The final workshop assessment and scoring of the three short listed sites, identified Site 3 located between Roberts Line and Maple Street on the western side of Railway Road ranked the best overall having scored best in terms of the "raw scores" ie no weighting; the workshop 3 weighting (agreed by participants) and several the sensitivity tests. Following the workshop KiwiRail confirmed Site 3 as the location of the preferred site and work then commenced looking at a concept layout.
- 7.12 In my view the MCA process followed best practice in that it was a robust, defensible, transparent, genuine process, undertaken with an open mind and well documented from the outset. The process followed was fit for purpose, it was undertaken in a structured and methodical manner, included the appropriate technical experts and stakeholders and KiwiRail were involved throughout the process which was well documented.

Stage 2 - Site layout

- 7.13 The assessment of alternatives continued once the preferred site had been confirmed by KiwiRail. As described in Section 10.2.3 of the AEE, four alternative concept layouts were considered with the different rail performance and environmental impacts (noise, landscape, and stormwater) of each option assessed. In the end two layouts were considered in more depth and KiwiRail made a choice of one layout that resulted in the potential for fewer limitations being imposed on the Freight Hub's operation and reduced the potential

adverse effects on Bunnythorpe. It also meant that the larger freight forwarders buildings on the Freight Hub site would either be in the NEIZ or closer to the larger buildings anticipated in the NEIZ.

Stage 3 – Spatial extent

7.14 Having selected the layout of the main operational components, the areas required for road network connections, stormwater management and noise mitigation were considered:

- (a) Given the need to connect to the NIMT the impacts on Railway Road were recognised at the outset. Separated grade connections over Railway Road were not considered viable. In addition, access to the external road network was essential for the Freight Hub to achieve KiwiRail's objectives. KiwiRail also needed to minimise the number of level crossings over the main rail roads to reduce potential conflict between with trains and vehicles. Therefore, Railway Road needed to be closed and a new road was required around the western side of the Freight Hub. It was recognised that as part of this, provision needed to be made for a new road to provide direct access to the Freight Hub from the south, west and north. The new perimeter road as included in the Designation Extent also replaces some of the network functions lost by closing Railway Road between Roberts Line and Maple Street.
- (b) As a result of the need to provide for on-site stormwater treatment different locations were considered for stormwater management ponds. While providing for smaller areas inside the Freight Hub was possible, large areas on the downstream side of the Freight Hub and perimeter road were required to also provide detention to minimise flows during rain events when the catchment was already coping with large volumes. The presence of a flood plain within the Designation Extent also meant that the required detention volumes had to be provided across two locations. Provision also needed to be made for discharges from these locations connecting to the existing watercourses. This partly accounts for the shape of the Designation Extent on the western side.
- (c) As noted earlier a noise barrier around the Freight Hub's operational area was recommended in the Acoustics Assessment to minimise noise effects from the operation of the Freight Hub. In relation to the eastern boundary, initial work looked at different locations for the

barrier. Options considered for the eastern noise barrier included partial use of Sangsters Road as well as the use of some of the land already designated for the NIMT, between the active rail line and the boundary of Sangsters Road. Recognising that the NIMT would need to be realigned vertically to ensure the tracks also aligned with the floor of the Freight Hub it was also recognised that another option was available if the NIMT itself was relocated into the Freight Hub. Relocation of the NIMT provided other benefits as it:

- (i) would allow the required noise barrier and landscaping to be in the corridor currently occupied by the NIMT;
- (ii) provided a better ability to replace and construct the required culverts, in particular the large culvert required through and under the middle of the Freight Hub to remove the risk of upstream flooding;
- (iii) would enable the noise barrier of planting to be located further away from the residential properties to mitigate the noise and visual effects;
- (iv) did not disturb the use of the formed and unformed sections of Sangsters Road for the Te Araroa Trail; and
- (v) enabled works to provide for the local access requirements for 422 and 422a Railway Road landowners where the existing level crossing to Railway Road had been removed.

7.15 The Designation Extent therefore overlays the existing NIMT designation. From a planning perspective, the relocation of the NIMT will however, need to be enabled by an alteration to the existing designation at a future stage.

Whether the work and designation are reasonably necessary in order to achieve KiwiRail's objectives (s171(1)(c))

7.16 Section 171(1)(c) requires consideration of whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought.

- 7.17 KiwiRail's objectives in developing a Freight Hub in or near Palmerston North on the NIMT to:
- (a) increase its operational capacity to efficiently accommodate projected regional and national freight growth and support wider regional development;
 - (b) enable rail to be integrated with, and connected to, other transport modes and networks; and
 - (c) improve the resilience of the regional and national freight transport system over time.
- 7.18 I consider that the Freight Hub is reasonably necessary to achieve these objectives. Objective (a) is achieved by the Freight Hub enabling the development of facilities that have been appropriately sized to accommodate forecasted growth out to 2050. The Freight Hub also provides for an efficient layout that allows whole unit trains to be constructed by the container terminal and the marshalling yards.
- 7.19 It will also provide for 1,500m long trains. Longer trains are an efficient and effective way to improve freight movement capacity to meet growing demand. The Existing Freight Yard is constrained due to its location with urban land uses around it and no real prospect of being able to redevelop. As explained in the evidence of Mr Paling, due to the increased level of container traffic, the capacity of the container terminal is expected to be reached by 2030.⁵⁰ The size and location of the container yard at the Existing Freight Yard and the fragmented nature of facilities at the yard itself mean it is unable to accommodate the forecasted growth in freight at Palmerston North and KiwiRail's planned changes to train lengths (to 1,500 m) or frequencies of trains.
- 7.20 Objective (b) is achieved by the provision for the three entrances from the perimeter road to go directly to key parts of the Freight Hub - the freight forwarders, the container terminal, the log handling and the maintenance area. Moving to the Site will also provide KiwiRail with the ability to handle freight more efficiently due to the increased capacity (number and length) of rail tracks provided for at the marshalling yards, the container terminal and the log handling and rail access directly to the freight forwarders.

⁵⁰

Evidence of Richard Paling, dated 9 July 2021, at paragraph [6.15].

- 7.21 It will also better integrate with other transport modes especially with the Ring Road and other PNITI works and road upgrades are planned in this area which would provide opportunities for integration and the more efficient movement of freight across the transport network. Further, the Site is located in proximity to Palmerston North Airport meaning that freight forwarders have the benefit of air, rail and road for moving freight, making the Site attractive for investment. Tremaine Avenue, where the Existing Freight Yard is located, is congested at peak times and would be expected to be further affected by more trucks if the freight facility stays at the Existing Freight Yard.
- 7.22 Objective (c) is addressed by the provision of facilities within the Freight Hub that are directly serviced by rail that ensure that moving freight by rail is efficient. This will make rail an attractive alternative option to moving freight by road and will reduce the number of trains going north in total and has the potential to reduce heavy truck traffic using the main road routes north of Palmerston North. This will improve the resilience of the transport network and assisting the nation in reducing both carbon emissions and road accidents.
- 7.23 Further, the use of a designation is in my view a method that is reasonably necessary to achieve all three objectives as it enables the land to be safeguarded from future incompatible industrial or residential development which may prevent or hinder the works KiwiRail needs to secure the land and obtain the authorisations for the Freight Hub, associated activities and land use.
- 7.24 In addition, the alternative methods of a plan change and / or a resource consent would not in my view, be efficient or sustainable use of resources. Numerous separate land use consents would be needed and while a plan change could result in an appropriate zoning as KiwiRail does not currently own all of the land, it could be developed for other activities in the meantime leading to land use inefficiencies.

Other matters (s171(1)(d))

- 7.25 I consider that there are other plans, strategies, and document that need to be considered in making a decision on the NoR. There are set out in **Appendix 2** and I have summarised my assessment of these documents.⁵¹
- 7.26 I consider that the NoR aligns with the various other policy and strategic documents that sit outside the RMA as the Freight Hub will be a key component

⁵¹ The documents have previously been referenced in the AEE and in the section 92 response.

to achieving the goals of an efficient transport network that integrates and supports the economic development of PNCC and the wider region.

Part 2

- 7.27 The assessment under section 171 is subject to Part 2. In my opinion, the NoR is consistent with Part 2, as set out below.

Section 5

- 7.28 The provision of the Freight Hub is consistent with the purpose of the RMA as it will enable KiwiRail to provide for the economic well-being of those who use the rail network to move freight. The additional benefits to the region's economy include:

- (a) reducing transport costs and lifting the average productivity of firms due to the agglomeration effects; and
- (b) providing employment; providing a more cost-effective freight service that could reduce transport costs and help strengthen the rail network and encourage a modal shift away from road freight.

- 7.29 Providing a more cost-effective freight service that could reduce transport by road and encourage a modal shift also has health and safety benefits. Where possible adverse effects have been avoided, reduced and minimised through site location and through site design. Other adverse effects will be remedied or minimised through the mitigations proposed.

Section 6

- 7.30 Not all the matters set out in Section 6 are directly relevant to the NoR. In my opinion, there is nothing that indicates that the NoR is inconsistent with Section 6(a) – (d) of the RMA. Further:

- (a) In relation to Section 6(e) of the RMA, the archaeological report noted that Maori have had a relationship with the land for centuries and this is reflected in the iwi submissions. As indicated in the evidence of Ms Olivia Poulsen, KiwiRail continues to work with iwi to better understand the relationship and to recognise the relationship with development of the land, and the Proposed Conditions provide a framework through which mana whenua values will be recognised and provided for.

- (b) As there are no registered archaeological sites or features or any scheduled features under the District Plan on the Site, I consider that there is nothing at this point that is inconsistent with Section 6(f).
- (c) In terms of Section 6(g) I am not aware of any protected customary rights applying to the land.
- (d) In terms of Section 6(h), the potential natural hazards that could apply to the land related to land stability; seismic risk and flooding, which have been considered and in the view of the relevant experts. Risks related to them are subject to further work prior to detailed design and are able to be managed through stormwater management and engineering design for the Freight Hub.

Section 7

- 7.31 In terms of Section 7(a), KiwiRail has engaged with iwi, and is committed to ongoing engagement.
- 7.32 The proposal will be an efficient use of the natural and physical resources present on the land in terms of Section 7(b), given that the Freight Hub in this location is consistent PNCC's strategic plan for the area. Although the Freight Hub restricts the use of the versatile soils present for food production for the foreseeable future, the NEIZ application to a third of the land and the existing subdivision pattern suggests that this loss was already in place. The Freight Hub will enable the transfer of more goods by rail than currently occurring will be an efficient use of the existing NIMT and by enabling the removal of freight traffic from the road network will provide for greater efficiency in use of that physical resource in a more sustainable manner.
- 7.33 In terms of Section 7(c) and (f), the existing amenity values of the current rural and lifestyle activities in the surrounding area are expected to change. However, this will be minimised by the proposed mitigation methods like noise barriers and associated screening and the landscape planting proposed around the stormwater ponds and wetlands.
- 7.34 In relation to the intrinsic value of ecosystems under Section 7(d) of the RMA, the Site is already a largely modified environment. In my opinion, the proposed enhancements like planting; stormwater management, watercourse and culvert design will respect and enhance the intrinsic values of the ecosystems

- 7.35 Under Section 7(g) of the RMA, there are no finite characteristics of natural and physical resources identified, and Section 7(h) is not relevant to my assessment.
- 7.36 In relation to the effects of climate change under Section 7(i), flood effects from future climate change events will be modelled and considered during detailed design stage. New culverts on the Site will also be designed with regard to climate change effects.

Section 8

- 7.37 As noted in the AEE, KiwiRail recognises its responsibilities in terms of the principles of the Treaty of Waitangi (Section 8) and will when exercising its powers as a Requiring Authority, adhere to the principle of partnership, involving iwi and working with iwi in relation to the design and development of the Freight Hub and protecting cultural values where they are identified.
- 7.38 As outlined in Ms Poulsen's evidence,⁵² in addition to the proposed NoR mana whenua engagement framework provided for in the proposed designation conditions, KiwiRail and iwi are working towards developing a working framework agreement alongside the NoR process. Through these two processes, Iwi engagement will continue throughout the development of the Freight Hub as part of KiwiRail's ongoing commitment towards developing effective and productive iwi partnerships.

8. RESPONSE TO SUBMISSIONS

- 8.1 I respond to the submissions received by themes rather than individual submission. Given the submissions are also covered in the s42A planning report, I have sought to align with the key submission themes identified in the s42A Report to assist the Panel. This evidence also relies on the evidence of others to deal with the specific issues.

Submissions in support

- 8.2 A number of submissions in support were received although some are provided with 'qualified' support, ie they wanted their concerns about adverse effects addressed first.⁵³

⁵² Evidence of Olivia Poulsen, dated 9 July 2021, at paragraph [6.17].

⁵³ Submissions 2 – Warren Bradley, 11 - Christopher Joseph Clarke, 12 – CEDA, 18 – Kevin and Yvonne Stafford, 19- Janet Susan Stirling, 20 - Horizons Regional Council, 23- Mike Tate, 24 – Zaneta Park, 42 – Matthew McKenzie, 55 – Michael Sharp, 56 –

- 8.3 Reasons provided for support include the employment and economic opportunities; the contribution to the region's distribution and logistics sector, the shift to moving freight by rail and the related sustainability outcomes, and road safety improvements.
- 8.4 Some of the submitters recognised that some of the land is already zoned NEIZ and sought further integration with the NEIZ and some supported the relocation of the NIMT to the west from its current location and the associated noise and landscaping mitigation proposed. There were concerns expressed by those supporting the NoR about the need for integration with the future road network to realise the benefits. This is discussed further below.

Site Selection

- 8.5 The site selection process is questioned by some submitters⁵⁴ in terms of the accuracy of the information used to inform that process. As outlined above, KiwiRail considered nine locations for a site along the NIMT each of which were assessed by independent experts against a range of criteria. The MCA process relies on information that is adequate for the level of detail of the project at the time such as high level desktop information available, on council websites, for example, or published data from different agencies. The information used became more detailed as the number of sites being assessed reduced in number. In the final short listed site assessment the specificity of the locations being assessed meant that modelling was able to be undertaken to predict the extent of any adverse effects in some disciplines.
- 8.6 The weighting applied has been questioned by some submitters. For example, one submitter⁵⁵ suggests that it was improper to attribute greater weight to Rail, Natural environment, Economic, Connectivity, Strategic Fit, Community Cohesion and Tangata Whenua values criteria than to criteria concerning direct amenity effects on residents (ie noise and vibration). The criteria were agreed with the participants after a site visit to the Existing Freight Yard and a tour along the NIMT to make sure that all participants understood the environments that the future freight yard may be located in.
- 8.7 The workshop weightings were carefully considered and represented how important a particular criterion is compared to another. Workshop and decision

⁵⁴ Accelerate 25 Manawatu-Whanganui, 63 - Central Distribution Hub Stakeholder Group, 73 – Horowhenua District Council, 74 – Arthur George Park. 78: Ben Foster. Submissions 17 – Nicola Schreurs & Thomas Good, 61 – Peter Gore & Dale O'Reilly, and 72 – Danelle O'Keeffe & Duane Butts.

⁵⁵ Submitter 61– Peter Gore & Dale O'Reilly.

conferencing process ensured that scores and weightings were tested before they were applied.

- 8.8 In recognition that different viewpoints would result in different weightings after each workshop a range of weightings using 'sensitivity themes' were also applied.
- 8.9 The process followed is one used for many large infrastructure projects and like all MCA it is focused on delivering what is best for the project. I consider the MCA process was sufficiently robust and adequate to meet the RMA's requirements.

Alignment with planning documents

- 8.10 A number of submitters have also raised concerns with alignment with documents:
- (a) The Horizons' Regional Council submission (20) raises the issue of alignment with the Horizons One Plan objective 9-1 and policies in relation to Natural Hazards. These matters are dealt with in the evidence of Mr Leahy and Mr Mott and I have concluded in Appendix 2 that the work done to date shows that the NoR is consistent with the policy framework.
 - (b) The submission from Te Runanga O Raukawa (96) considers that the Freight Hub is contrary to the Treaty of Waitangi and the Regional Policy Statement Chapter 2 of Te Ao Maori provisions. As outlined in Ms Poulsen's evidence KiwiRail has directly engaged Ngāti Raukawa following the announcement of the Provincial Growth Fund for the Freight Hub in 2019. Since then, there has been ongoing contact between the parties. The schedule attached to her evidence highlights the actions. Conditions contained within Appendix 1 provide for ongoing engagement.
 - (c) The submission from Peter Gore and Dale O'Reilly (61) asserts that the Freight Hub is contrary to applicable planning policy referring to a policy from the Horizons Regional Policy Statement, Policy 3-3 "Adverse effects of infrastructure and other physical resources of regional or national importance on the environment" and specific objectives and policies from the Palmerston North City District Plan's Rural Zone, Natural Hazards, Utilities and North East Industrial Zone chapters. I have reviewed the objectives and policies having assessed some in the AEE already. I do not consider the project is

contrary. I consider that the proposed conditions will ensure that KiwiRail through the delivery of the Freight Hub manages and controls the matters outlined in the objectives and policies.

- (d) The submission (72) from Danelle O'Keeffe and Duane Butts has raised concern about the level of consistency with strategic documents. I have assessed the strategic documents relevant to the Freight Hub in **Appendix 3** to my evidence.

- 8.11 In my opinion, the assessment against relevant policy statements and plans, as outlined in **Appendix 2** and **3** of my evidence, demonstrates the Freight Hub, with the Proposed Conditions, is consistent with these documents and meets the requirements of section 171(1)(a) of the RMA.

Integration with future transport network

- 8.12 Submitters⁵⁶ are concerned about integration between the Freight Hub and Waka Kotahi's PNITI projects. Mr Georgeson has considered these matters from a technical perspective.
- 8.13 The relationship between PNITI and the Freight Hub is recognised. Many of the existing transport issues will be addressed through PNITI. From a planning perspective, these projects are not yet part of the existing environment (including the reasonably foreseeable future environment) as they have not yet been approved by way of designation or even a notice of requirement. Due to this, I do not consider that it is appropriate to consider (or even needed) the effects of the Freight Hub with these projects.
- 8.14 Notwithstanding this, KiwiRail recognises the importance of integration of these projects and as such has proposed a Road Network Integration Plan to address this. I consider that the proposed Road Network Integration Plan condition will ensure that the efficient and effective connections to that future road network and with the NEIZ will be achieved when the Freight Hub is constructed.
- 8.15 I note that changes to conditions have been recommended to address these concerns in **Appendix 1**.

⁵⁶ Submissions 4 – Bruce & Alison Hill, 13 – Tutaki 2019 Ltd, 15 – Maree Woods, 17 – Nicola Schreurs & Thomas Good, 28 – Katrina George, 33 – Linda Spearpoint, 47 – Aaron Fox, 58 – Foodstuff North Island, 61 – Peter Gore & Dale O'Reilly, 65 – Waka Kotahi NZ Transport Agency, 72 – Danelle O'Keeffe & Duane Butts and 77 – William Bent.

Effects on infrastructure and utilities

- 8.16 Several submitters are concerned about effects of the NoR on existing infrastructure and utilities. Some effects such as on the First Gas Pipeline, wastewater rising main sewer and local electricity reticulation provided by Powerco mean that the lines will need to be relocated. Others, such as the council water bore and Transpower's 110kV transmission line, are subject to arrangements being confirmed with the utility in relation to works in the vicinity or to ensure access.
- 8.17 My experience is that KiwiRail will need to work with each utility provider to understand their requirements, provide for them in detailed design and to support the delivery of the proposed changes. In the meantime, acknowledging their concerns about needing to access assets located in the roads in the Designation Extent, and seeking certainty in relation to protecting assets from proposed works, changes to proposed conditions are proposed in **Appendix 1**.
- 8.18 Some submitters are concerned about the impacts of the Freight Hub in terms of the loss of existing homes and the lost opportunity to develop the land for housing. This is responded to by Mr Colegrave.⁵⁷ Many of those who attended the community engagement and open day sessions spoke of the challenge in Palmerston North of finding housing. One of the reasons that the Site was selected in this location was to avoid being close to rural areas to the south that the council had indicated were being targeted for residential zoning in the future.
- 8.19 From a planning perspective, given the Council's strategic plans for the area, and the presence of the airport that the rural zoned land, I think it is unlikely based on the current zoning and planning provisions, would have been used for housing in the future. Any more intensive development would have to go through a plan change, and I am not aware of one being proposed or in the Council's plans.

Level of information

- 8.20 Some submitters consider there is insufficient information in the NoR application to enable an informed decision to be made about the magnitude of effects and whether these can be appropriately avoided, remedied, or mitigated. In my view, sufficient information has been included in the application to enable the effects to be considered. It has to be remembered

⁵⁷ Evidence of Fraser Colegrave, dated 9 July 2021, at section 5.

that this is a designation, and the RMA provides a two-step process by way of an NoR and a subsequent outline plan. In my view based on the assessments of the wider group of technical experts, and the magnitude of effects that have been identified, the conditions proposed with amendment will ensure that the effects are appropriately avoided, remedied, or mitigated.

9. RESPONSE TO SECTION 42A REPORT

9.1 I have reviewed the sections of the Section 42A Report relevant to my evidence. This review (both were prepared by Anita Coppleston and Phillip Percy) was focused on:

- (a) The Section 42A Technical Evidence: Planning Report; and
- (b) The Section 42A Planning Evidence: Effects and recommendations Summary Table: KiwiRail Freight Hub Notice of Requirement.

9.2 I consider that the Section 42A Technical Evidence: Planning Report has accurately described the elements within the NoR and works undertaken and proposed and captured the challenges that KiwiRail faced in relation to the complexity of providing for this significant new piece of infrastructure. I address these matters below.

9.3 The key matters I will respond to are summarised as:

9.4 The Section 42A Report also highlights some other specific matters and makes recommendations that have been responded to in the various pieces of evidence.

Lapse period

9.5 The Council Officers have suggested that there is prolonged uncertainty from the 15 year lapse period and the lapse period be reduced to 10 years. A number of submitters have also raised this issue. I have outlined above the reason for the 15 years requested I think this is justified for the delivery of the Freight Hub. I do not agree that the lapse period should be reduced to 10 years.

9.6 With respect to the lapse period delaying or deterring private investment, as well as public investments⁵⁸ this uncertainty is no different from the uncertainty related to zone changes on the edge of an urban area that are often led by

⁵⁸ Section 42A Technical Evidence: Economic impacts, dated 18 June 2021, at paragraph [18].

consultation on structure plans and introduce uncertainty about when development will occur and when new infrastructure will be provided.

- 9.7 I also consider that some investors will anticipate economic benefits and result in speculative investment. As noted in Mr Colegrave's evidence⁵⁹ the market started acquiring land in anticipation of an intermodal freight hub some while ago. To suggest that the Freight Hub designation could delay or deter public investment seems at odds with the tenor of the rest of the s42A Report that suggests that the Freight Hub should be deferred until the Ring Road decisions and actions are underway.
- 9.8 I consider that part of the uncertainty the Council alludes to is a result of actions related to the wider area, such as around the Waka Kotahi Palmerston PNITI projects also known as the Regional Freight Ring Road project, and when land zoned NEIZ will be developed. I consider that KiwiRail seeking 15 years will provide more certainty than relying on a zone and on the market to deliver change. The designation sends a clear signal to the community and market of what is intended to be delivered in this location and it will be delivered by a single entity rather than multiple landowners who will deliver changes in landuse via multiple future resource consents. Once incorporated into the District Plan the designation will be accompanied by a set of conditions outlining how the Site will be developed for all to see and to organise their lives and business affairs around.
- 9.9 The evidence of Mr Moyle and Mr Skelton explains that this is a complex project requiring a number of stages to be taken before it can be operational. This is common, in my experience, and the reality of a project of this scale.
- 9.10 The delivery of the PNITI programme of works will be important to enable the benefits of the Freight Hub to be fully realised and become fully operational. If KiwiRail had to wait for the PNITI programme (as is suggested) then an even longer lapse period may be required.
- 9.11 For these reasons, in my opinion the 15 years requested is appropriate in this situation.

Extent of Designation

- 9.12 The Council Officers have recommended that the extent of the designation should be reviewed after construction. This is in part in relation to the Powerco submission. The commitment to review, and if required, withdraw parts of the

⁵⁹ Evidence of Fraser Colegrave, dated 9 July 2021, at paragraph [4.26].

designation after the Freight Hub was constructed was covered in the conditions lodged with the NoR as shown in **Appendix 1**.

- 9.13 The Designation Extent also includes part of the existing designation for the NIMT corridor. This area is required for the installation of the Freight Hub's noise mitigation and planting. The relocation of the NIMT into the Freight Hub also allows the corridor to be re-laid at the same elevation as the Freight Hub which improves connectivity and allows room for future duplication of the NIMT. By locating the NIMT on the outside of the arrival and departure tracks it allows those trains that do not need to stop in Palmerston North to pass by the Site. All other trains will arrive at the Freight Hub, wagons will be reclassified and depart on new trains to the various destinations. So, while the relocation of the NIMT is necessary to enable the development of the Freight Hub, other activity using the NIMT will not necessarily stop at the Freight Hub.
- 9.14 The current NIMT designation is expected to be altered in the future to align with the future NIMT alignment once detailed design has been undertaken and its location and extent confirmed.

Assessment of policy documents

- 9.15 Paragraphs 6 and 7 of the Section 42A Report notes agreement in terms of consistency with policy documents and those parts of them that focus on enabling infrastructure. However the Council Officers consider that the NoR is inconsistent with:
- (a) District Plan provisions that seek to maintain the character and amenity of rural and residential environments;
 - (b) District Plan provisions directed at ensuring a safe and efficient land transport network for all road users; and
 - (c) provisions in the Horizons One Plan and the National Policy Statement for Freshwater Management 2020 ("NPS FM") that seek to prioritise the health and wellbeing of waterbodies and freshwater ecosystems.
- 9.16 The effects on the environment of allowing the NoR must be considered with particular regard to relevant planning documents and the level of consistency is one of a number of matters that the Hearing Panel must consider in assessing the effects of the NoR. Addressing each of these matters in turn I consider that:

- (a) the effects on the environment in terms of character and amenity of the rural and residential environments has been considered through the provision of extensive landscaping, inclusion of noise barriers, noise limits and provision for off-site mitigation where needed as set out in **Appendix 1**. The design of the Freight Hub will utilise a set of Design Guidelines that have been through the public plan making processes of the RMA and will add 'bespoke' additional principles and outcomes as necessary to address the rural / residential environment about the Freight Hub and KiwiRail's unique operational requirements;
- (b) implementing the conditions as proposed in Appendix 1 will improve safety in relation to the land transport network and will ensure provision of an efficient road and active transport network; and
- (c) the Section 42A Report indicates that an analysis of the water body effects against the NPS FM effects management hierarchy is a relevant consideration when evaluating the NoR and the Council Officers say that further assessment and analysis of the existing environment is required. While I agree that the NPS-FM is a relevant document, I consider that this primarily is a matter that the NPS FM specifically delegates to regional councils as part of their consideration of applications affecting natural inland wetlands and rivers. I have however for completeness considered the hierarchy below in paragraph 9.18.

9.17 I recognise that the NPS FM has a hierarchy of obligations in Te Mana o te Wai that prioritises:

- (a) first, the health and well-being of water bodies and freshwater ecosystems;
- (b) second, the health needs of people (such as drinking water); and
- (c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

9.18 There may be diversions and culverting but any contaminants in stormwater discharged will be treated before being discharged downstream. Fish passage will be maintained as a minimum and once detailed design is undertaken it may be possible to be improved. In terms of the health and well-being of water bodies and freshwater ecosystems, Mr Garrett-Walker's assessment of the waterbodies and freshwater ecosystems present in the Designation Extent

highlights the poor health of the waterbodies is due to 100 plus years of modification, development and land use effects. This includes the existing culverts under Railway Road and the NIMT that impede fish passage. Ms Rimmer has concluded that the streams and tributaries are of low natural character.

- 9.19 I consider that loss of the stream beds because of culverting will be mitigated by the proposed and significant increase in indigenous biodiversity, the provision of fish passage to upstream habitats and the management and treatment of discharges including creation of open watercourses, ponds and wetlands even if 'man made'. The issue of whether there will need to be offsetting and compensation for the loss of stream beds is in my view not a matter for the NoR. However, I consider that the potential extent of the planting (around 50ha excluding grass based on the Concept Landscape Plan submitted with the NoR) is far in excess of what would have been achievable through landuse under the rural and NEIZ provisions. The management of stormwater will in my view mitigate the effects on the health and wellbeing of the stream works that the Council should consider in relation to the NPS FM as the loss of stream beds is a regional consent matter.
- 9.20 The issue of health needs of people is related to impacts on groundwater and surface water used for drinking. It has been recognised on the Section 42A Report that effects on groundwater will be addressed through the regional council consenting process.
- 9.21 The NoR speaks directly to the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.
- 9.22 In relation to the works anticipated at this stage, I consider that the first three steps of the effects management hierarchy set out in the NPS FM for managing the adverse effects of an activity on the extent or values of a wetland or river (including cumulative effects and loss of potential value) have been addressed (to the extent required as part of this NoR process). That is, the values present have been assessed and:
- (a) adverse effects have been avoided where practicable – however, avoiding stream diversion and bed loss is not practicable;
 - (b) where adverse effects cannot be avoided, they have been minimised where practicable – the piping or culverting of streams is expected before earthworks commence and provision is expected to be made

for fish passage; and it is assumed that any fish in the streams at the time will be captured and released; and

- (c) where adverse effects cannot be minimised, they are being remedied where practicable - the provision for an open watercourse and 50 ha of planting which includes 38,409m² of naturalised channel and wetland planning is in my view more that remedying the adverse effects.

- 9.23 Further consideration and more detailed assessment will be carried out at the regional consenting phase.
- 9.24 The Section 42A Report addresses the District Plan requirements in relation to hazardous substances. It is suggested that there is insufficient information to evaluate whether the risks of accidental release or loss of control of hazardous substances, and the potential effects of this on the environment, can be adequately mitigated. No assessment has been undertaken due to detail available at this stage of the project.
- 9.25 I am of the view that the Hazardous Substances and New Organisms Act 1996 and Health and Safety at Work Act 2015 provide an appropriate level of management and control for these matters. This is because KiwiRail would need to undertake an assessment of the risks that would be associated with the storage of hazardous substances on the site to satisfy itself during the design process that it can meet the legislative requirements related to the health and safety of workers and the workplace and to protect the environment, and the health and safety of people and communities, by preventing or managing the adverse effects of hazardous substances and new organisms.

Application of the permitted baseline

- 9.26 The Council Officers disagree that the permitted baseline should applied in this context because the Freight Hub is at a different scale to the activities that are permitted in the NEIZ. I maintain my view that the permitted baseline can, and should be, applied in this context, noting that my assessment in the AEE and attachment 11 in the First section 92 response outlined those aspects of the Freight Hub that are expected to align with the permitted activities and standards of the NEIZ.
- 9.27 I consider that use of the permitted baseline can be used as a bench line for assessing the scale of effects that are generated. For example, the 9m zone height in the NEIZ is likely to be complied with across the site however the 50m maximum length of buildings is going to be exceeded. However, I

acknowledge that application of the permitted baseline is optional. Even if the permitted baseline is not applied in assessing the effects, I consider that the effects of the Freight Hub can be appropriately managed through the Proposed Conditions.

Detailed design and the Outline Plan of Works

- 9.28 The Council Officers consider that is inappropriate to leave matters to detailed design, Outline Plan of Works ("**OPW**") and management plans. The process and provisions in the RMA (which have operated since it came into force) provides for any Requiring Authority to designate land without the need for the detailed design to be provided. The RMA sets up a specific process for designations that allows for OPW and detailed design to come later. I think that as anticipated in the RMA the information provided with the NoR (in this case including the indicative landscape plan, cross sections and likely construction methodology and assessment of effects) is appropriate for this stage of the process.
- 9.29 The OPW process provides the opportunity to consider the detailed design and the information required to be provided through the designation conditions to ensure that giving effect to the proposal does not result in adverse effects that are greater than those assessed in the AEE. The proposed conditions set out in **Appendix 1** will ensure that the potential adverse effects of the Freight Hub will be appropriately and thoroughly addressed.

Regional consenting pathway

- 9.30 KiwiRail will apply any necessary regional consents in the future. KiwiRail is permitted to seek the regional consents separately from this process.
- 9.31 The NoR and the proposed conditions are focused on those matters relevant to the territorial authority given that the designation will be included in the District Plan and as outlined earlier, in my view does not create the concerns about the regional consenting pathway set out in paragraphs 462 – 463 of the Section 42A Report.
- 9.32 I do not, in light of the assessment of Mr Garrett-Walker, consider there to be a significant loss of natural waterways as suggested and in the context of the NPS-FM and Te Mana o te Wai such that there is a risk of off set or compensation not being able to be provided (if required).
- 9.33 It is not practicable to avoid all stream bed loss. I do not, given the nature of the Freight Hub and the alternatives consider that there are alternative designs

that would limit or avoid the loss of natural waterways further. We explored this and, in the end, determined that it was not possible to keep open all the watercourses running through the Freight Hub given the operational and safety requirements and the risk of contamination. It was also not possible to divert them all given the size of the Freight Hub and the function they perform in terms of conveying flood waters from upstream.

- 9.34 What has been provided is not the detailed design and the complex interplay of managing impacts on flood risk, roading and visual amenity will continue during the detailed design phase. I also note that KiwiRail has indicated it will continue work with mana whenua and is and has been actively engaging with them as covered in other evidence.
- 9.35 Council Officers (paragraph 641 and 661) have also taken issue with the section 92 response in relation to the Horizons One Plan's air quality assessment rules.⁶⁰ They suggest that KiwiRail have not provided an assessment to demonstrate how the proposal will comply with the permitted activity standards in Rule 15-14. The report notes that if not a permitted activity resource consent under Rule 15-17 as a discretionary activity would be required.
- 9.36 They also note that Ms Ryan has indicated that more information is needed. KiwiRail is not required to necessarily demonstrate that all permitted activity standards of the Regional Plan will be met at this stage. Any information about frequency, scale and nature of the diesel train movements if provided now may be irrelevant at the time of the detailed design due to potential changes in technology over time.
- 9.37 I consider that at the detailed design phase all potential adverse discharges to air (ie particulates and odour), not just dust will be considered. An Operational Dust Management Plan requirement is included in Appendix 1 to this evidence. This will address amenity effects related to dust. I also note the addition to the proposed conditions of a condition to address potential health effects, given the presence of dwellings that utilise roof water for drinking water. At the time of preparation of the Operational Dust Management Plan and the investigation of the potential for dust to impact on the quality of household water, the assessment against the One Plans rules will be undertaken as the relevant detail will be available.

⁶⁰

Section 42A Report, dated 18 June 2021, at paragraph [641] to [661].

- 9.38 I would expect that KiwiRail will engage a suitably qualified person to undertake the relevant air quality assessments and I expect that an operational air quality management plan as outlined by Mr Heveldt would be prepared, should a regional consent be required.

Appropriateness of the approach in the NoR to mitigating noise effects

- 9.39 The Council Officers have recommended that in order to manage noise effects, KiwiRail should consider changing the Designation Extent to include properties most affected by adverse effects.⁶¹ The Council Officers consider that this was a method that should have been specifically considered in the NoR. As noted above in paragraphs 7.13 and 7.14 the first priority in relation to noise was to use the address the location of noisy activities in the Freight Hub which has been considered and provided for in the Concept Design Layout
- 9.40 I do not consider that extending the designation to include these properties would be efficient management of resources, nor necessary to mitigate adverse effects.
- 9.41 Further, it would also need to be proven that this additional land is reasonably necessary to achieve KiwiRail's objectives. I do not consider that it is. Substantial noise mitigation has already been incorporated into the concept design and the Proposed Conditions include a requirement for KiwiRail to investigate affected dwellings and offer other mitigation measures (such as acoustic insulation) where necessary. I consider that these methods are appropriate to manage the noise effects from the Freight Hub.
- 9.42 The Council Officers have also raised concerns that there is no control on future noise sensitive activities being developed outside the Designation Extent. I acknowledge that good land use planning includes ensuring that appropriate provisions are in place to manage potential sensitive activities from locating near existing lawfully established activities, particularly where those activities cannot internalise all of their effects. However, as this is only at the NoR stage, the Freight Hub is not yet a lawfully established activity.
- 9.43 Further, as the NoR has interim effect from when it is lodged, this provides notice to surrounding landowners of the intent to develop this activity and the risk of the new activities locating on the land close to the Designation Extent at this stage of the process is a risk to those undertaking the development.

⁶¹ Section 42A Report, dated 18 June 2021, at paragraph [332].

How the Freight Hub will integrate with the existing and future road network and alignment with strategic transport documents

- 9.44 The Council Officers consider the Freight Hub is well aligned with strategic planning documents. In paragraph 13, however they note that the Council considers there is a degree of uncertainty about the alignment with strategic transport documents in relation to those seeking to achieve:⁶²
- (a) integration of transport and land use to support well connected communities;
 - (b) reliable multi-modal transport system with less modal conflict, including an integrated walking and cycling network;
 - (c) a transport system where no-one is killed or seriously injured with a target for reduction of 40% in the next decade; and
 - (d) efficient, reliable access and movement by road, rail and public transport, including for freight.
- 9.45 The four points above appear to be derived from the table in paragraph 188 of Ms Fraser's report and are referred to as 'themes' that she has developed due to commonality between various strategic transport documents. Looking at Ms Fraser's comments, in relation to each of these I do not think that the issue is uncertainty about alignment; but whether the transport conditions will achieve the objectives outlined in the themes.
- 9.46 Uncertainty in relation to how the Freight Hub aligns with the PNITI programme of works is mentioned in paragraph 14 of the Section 42A Report. I note that the issue was highlighted in consultation with the community. KiwiRail and Waka Kotahi met on a number of occasions to try to plan, coordinate and deliver their respective projects. The NoR was lodged prior to the PNITI programme being confirmed by the Waka Kotahi Board and made public. KiwiRail was not in a position to go public on what it had been advised about PNITI and rely on work that had not been confirmed. Therefore, the Road Network Integration Plan condition was proposed to enable KiwiRail to work with Waka Kotahi and the road controlling authorities to ensure the plans are integrated as far as practicable. KiwiRail is committed to ongoing engagement on these matters with Waka Kotahi, PNCC, MDC and HRC to ensure that the Freight Hub is efficiently integrated with these wider transport network improvements as they are confirmed.

⁶²

Section 42 Report, dated 18 June 2021, at paragraph [13].

- 9.47 The Section 42A Report notes that further refinement is appropriate to provide certainty in relation to process and outcomes and to optimise the Freight Hub's integration. As can be seen in **Appendix 1** to my evidence, changes have been made to outline the transport network improvement works KiwiRail will be responsible for delivering. Mr Georgeson has signalled the minimum works required to ensure that construction of the Freight Hub can commence. KiwiRail cannot require Waka Kotahi and PNCC to deliver specific works or projects that it needs to ensure that the road network is able to cope with traffic generated by the existing zoned land, let alone the Freight Hub.
- 9.48 Much of the work upgrading the road network has been on hold subject to Waka Kotahi advancing the regional ring road aka PNITI to the point that the projects within the programme could be funded. The Section 42A Report acknowledges that KiwiRail is not required to assess the effects of the Ring Road and that these upgrades are not all KiwiRail's responsibility. However, the opportunity to integrate the Freight Hub with the regional ring road has been a key consideration in this NoR, and the conditions have been carefully considered to enable this to occur, while providing for access to the Freight Hub in the event that it does not.

Proposed design framework

- 9.49 The Council Officers have questioned the adequacy of the NEIZ design guide as basis for the design for the Freight Hub and recommended that a bespoke set out design principles and outcomes are drafted and agreed and that a design framework is drafted and agreed.⁶³ They have also suggested that the design principles and outcomes are agreed now as part of the current process.⁶⁴
- 9.50 I consider that the NEIZ Design Guide contained in the District Plan should provide the starting point for any design principles and outcomes as land within the Designation Extent already zoned NEIZ and that Design Guide already deals with the interface with Rural zoned land. I also recognise that the design of the Freight Hub must meet KiwiRail's operational requirements.
- 9.51 I agree with many of the points made in the Section 42A Report in paragraphs 409- 412 about the development of principles and outcomes for the design of the Freight Hub. In my opinion, and as set out in the evidence of Ms Rimmer, the NEIZ Design Guide should be used as a foundation on which the design outcomes and principles should be built. The Proposed Conditions provide a

⁶³ Section 42A Report, dated 18 June 2021, at paragraph [413].

⁶⁴ Section 42A Report, dated 18 June 2021, at paragraph [414].

collaborative process using the Community Liaison Forum (as discussed below) and the mana whenua engagement process as the basis for engagement with mana whenua, the community, and the council and other stakeholders to inform development of the design principles and outcomes in the Landscape and Design Plan. It would be premature to have those outcomes agreed now. As the Freight Hub is an operational rail facility, KiwiRail needs to ensure that its safety and operational requirements are achieved and this will fundamentally inform design. The core design outcomes and principles to be achieved are outlined in Ms Rimmer's evidence and have been reflected in the Proposed Conditions.

Ongoing participation with mana whenua, the community, and key stakeholders

- 9.52 The Section 42A Report seeks more detail on provision for active and meaningful participation of iwi, the community and key stakeholders in the development of the various plans required in the designation conditions.
- 9.53 In the NoR as lodged, the Community Liaison Forum and the Mana Whenua Engagement Framework are specified in conditions as the key focus for the ongoing participation in development of all plans.
- 9.54 As outlined in Ms Poulsen's evidence and summarised at 6.122 and 6.123 of my evidence, it was important that mana whenua were able to determine how they wish to work on the project and ensure that their values are represented throughout. The submissions from Ngāti Kauwhata, Ngāti Turanga, Rangitāne o Manawatū and Ngāti Raukawa have indicated what form they see this taking with a desire to have a panel created, which they can be part of, to include mana whenua in decision making for the Freight Hub, particularly in relation to natural resources within their rohe.
- 9.55 It would be inappropriate for KiwiRail to attempt to pre-empt this process in conditions, given the constructive engagement undertaken to date. I support the conditions proposed as they outline a process through which those values will be recognised and provided for through the mana whenua engagement framework.
- 9.56 In relation to active and meaningful participation with the community, the idea of the Community Liaison Forum has been developed as a concept in the form of an interactive forum, rather than a traditional community liaison group. This form is not fixed and communication could take a range of forms whether by way of email updates, online zoom updates where a much wider range of members of the community can participate, if they wish to do so or public

meetings. The intention was for KiwiRail to work with the community to determine what it wanted as the mechanism to communicate with, receive information and provide feedback. Through the challenges of Covid-19, KiwiRail also recognised the benefits that alternative means of engagement could provide, such as Social PinPoint and online zoom meetings.

- 9.57 The approach proposed in the conditions in **Appendix 1** is one of setting out that through the Community Liaison Forum the community shall provide feedback on the draft plans (and updates) required to be prepared under the designation conditions ; the Community Liaison Forum will operate for a specific timeframe and that there will be a specific person the Community Liaison Person that is the point of contact (condition 15). A process has been provided to identify particular participants and methods of communication.

10. PROPOSED CONDITIONS

- 10.1 A set of conditions were proposed in the NoR as lodged. These have been modified through the section 92 response provided in February 2021 and are further modified with this evidence as a result of careful consideration of the matters raised in submissions and the Section 42A Report. The updated set is attached as (**Appendix 1** in both clean and tracked changes). The changes are explained in my evidence and in the evidence of the other experts

Karen Bell

9 July 2021

APPENDIX 1
PROPOSED CONDITIONS

Appendix 1

General Conditions

1. Except as modified by the conditions below and subject to final design and accompanying outline plan(s), the works authorised by this Designation shall be undertaken generally in accordance with the following information provided by the Requiring Authority in the Notice of Requirement for the Freight Hub dated 23 October 2020 [and the further information provided by the Requiring Authority dated 15 February 2021, 24 May 2021 and 28 May 2021, and the following:](#)
 - ~~(a) — Designation extent dated 15 September 2020.~~
 - ~~(b) — Land Requirement plans and schedule of land included in designation.~~
 - ~~(c) — Volume 2 Assessment of Effects on the Environment and supporting information.~~
 - ~~(i)(a)~~ Concept Plan (Figure 124) dated 12 February 2021, prepared by Stantec.
 - ~~(ii)(b)~~ Draft indicative Landscape plan dated ~~3 February~~[6 July](#) 2021 prepared by Isthmus Group (rev ~~1B~~).
 - ~~(d) — Volume 3 Technical Reports.~~
2. Where there is any inconsistency between the Notice of Requirement documentation listed above and the designation conditions, the designation conditions shall prevail.
3. Any reference in these conditions to a ~~New Zealand~~ Standard includes any future amendments or replacements of that standard.

Lapse Period

4. The designation shall lapse if not given effect to within 15 years from the date on which it is included in the District Plan.

Management Plans

5. At least 20 working days prior to construction commencing or unless otherwise specified in the conditions below, the management plan(s) specified below shall be submitted to Palmerston North City Council for certification that the management plan(s) meets the objective specified.
6. All works shall be carried out in accordance with the applicable management plan(s) and other plans required by these conditions.

Outline Plan(s)

7. An outline plan or plans shall be prepared and submitted to the Council in accordance with section 176A of the RMA.
8. The outline plan(s) may be submitted for the entire Freight Hub or for one or more stages,

aspects, sections, or locations of works.

9. The outline plan(s) shall include any relevant ~~management~~ plan for the particular design or construction ~~or operational~~ matters being addressed in the outline plan and any updates of any plans. The following must be included in an outline plan or plans (as relevant to the particular design or construction matters being addressed):
 - (a) Construction Management Plan
 - (b) Construction Traffic Management Plan
 - (c) Construction Noise and Vibration Management Plan
 - (d) Landscape and Design Plan
 - (e) Construction Engagement Plan
 - (f) Stormwater Management Plan
 - (g) Stormwater Monitoring and Maintenance Plan
 - (h) Road Network Integration Plan
 - (i) Operational Noise and Vibration Management Plan
 - (j) Operational Traffic Management Plan
 - (k) Operational Lighting Design Plan
 - ~~(k)(l)~~ Operational Dust Management Plan
10. The documents and plans referred to in condition 9 above may be amended to provide updated information or reflect changes in design, construction methods or the management of effects without the need for a further outline plan where:
 - (a) amendment proposed is provided in writing to the Palmerston North City Council; and
 - (b) amendment is in general accordance with the original document or plan, or the amendment is to give effect to an amendment required under another statutory approval.

Communication and Engagement

Community Liaison Forum

11. At least 12 months prior to construction ~~and until at least 12 months after the Freight Hub commences operation~~, the Requiring Authority shall establish ~~and maintain a~~ Community Liaison Forum.
12. The Requiring Authority shall maintain the Community Liaison Forum until at least 6 months after practical completion of construction of all main components of the Freight Hub.-

~~12.13.~~ The purpose of the Community Liaison Forum is to provide an interactive forum through which the Requiring Authority can provide information to, and receive feedback from the community on any matters relating to the construction and operation of the Freight Hub, including updates on material changes in design or activity.

~~14.~~ The Community Liaison Forum shall be open to mana whenua and all interested residents and organisations within the vicinity of the Site.

~~15.~~ The Requiring Authority shall develop and implement:

(a) a process for identifying particular parties that may be interested in the Community Liaison Forum, including:

(i) Bunnythorpe School and any childcare facilities;

(ii) Community groups (including Bunnythorpe Community Centre, faith-based groups and residents organisations);

(iii) Businesses (including in Bunnythorpe village and NEIZ);

(iv) cycling and walking groups (including Te Araroa Manawatū Trust); and

(b) the methods of communication with those who want to be informed and/or participate in the Community Liaison Forum.

~~13.16.~~ The Requiring Authority shall determine the frequency of updates to the community through the forum, which shall be at least every six months during construction and 12 months during operation.

~~14.17.~~ The Requiring Authority shall ensure that the forum provides opportunities for the community to provide feedback, including feedback on draft ~~management~~ plans and updates of any plans prepared in accordance with the conditions of this Notice of Requirement with the Requiring Authority recording any feedback provided and how it has been considered.

Community Liaison Person

~~15.18.~~ Within 12 months of the [date the NoR is confirmed] ~~and until at least 12 months after the Freight Hub commences operation,~~ the Requiring Authority shall appoint a Community Liaison Person.

~~19.~~ The Community Liaison Person role shall be in place until at least 6 months after practical completion of all main components of the Freight Hub.

~~16.20.~~ The role of the Community Liaison Person is to provide a point of contact for the community on behalf of the Requiring Authority for all enquiries relating to the Freight Hub, including land acquisition, construction or operational matters.

~~17.21.~~ The Community Liaison Person will be responsible for administering the Community Liaison Forum, once established in accordance with condition 11.

~~18.22.~~ The Requiring Authority shall make the contact details of the Community Liaison Person available

to the community.

Construction Engagement Plan

~~19-23.~~ ~~Prior to the commencement of construction, the~~The Requiring Authority shall prepare a Construction Engagement Plan and implement the plan for the duration of construction.

~~20-24.~~ The objective of the Construction Engagement Plan shall be to outline a process to ensure that the community is provided with construction information during construction of the Freight Hub.

~~21-25.~~ The Construction Engagement Plan shall include:

- (a) Contact details of the Community Liaison Person appointed pursuant to condition 18.
- (b) A process for identifying the parties that will be communicated with, and the methods of communication.
- (c) Information on and the methods for communicating the following:
 - (i) likely construction works and programme;
 - (ii) hours of construction where these are outside of normal working hours or on weekends or public holidays, including night-time heavy vehicle movements;
 - (iii) routes for construction vehicles, including vehicle movements and types (ie light or heavy vehicles);
 - (iv) any temporary traffic management measures, including changes to pedestrian and cycling routes, public transport and school bus routes and the reinstatement of those routes;
 - (v) progress of any construction works against key project milestones and completion dates; and
 - (vi) the Construction Traffic Management Plan developed pursuant to condition 57.

Complaints Register

~~22-26.~~ Within 12 months of **[date the NoR is confirmed]** the Requiring Authority shall establish a register of any complaints received and action undertaken by the Requiring Authority in response to the complaint, and maintain the register until at least completion of construction of the Freight Hub ~~12 months after the Freight Hub commences operation.~~

~~23-27.~~ The complaints register must include:

- (a) the name and contact details of the complainant;
- (b) the nature and details of the complaint; and

- (c) measures taken by the Requiring Authority to respond to the complaint or where any measures have not been taken, the reasons why.

~~24-28.~~ The complaints register shall be made available to Palmerston North City Council upon request.

~~25-29.~~ The Requiring Authority shall provide regular updates to the community through the Community Liaison Forum on complaints received and any measures to address any complaints identified.

Mana Whenua

Mana Whenua Values

~~26-30.~~ ~~Prior to the commencement of construction, the~~The Requiring Authority shall prepare a Mana Whenua Engagement Framework.

~~27-31.~~ The objective of the Mana Whenua Engagement Framework is to recognize and provide for mana whenua values in the area affected by the Freight Hub, to develop mechanisms to avoid or mitigate effects on mana whenua values through the implementation of agreed monitoring and mitigation measures and provide opportunities for expression of those values through design.

~~28-32.~~ The Requiring Authority shall engage with mana whenua to develop the contents of the Mana Whenua Engagement Framework, which may include:

- (a) roles and responsibilities of mana whenua, including in relation to design and development of the Freight Hub;
- (b) involvement in preparation of management plans;
- (c) monitoring activities to be undertaken;
- (d) involvement in developing and partaking in accidental discovery protocols;
- (e) site dedication protocols; and
- (f) opportunities for the expression of mana whenua values in the design and development of the Freight Hub.

Contamination

~~29-33.~~ ~~Prior to commencement of construction, the~~The Requiring Authority shall undertake a detailed site investigation in accordance with the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ("NES-CS") and obtain any resource consents required under the NES-CS.

~~30-34.~~ The Requiring Authority shall ensure that any contaminated soil identified from the detailed site investigation is managed in accordance with the requirements of the NES-CS, and where appropriate prepare a Contaminated Site Management Plan.

Archaeology

- ~~31.~~35. The Requiring Authority shall ensure that where any land disturbing works occur in an area of the Designation which is not subject to an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014, an accidental discovery protocol is in place.
- ~~32.~~36. The accidental discovery protocol shall be prepared in collaboration with mana whenua and in consultation with Heritage New Zealand Pouhere Taonga, and shall include:
- ~~(a)~~ Details of contractor training regarding the skills necessary to be aware of the possible presence of cultural or archaeological sites or material;
 - ~~(b)~~ General procedures following the accidental discovery of possible archaeological sites, kōiwi tangata, wahi tapu or wahi taonga, including the requirement to immediately cease enabling or construction works in the vicinity of the discovery and the requirement to notify parties including, but not limited to, Heritage New Zealand Pouhere Taonga;
 - ~~(a)(c)~~ specific procedures in the event that kōiwi tangata or taonga are discovered, work must cease immediately in the vicinity of the remains and mana whenua, Heritage New Zealand Pouhere Taonga, New Zealand Police and the Palmerston North City Council must be contacted;
 - ~~(d)~~ Procedures for the custody of taonga (excluding kōiwi tangata) or material found at an archaeological site; and
 - ~~(b)(e)~~ activities that must be undertaken before construction activities in the vicinity of a discovery may recommence, including appropriate tikanga, recording, recovery of artifacts, and engagement.

Stormwater

Stormwater Management Report

- ~~33.~~37. The Requiring Authority shall prepare and submit a Stormwater Management Report with the first outline plan to Palmerston North City Council containing details of the stormwater detention ponds.
- ~~34.~~38. The Stormwater Management Report shall be prepared by a suitably qualified and experienced person.
- ~~35.~~39. The purpose of the Stormwater Management Report is to confirm the design of the stormwater detention ponds is sufficient to mitigate the potential downstream flooding effects as a result of any increased stormwater runoff from the Freight Hub and/or the loss of flood plain storage as a result of the site formation.
- ~~36.~~40. The Stormwater Management Report shall:
- (a) outline the results of hydraulic modelling of the Mangaone Stream Catchment as affected by the Freight Hub; and

- (b) confirm the appropriate size of the stormwater detention ponds.

Stormwater Management and Monitoring Plan

- ~~37.41.~~ ~~Prior to commencement of construction, the~~ The Requiring Authority shall prepare and implement a Stormwater Management and Monitoring Plan.
- ~~38.42.~~ The objective of the Stormwater Management and Monitoring Plan is to outline the design features for the effective operation of the stormwater system, and the methods for the monitoring and maintenance of the stormwater system.
- ~~39.43.~~ The Stormwater Management and Monitoring Plan shall be prepared by a suitably qualified and experienced person.
- ~~40.44.~~ The Stormwater Management and Monitoring Plan shall include:
- (a) design measures to assist with achieving hydraulic neutrality and methods to assist with stormwater treatment and contaminant removal utilising natural systems including retention areas, permeable surfaces, wetland/swales and appropriate vegetation;
 - (b) the methods that will be used for the operation and maintenance of the stormwater management system to ensure its successful long-term performance, including sediment removal, clearance of debris, replacement of vegetation, and training of operators; and
 - (c) details of the location and operation of any stormwater outlets from the site, including emergency spillway.

Level Crossing Safety Impact Assessment

- ~~41.45~~ At least 12 months prior to submission of the first outline plan~~construction commencing~~, the Requiring Authority shall commission Level Crossing Safety Impact Assessment(s) or update any existing assessment in relation to the impact of the Freight Hub on the following crossings for:
- (a) the Campbell Road/Kairanga Bunnythorpe Road level crossing;~~and~~
 - (b) the Waughs Road/Campbell Road level crossing;~~i~~
 - (c) pedestrian level crossings in the vicinity of Aorangi Marae and Taonui School;
and
 - (d) Campbell Road crossing south of Feilding.
- ~~42.46.~~ The Requiring Authority will engage with Palmerston North City Council and Manawatu District Council to determine how to appropriately allocate implementation responsibilities based on ~~in relation to~~ the recommendations in each Level Crossing Safety Impact Assessment and agree the allocation of responsibilities if any upgrade is required.

Road Network Integration Plan

~~43.47.~~ At least 12 months prior to ~~construction commencing~~submission of the first outline plan of works, the Requiring Authority shall prepare a Road Network Integration Plan.

~~44.48.~~ The objective of the Road Network Integration Plan is to ensure that the roading network for the Freight Hub is appropriately managed and safely and efficiently integrated with the wider transport network.

~~45.49.~~ The Requiring Authority shall consult and share information with Palmerston North City Council, Horizons Regional Council, Manawatu District Council and Waka Kotahi NZ Transport Agency in preparing the Road Network Integration Plan (and any updates).

~~46.50.~~ The Road Network Integration Plan shall include:

- (a) the timing for the closure of and/or the legal stopping of any relevant roads (or sections of roads, as the case may be), including Railway Road, Clevely Line, Te Ngaio Road and Roberts Line;
- (b) the location, timing and design of any access to the Freight Hub;
- (c) the timing and form of any changes and upgrades required to existing property accesses, intersections and roads required for ~~construction and~~ operation of the Freight Hub to be delivered by the Requiring Authority including:
 - i. changes as a result of the closure of Te Ngaio Road and existing Railway Road termination;
 - ii. a perimeter road along the western side of the Freight Hub between Maple Street and Roberts Line that includes a safe separated shared path;
 - iii. a new Intersection between Roberts Line and the perimeter road;
 - iv. extension of Richardsons Line north of the Roberts Line to a Freight Hub access;
 - v. two additional Freight Hub accesses via the perimeter road on the northern and western boundaries; and
 - vi. accesses to 422 and 422A Railway Road (the legal descriptions being SEC 1480 BLK VII KAIRANGA SD and LOT 1 DP 74613).
- (d) the timing for the closure of any level crossings;
- (e) the proposed speed limits for any new roads and changes to speed limits for existing roads;
- (f) the location and timing and form of any changes and upgrades to pedestrian walkways, cycleways and public transport facilities, including ~~any new walkways, cycleways and public transport facilities, including~~ new or

relocated bus stops;

- (g) the location and timing of confirmed and funded upgrades or additions to the wider transport network and the identification of opportunities for that wider transport network to integrate with any roading upgrades and connections required for construction and operation of the Freight Hub; and
- (h) details of the feedback provided by Palmerston North City Council, ~~and~~ Horizons Regional Council, Manawatu District Council and Waka Kotahi NZ Transport Agency and how this has been incorporated into the Road Network Integration Plan, including any feedback regarding the location and timing of a ring road and/or any bypasses of Bunnythorpe, and how these connections integrate with the roading network required for the construction and operation of the Freight Hub; and
- (i) the timing of reviews and frequency of updates to the Road Network Integration Plan, based on the matters outlined.-

Roading connections and upgrades

- 51. Unless alternative access to the Freight Hub is provided that no longer requires the perimeter road (or a relevant part of it) to be constructed, the Requiring Authority shall construct the perimeter road (or relevant part) to connect to the adjacent road network and ensure the road (or relevant part) is fully operational prior to the closure of Railway Road.
- 52. Unless otherwise provided by other road controlling authorities, the upgrades listed in condition 50(c) shall be delivered by the Requiring Authority according to the timing outlined in the Road Network Integration Plan.

Landscape and Design Plan

- 47.53. ~~Prior to commencement of construction, the~~The Requiring Authority shall prepare ~~and submit~~ a Landscape and Design Plan with the first outline plan to Palmerston North City Council. ~~The Requiring Authority shall implement the Landscape and Design Plan.~~
- 48.54. The objective of the Landscape and Design Plan is to outline the landscape measures to be incorporated into the Freight Hub design, to manage potential adverse effects of the Freight Hub on landscape, visual amenity and natural character.
- 49.55. The Landscape and Design Plan shall be prepared by a suitably qualified and experienced person.
- 50.56. The Landscape and Design Plan shall include:
 - (a) design principles and design outcomes that have informed the design of the Freight Hub and the extent to which those meet:
 - i. KiwiRail's operational requirements and any other plans required under the conditions of this Designation; and
 - i.ii. the extent to which the design of the Freight Hub aligns with the industrial and rural values highlighted in the North East Industrial Design Guide. Where a

different approach to the North East Industrial Design Guide is proposed, the Landscape and Design Plan shall outline the reasons for a departure from the approach and outline why the alternative approach is preferred.

- (b) the location and types of proposed landscape and visual amenity plantings (including plant size, numbers and spacing), including planting of stormwater detention ponds, stream and riparian margins, cut faces, fill batters, and show how these plantings and any other appropriate design measures (including but not limited to the final form, finish and articulation of the proposed buildings and batter heights and slopes):
 - i. will integrate the built forms including roof lines and walls of the Freight Hub and the related earthworks into the surrounding environment;
 - ii. mitigate visual amenity effects in relation to residential properties;
 - iii. contribute to the open watercourse and stormwater ponds appearing as natural features and enhancing local biodiversity;
 - iv. comply with the Electricity (Hazards from Trees) Regulations 2003, including at full maturity; and
 - v. comply with any regional consents.
- (c) how the proposed planting would enhance ~~the~~ natural character, including - of the Mangaone Stream surrounds and restore indigenous biodiversity;
- ~~(d)~~ how sites of cultural and historical significance (if identified through any engagement undertaken in accordance with conditions 28 and 33) will be recognised;
- ~~(d)~~(e) how any roads and walkways within the designation extent integrate into the character of the surrounding area and connect to paths and cycleways outside the designation and include opportunities for outlook(s) over the Freight Hub;
- ~~(e)~~(f) the location of the proposed noise mitigation structures as outlined in the Operational Noise and Vibration Plan, and where required, the final form, finish, and planting of these structures (including vertical noise barriers and bunds) along Sangsters Road and Maple Street, including vertical noise barriers and bunds and associated planting with a minimum depth of 5 m on the external face; of the noise mitigation structures;
- ~~(f)~~ how the lighting effects on the landscape and visual amenity are minimised;
- ~~(f)~~(h) the proposed timing for establishing any landscape or visual amenity planting, including -to maximise mitigation planting coverage prior to construction of the main buildings and/or operation of the Freight Hub where practicable; and
- ~~(g)~~(i) the process and programme for maintaining any landscape or visual amenity

planting [including plant and animal pest management](#).

Construction Management Plan

~~51.57.~~ ~~Prior to commencement of the construction, the~~[The](#) Requiring Authority shall prepare a Construction Management Plan, and implement the plan for the duration of construction.

~~52.58.~~ The objective of the Construction Management Plan is to outline measures for managing construction related effects.

~~53.59.~~ The Construction Management Plan shall include:

- (a) a construction programme, including any seasonal timings for works;
- (b) a detailed site layout;
- (c) the design and management specifications for all earthworks on-site, including disposal sites and their location;
- (d) ~~measures to be implemented to minimise dust from construction and related earthworks~~ [a construction dust management plan consistent with any required regional council consents](#);
- (e) [measures to ensure that enabling or construction works and structures are designed and undertaken to comply with the New Zealand Code of Practice for Electrical Safe Distances \(NZECP 34:2001\)](#);
- ~~(e)~~(f) the design of temporary lighting for enabling and construction works and construction support areas;
- ~~(f)~~(g) details on the timing of the installation of screening and planting and opportunities where this can be undertaken prior to works commencing;
- ~~(g)~~(h) the approach to the management of construction waste;
- ~~(h)~~(i) the accidental discovery protocol adopted by the Requiring Authority;
- ~~(i)~~(j) a description of training requirements for all site personnel (including employees, subcontractors and visitors) including details of briefings for employees and subcontractors about the accidental discovery protocol adopted by the Requiring Authority;
- ~~(j)~~(k) environmental incident and emergency management procedures; and
- (l) contact numbers for key construction staff, and staff responsible for any monitoring requirements.

Network utilities

~~60.~~ [Prior to any land disturbing works, the Requiring Authority shall:](#)

- (a) identify the location of existing overhead or underground network utilities (www.beforeudig.co.nz);
- (b) identify these utilities relevant in any construction plans and place appropriate physical indicators on the ground showing specific surveyed locations; and;
- (c) provide the information of the network utilities identified under Condition 60(a) and (b) to all construction personnel, including contractors.

Construction Traffic Management Plan

- ~~54-61.~~ Prior to the commencement of construction, At least three months prior to construction commencing tthe Requiring Authority shall prepare a Construction Traffic Management Plan, and implement the plan for the duration of construction.
- ~~55-62.~~ The objective of the Construction Traffic Management Plan is to outline the methods that will be undertaken to minimise adverse effects from construction traffic and construction works on property access, ~~traffic~~ road user safety and efficiency of traffic movements.
- ~~56-63.~~ The Construction Traffic Management Plan shall be prepared by a suitably qualified and experienced person.
- ~~64.~~ At least 20 working days prior to the Construction Traffic Management Plan being submitted to Palmerston North City Council for certification under condition 5, the Requiring Authority shall provide a draft of the Construction Traffic Management Plan to Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council, Manawatu District Council for feedback.
- ~~57-65.~~ The Construction Traffic Management Plan shall:
- (a) identify the numbers, frequencies, and timing of traffic movements for each phase of the construction programme as developed under the Construction Management Plan, including any limitations on heavy vehicle movements through key areas (including local roads) during night and peak times, as required either in relation to traffic conditions or where required to mitigate potential noise and vibration effects;
 - (b) identify safe site access routes, -site access arrangements, and access points for heavy vehicles involved in constructing -the Freight Hub in a manner consistent with Waka Kotahi NZ Transport Agency's Code of Practice for Temporary Traffic Management;
 - (c) identify any upgrades that are needed to ensure safe site access routes and access points, including possible night-time movement of construction vehicles;
 - ~~(e)(d)~~ outline methods to manage local and network wide effects of the construction, including temporary traffic management measures, such as traffic detours (including for public transport, walking and cycling, and school bus routes, and infrastructure) and temporary speed limits;

- ~~(d)~~(e) provide details for measures to maintain safe pedestrian and cyclist access movements in the vicinity of the site, including measures to ensure that any shared paths being delivered by PNCC and Te Araroa Trail between Palmerston North and Feilding are available at all times (including any diversions) during construction of the Freight Hub;
 - ~~(e)~~(f) include the construction vehicle noise limits and any requirements for effective noise suppression;
 - (g) identify the properties affected and detail measures to provide vehicle access to private and adjacent properties on Roberts Line including -ensuring that access to the northern end of Richardsons Line at Roberts Line is able to be provided for heavy vehicles at all times;
 - ~~(f)~~(h) identify opportunities to use the rail network to minimise effects on the roading network where practicable;
 - ~~(g)~~(i) provide details for any new permanent accesses to be formed at the earliest practical opportunity to limit the adverse effects of construction and severance, including access to 422 and 422A Railway Road (-SEC 1480 BLK VII KAIRANGA SD and LOT 1 DP 74613);
 - ~~(h)~~(j) provide measures for the management of fine material loads (e.g. covers) and the timely removal of any material deposited or spilled on public roads; ~~and~~
 - (i) detail the process for and locations of construction traffic monitoring and the frequency and times of monitoring relevant to the stage of construction set out in the programme in the Construction Management Plan;
 - ~~(j)~~(k) provide a process for preparing a traffic management communications plan;
 - (l) identify any construction activity including roading works occurring along access routes identified in condition 65(b) and consider the cumulative effects of those activities if any;
 - (m) provide details of any feedback provided by Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council and Manawatu District Council and how it was incorporated;
 - (n) the details of a construction lighting management plan, to demonstrate how compliance with AS/NZS 4282:2019 Zone A2 Limits are achieved between 11:00pm and dawn, and any measures to address potential headlight sweep.
66. The Construction Traffic Management Plan shall be reviewed and updated as required by the key stages identified in the construction programme in condition 57.
67. The Requiring Authority shall provide any updated draft Construction Traffic Management Plan to Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council and Manawatu District Council for review and feedback.

Construction Noise and Vibration Management Plan

~~58-68.~~ ~~Prior to the commencement of construction, the~~The Requiring Authority shall prepare a Construction Noise and Vibration Management Plan, and implement the plan for the duration of construction.

~~59-69.~~ The ~~purpose-objective~~ of the Construction Noise and Vibration Management Plan is to demonstrate how compliance with Conditions 71 and 72 ~~the following~~ will be achieved for the duration of construction of the Freight Hub.

~~, where applicable to the relevant works:~~

~~(a) — NZS 6803:1999 Acoustics — Construction Noise; or~~

~~(b) — Waka Kotahi, State Highway Construction and Maintenance Noise and Vibration Guide, 2019.~~

~~60-70.~~ The Construction Noise and Vibration Management Plan shall be prepared by a suitably qualified and experienced person.

71. All construction works must be undertaken to ensure that, as far as practicable, construction noise does not exceed the limits in Table XX1. Construction Noise -levels. Levels must be measured and assessed in accordance with NZS 6803:1999 Acoustics – Construction noise as follows (at occupied dwellings).

Table 1 - Construction Noise -levels

<u>Time of Week</u>	<u>Time Period</u>	<u>L_{Aeq}</u>	<u>L_AF_{max}</u>
<u>Weekdays</u>	<u>0630 – 0730</u>	<u>55 dB</u>	<u>75 dB</u>
	<u>0730 – 1800</u>	<u>70 dB</u>	<u>85 dB</u>
	<u>1800 – 2000</u>	<u>65 dB</u>	<u>80 dB</u>
	<u>2000 – 0630</u>	<u>45 dB</u>	<u>75 dB</u>
<u>Saturdays</u>	<u>0630 – 0730</u>	<u>45 dB</u>	<u>75 dB</u>
	<u>0730 – 1800</u>	<u>70 dB</u>	<u>85 dB</u>
	<u>1800 – 2000</u>	<u>45 dB</u>	<u>75 dB</u>
	<u>2000 – 0630</u>	<u>45 dB</u>	<u>75 dB</u>
<u>Sundays and Public</u>	<u>0630 – 0730</u>	<u>45 dB</u>	<u>75 dB</u>
	<u>0730 – 1800</u>	<u>55 dB</u>	<u>85 dB</u>
	<u>1800 – 2000</u>	<u>45 dB</u>	<u>75 dB</u>

<u>Holidays</u>	<u>2000 – 0630</u>	<u>45 dB</u>	<u>75 dB</u>
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N.B. Shading indicates *night-time* hours.

72. Construction vibration must, as far as practicable, comply with the criteria in Table 2 Vibration Criteria, where:

- (a) -Measurement is in accordance with ISO 4866:2010 Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures;
- (b) BS 5228-2 is British Standard BS 5228-2:2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.

Table 2: Vibration Criteria

<u>Receiver</u>	<u>Location</u>	<u>Details</u>	<u>Category A PPV</u>	<u>Category B PPV</u>
<u>Occupied dwellings and schools</u>	<u>Inside the building</u>	<u>2000 – 0630</u>	<u>0.3 mm/s</u>	<u>1 mm/s</u>
		<u>0630 – 2000</u>	<u>1 mm/s</u>	<u>5 mm/s</u>
<u>Other occupied buildings</u>	<u>Inside the building</u>	<u>0630 – 2000</u>	<u>2 mm/s</u>	<u>5 mm/s</u>
<u>Unoccupied buildings</u>	<u>Building foundation</u>	<u>Vibration transient</u>	<u>5 mm/s</u>	<u>BS 5228-2 ² Table B.2</u>
		<u>Vibration continuous</u>		<u>50% of BS 5228-2 Table B.2³</u>

61.73. The Construction Noise and Vibration Management Plan shall include:

- (a) the noise and vibration limits as set out in the conditions 71 and 72;
- (b) a description of the construction works and processes;
- (c) a description of anticipated equipment and any noise or vibration suppression devices;
- (d) the hours of operation, including times and days when activities causing noise and/or vibration would occur;
- (e) identification of affected dwellings and other noise sensitive activities and projected noise and vibration levels for those dwellings-activities;
- (f) a description of alternative management strategies where compliance with the criteria

in Conditions 71 or 72-may not be achieved;

- ~~(f)~~(g) methods and frequency for monitoring and reporting on construction noise and vibration; ~~and~~
- (h) details of the procedures for notifying stakeholders of construction activities and handling noise and vibration complaints as set out in the Construction Engagement Plan and Complaints Register in conditions 23-29;
- ~~(g)~~(i) construction equipment operator training procedures and expected construction site behaviours; and-
- (j) contact numbers for key construction staff, staff responsible for noise assessment and the council compliance officer.

Water supply

74. All new buildings within the Freight Hub shall be serviced with adequate water supply and access to that supply for firefighting purposes in accordance with the New Zealand Fire Service Firefighting Code of Practice SNZ PAS 4509:2008.

Operational Lighting Design Plan

- ~~62.75.~~ Prior to the commencement of construction of the Freight Hub, the ~~The~~ Requiring Authority shall prepare and implement an ~~Lighting~~ Operational Lighting Design Plan.
- ~~63.76.~~ The objective of the Operational- Lighting Design Plan is to demonstrate how the lighting for the outdoor operational areas, internal access roads, and carparks of the Freight Hub will be designed to manage glare and light spill from the operation of the Freight Hub, -and demonstrate compliance with:

- (a) AS/NZS 4284:2019 – Control of the obtrusive effects of outdoor lighting, Zone A2 limits;
- (b) Sky glow caused by artificial lighting shall have a Sky Glow Upward Light Ratio of no greater than 0.01, calculated in accordance with AS/NZS4282:2019; and
- ~~(a)~~(c) Glare to the Palmerston North Airport Control Tower resulting from light emitted (including artificial light and glare from buildings and structures) from the Freight Hub must meet the AS/NZS4282:2019 limits for Zone A2, and to comply with R12A.4(f) of the District Plan.

- ~~64.77.~~ The Operational Lighting Design Plan shall include:

- (a) the lighting standards to be complied with;
- (b) the projected light spill and/or glare calculations; ~~and~~
- (c) the proposed locations and design for lighting structures, including any measures to reduce potential adverse visual amenity effects including minimising where practicable, the number of lighting poles and the height of lighting towers; ~~and~~

(d) Confirmation that a Civil Aviation Authority NZ Part 77 Determination has been obtained if required; and

(e) identification of potential areas where headlight sweep onto the windows of a residential dwelling's bedroom is likely to occur because of night-time traffic movements within the site and when exiting the site. If so, provide details for measures to mitigate its effects.

Operational Traffic Management Plan

65-78. The Requiring Authority shall prepare and implement an Operational Traffic Management Plan.

66-79. The objective of the Operational Traffic Management Plan is to manage the traffic generated by the operational activities of the Freight Hub over time and outline the methods that will be undertaken to manage any identified adverse transport effects ~~from operational activities of the Freight Hub.~~

80. At least 20 working days prior to the Operational Traffic Management Plan being submitted to Palmerston North City Council for certification under condition 5, the Requiring Authority shall provide a draft of the Operational Traffic Management Plan to Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council and Manawatu District Council for feedback.

67-81. The Operational Traffic Management Plan shall include:

(a) details about the process for and frequency of operational traffic monitoring including when the monitoring commences, the location of monitoring points and the period of traffic count collection;

(a)(b) a description of the ~~expected~~ actual and forecasted traffic generation ~~on~~ at each of the Freight Hub's access points, including light and heavy vehicles, ~~for as a result of~~ planned activities within the Freight Hub;

(b)(c) the method for assessing the performance of each of the Freight Hub's access points ~~accesses to the Freight Hub, both in terms of~~ including road safety audits and modelling of intersection performance ~~traffic efficiency~~;

(c)(d) the form and timing of safety and road upgrades relevant to the Freight Hub's access points, including:

(i) ~~to~~ the section of Roberts Line between Railway Road and Richardsons Line, including ~~in respect of~~ established accesses and intersections; ~~and~~

(ii) ~~a description of any~~ other roading connections ~~relevant to the access or operation of the Freight Hub~~ detailed in the Road Network Integration Plan; ~~and~~

(e) details of any feedback provided by Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council, and Manawatu District Council and how it has been incorporated.

6882. The Requiring Authority shall review and update the Operational Traffic Management Plan:

- (a) with each relevant outline plan of works for buildings and development of the Freight Hub ~~where relevant~~ taking into account the outcomes of any monitoring and audits undertaken pursuant to condition 81;
- (b) when vehicle movements associated with the Freight Hub exceed 4200 vehicles per day; and
- (c) when vehicle movements associated with the Freight Hub exceed 8000 vehicles per day.

83. The Requiring Authority shall advise Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council and Manawatu District Council on the outcomes of any review undertaken in accordance with condition 83 and provide any updated draft Operational Traffic Management Plan to those parties for review and feedback.

84. The Requiring Authority is not required to review and update the Operational Traffic Management Plan under 74(b) or 74(c) within 12 months of the previous review and update of the Operational Traffic Management Plan.

Operational Noise and Vibration

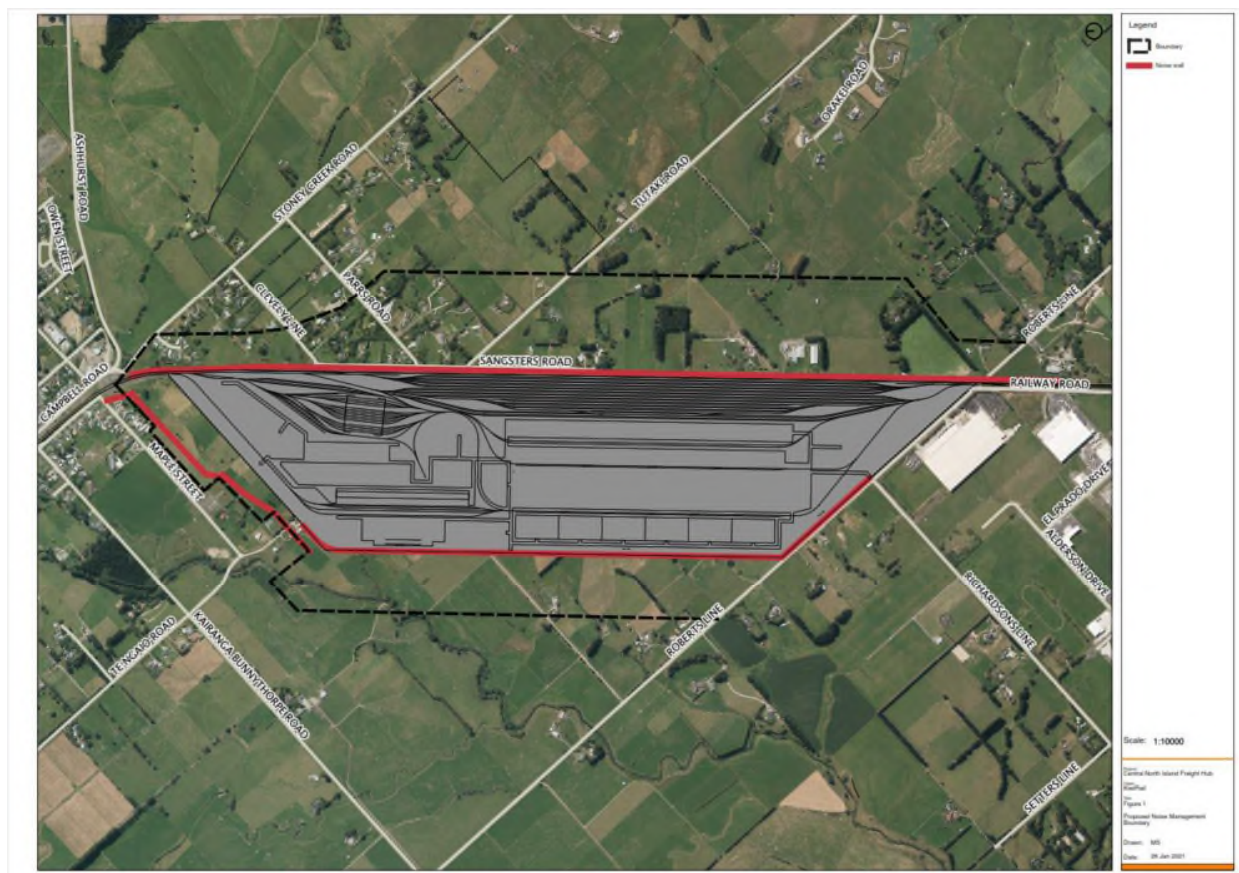
85. All operational activities on the Freight Hub must be undertaken to ensure that noise does not exceed the limits in Table 3 when measured at or beyond the Noise Management Boundary shown in Figure 1 as far as practicable.

- (a) Sound levels must be measured in accordance with NZS 6801:2008 Acoustics – Measurement of environmental sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental noise except that no corrections shall be made for duration (6.4) and corrections for Noise Characteristics shall only be made using objective methods.
- (b) This does not apply to traffic on the perimeter road, or rail traffic on the North Island Mail Trunk Line.

Table 3

<u>All times</u>	<u>55cB L_{Aeq} (1hr)</u>
<u>10pm-7am</u>	<u>85 dBL_{Amax}</u>

Figure 1 Noise Management Boundary



86. All operational activities in the Freight Hub (excluding the NIMT) must be undertaken to ensure that vibration at any dwelling existing as at 23 October 2020 outside the Freight Hub does not exceed 0.3 mm/s vw,95 as far as practicable.

69-87. The Requiring Authority shall prepare and implement an Operational Noise and Vibration Management Plan.

70-88. The objective of the Operational Noise and Vibration Management Plan is to detail ~~mitigation-and-ongoing~~ measures to control noise and vibration effects from the operation of the Freight Hub.

71-89. The Operational Noise and Vibration Management Plan shall be prepared by a suitably qualified and experienced person.

72-90. The Operational Noise and Vibration Management Plan shall outline:

(a) the noise and vibration limits for both day and night time activities within the Freight Hub must operate as set out in Table 3 and Condition 85;

(b) an operational noise contour map;

~~(b)(c)~~ the details ~~and location~~ of any noise mitigation ~~structures~~ required to manage the noise effects including:

- (i) a continuous barrier, including bunds and/or natural elevation on the eastern boundary of the designation extent to 5 metres above the finished ground level of the Freight Hub; ~~and~~
- (ii) a barrier 3 metres above finished ground level of the Freight Hub on the northern boundary of the designation extent;

(ii) a barrier 3 metres above finished ground level on the western boundary of the Freight Hub if dwellings are still within 500m of the Freight Hub when operation commences; and

~~(iii)~~(iii) an asphaltic mix road surface on the Perimeter Road.

~~(e)~~(d) the outcome of investigations undertaken for dwellings existing as at ~~1~~23 October 2020 that are predicted to be subject to exceedance of Category A noise criteria contained at Table 5 of Technical Report D – Acoustic Assessment;

~~(d)~~(e) the acoustic treatment that is necessary to achieve acceptable internal noise levels of 35 dB LAeq(1h) in bedrooms and 40 dB LAeq(1h) in other habitable spaces of dwellings as at [23 October 2020];

~~(e)~~(f) the process for undertaking modelling and monitoring of operational noise and vibration;

~~(f)~~(g) the location of permanent noise monitors which shall include one in the northern area and one in the eastern area of the Freight Hub; and

~~(g)~~(h) site noise management measures including operation of machinery and equipment in a manner to avoid unreasonable noise.

73.91. The Requiring Authority shall make the current version of the Operational Noise and Vibration Management Plan publicly available.

74.92. The Requiring Authority shall review and update (including with any additional noise modelling as required) the Operational Noise and Vibration Management Plan:

- (a) annually; and
- (b) prior to any significant changes in activity at the Freight Hub that might reasonably be expected to alter or otherwise affect the noise and vibration levels generated from the Freight Hub.

Operational Dust Management

75.93. The Requiring Authority shall prepare and implement an Operational Dust Management Plan.

76.94. The objective of the Operational Dust Management Plan is to detail the mitigation and ongoing measures to control dust effects from the operation of the Freight Hub.

77.95. The Operational Dust Management Plan shall be prepared by a suitably qualified and experienced person.

78.96. The Operational Dust Management Plan shall outline:

- (a) The details and location of dust generating activities on the site;
- (b) A description of any sensitive receptor locations;
- (c) A qualitative assessment of the risk of impacts of dust generation from dust generating activities, including the typical frequency and duration of exposure to dust for each activity;
- (d) A description of the intensity and character (including offensiveness) of each type of dust discharge;
- (e) The mitigation and management practices to minimise dust emissions;
- (f) The process for monitoring dust generation and dust generating activities;
- (g) The roles and responsibilities of staff in relation to the Operational Dust Management Plan; and
- (h) The training required for staff to implement the Operational Dust Management Plan.

79.97. The Requiring Authority shall make the Operational Dust Management Plan publicly available.

80.98. The Requiring Authority shall review and update the Operational Dust Management Plan:

- (a) annually; and
- (b) prior to any significant changes in activity at the Freight Hub that might reasonably be expected to alter or otherwise affect the dust generated from the Freight Hub.

99. At least three months prior to operation of the marshalling yards commencing, the Requiring Authority shall:

- (a) identify dwellings within 100m of the Freight Hub's marshalling yards and existing as at 23 October 2020 that have roof top rain water supply systems;
- (b) undertake investigations of the household water supply at each of the affected dwellings identified in condition 98(a) and identify any mitigation measures required to manage potential dust effects, including:
 - (i) the installation of a first-flush rainwater diversion systems at residences that rely on rainwater collection; or
 - (ii) the supply by bulk tanker of potable water to residents' tank storage systems; or
 - (iii) connection to a domestic water supply reticulation system.

Third Party restrictions

100. The Requiring Authority shall enable access for maintenance utility works undertaken in road corridorss in accordance with the National Code of Practice for Utility Operators Access to Transport Corridors (September 2016) or any approved update to the Code.

Post-completion

Post-completion review of designation extent and conditions

~~81.~~101. As soon as practicable following completion of construction of the Freight Hub, the Requiring Authority shall:

- (a) review the designation extent;
- (b) identify areas of designated land that the Requiring Authority considers are no longer necessary for the ongoing operation, maintenance or for ongoing measures to mitigate adverse effects of the Freight Hub; and
- (c) notify the Council under section 182 of the RMA to remove those parts of the designation.

~~82.~~102. Once construction of the Freight Hub is complete, the following construction conditions will no longer apply and can be removed as part of any subsequent District Plan review:

- (a) conditions ~~19-23~~ – ~~251~~; and
- (b) conditions ~~571-6173~~.

Advice note: This condition does not prevent works required for the ongoing operation or maintenance of the Freight Hub from being undertaken

Appendix 1

General Conditions

1. Except as modified by the conditions below and subject to final design and accompanying outline plan(s), the works authorised by this Designation shall be undertaken generally in accordance with the following information provided by the Requiring Authority in the Notice of Requirement for the Freight Hub dated 23 October 2020 and the further information provided by the Requiring Authority dated 15 February 2021, 24 May 2021 and 28 May 2021, and the following:
 - (a) Concept Plan (Figure 124) dated 12 February 2021, prepared by Stantec.
 - (b) Draft indicative Landscape plan dated 6 July 2021 prepared by Isthmus Group (rev B).
2. Where there is any inconsistency between the Notice of Requirement documentation listed above and the designation conditions, the designation conditions shall prevail.
3. Any reference in these conditions to a Standard includes any future amendments or replacements of that standard.

Lapse Period

4. The designation shall lapse if not given effect to within 15 years from the date on which it is included in the District Plan.

Management Plans

5. At least 20 working days prior to construction commencing or unless otherwise specified in the conditions below, the management plan(s) specified below shall be submitted to Palmerston North City Council for certification that the management plan(s) meets the objective specified.
6. All works shall be carried out in accordance with the applicable management plan(s) and other plans required by these conditions.

Outline Plan(s)

7. An outline plan or plans shall be prepared and submitted to the Council in accordance with section 176A of the RMA.
8. The outline plan(s) may be submitted for the entire Freight Hub or for one or more stages, aspects, sections, or locations of works.
9. The outline plan(s) shall include any relevant plan for the particular design or construction or operational matters being addressed in the outline plan and any updates of any plans. The following must be included in an outline plan or plans (as relevant to the particular design or construction matters being addressed):
 - (a) Construction Management Plan

- (b) Construction Traffic Management Plan
 - (c) Construction Noise and Vibration Management Plan
 - (d) Landscape and Design Plan
 - (e) Construction Engagement Plan
 - (f) Stormwater Management Plan
 - (g) Stormwater Monitoring and Maintenance Plan
 - (h) Road Network Integration Plan
 - (i) Operational Noise and Vibration Management Plan
 - (j) Operational Traffic Management Plan
 - (k) Operational Lighting Design Plan
 - (l) Operational Dust Management Plan
10. The documents and plans referred to in condition 9 above may be amended to provide updated information or reflect changes in design, construction methods or the management of effects without the need for a further outline plan where:
- (a) amendment proposed is provided in writing to the Palmerston North City Council; and
 - (b) amendment is in general accordance with the original document or plan, or the amendment is to give effect to an amendment required under another statutory approval.

Communication and Engagement

Community Liaison Forum

- 11. At least 12 months prior to construction the Requiring Authority shall establish a Community Liaison Forum.
- 12. The Requiring Authority shall maintain the Community Liaison Forum until at least 6 months after practical completion of construction of all main components of the Freight Hub.
- 13. The purpose of the Community Liaison Forum is to provide an interactive forum through which the Requiring Authority can provide information to and receive feedback from the community on any matters relating to the construction and operation of the Freight Hub, including updates on material changes in design or activity.
- 14. The Community Liaison Forum shall be open to mana whenua and all interested residents and organisations within the vicinity of the Site.
- 15. The Requiring Authority shall develop and implement:

- (a) a process for identifying particular parties that may be interested in the Community Liaison Forum, including:
 - (i) Bunnythorpe School and any childcare facilities;
 - (ii) Community groups (including Bunnythorpe Community Centre, faith-based groups and residents organisations);
 - (iii) Businesses (including in Bunnythorpe village and NEIZ);
 - (iv) cycling and walking groups (including Te Araroa Manawatū Trust); and
 - (b) the methods of communication with those who want to be informed and/or participate in the Community Liaison Forum.
16. The Requiring Authority shall determine the frequency of updates to the community through the forum, which shall be at least every six months during construction and 12 months during operation.
17. The Requiring Authority shall ensure that the forum provides opportunities for the community to provide feedback, including feedback on draft plans and updates of any plans prepared in accordance with the conditions of this Notice of Requirement with the Requiring Authority recording any feedback provided and how it has been considered.

Community Liaison Person

18. Within 12 months of the [date the NoR is confirmed] the Requiring Authority shall appoint a Community Liaison Person.
19. The Community Liaison Person role shall be in place until at least 6 months after practical completion of all main components of the Freight Hub.
20. The role of the Community Liaison Person is to provide a point of contact for the community on behalf of the Requiring Authority for all enquiries relating to the Freight Hub, including land acquisition, construction or operational matters.
21. The Community Liaison Person will be responsible for administering the Community Liaison Forum, once established in accordance with condition 11.
22. The Requiring Authority shall make the contact details of the Community Liaison Person available to the community.

Construction Engagement Plan

23. The Requiring Authority shall prepare a Construction Engagement Plan and implement the plan for the duration of construction.
24. The objective of the Construction Engagement Plan shall be to outline a process to ensure that the community is provided with construction information during construction of the Freight Hub.
25. The Construction Engagement Plan shall include:

- (a) Contact details of the Community Liaison Person appointed pursuant to condition 18.
- (b) A process for identifying the parties that will be communicated with, and the methods of communication.
- (c) Information on and the methods for communicating the following:
 - (i) likely construction works and programme;
 - (ii) hours of construction where these are outside of normal working hours or on weekends or public holidays, including night-time heavy vehicle movements;
 - (iii) routes for construction vehicles, including vehicle movements and types (ie light or heavy vehicles);
 - (iv) any temporary traffic management measures, including changes to pedestrian and cycling routes, public transport and school bus routes and the reinstatement of those routes;
 - (v) progress of any construction works against key project milestones and completion dates; and
 - (vi) the Construction Traffic Management Plan developed pursuant to condition 57.

Complaints Register

- 26. Within 12 months of [**date the NoR is confirmed**] the Requiring Authority shall establish a register of any complaints received and action undertaken by the Requiring Authority in response to the complaint, and maintain the register until completion of construction of the Freight Hub .
- 27. The complaints register must include:
 - (a) the name and contact details of the complainant;
 - (b) the nature and details of the complaint; and
 - (c) measures taken by the Requiring Authority to respond to the complaint or where any measures have not been taken, the reasons why.
- 28. The complaints register shall be made available to Palmerston North City Council upon request.
- 29. The Requiring Authority shall provide regular updates to the community through the Community Liaison Forum on complaints received and any measures to address any complaints identified.

Mana Whenua

Mana Whenua Values

- 30. The Requiring Authority shall prepare a Mana Whenua Engagement Framework.

31. The objective of the Mana Whenua Engagement Framework is to recognize and provide for mana whenua values in the area affected by the Freight Hub, to develop mechanisms to avoid or mitigate effects on mana whenua values through the implementation of agreed monitoring and mitigation measures and provide opportunities for expression of those values through design.
32. The Requiring Authority shall engage with mana whenua to develop the contents of the Mana Whenua Engagement Framework, which may include:
- (a) roles and responsibilities of mana whenua, including in relation to design and development of the Freight Hub;
 - (b) involvement in preparation of management plans;
 - (c) monitoring activities to be undertaken;
 - (d) involvement in developing and partaking in accidental discovery protocols;
 - (e) site dedication protocols; and
 - (f) opportunities for the expression of mana whenua values in the design and development of the Freight Hub.

Contamination

33. The Requiring Authority shall undertake a detailed site investigation in accordance with the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ("**NES-CS**") and obtain any resource consents required under the NES-CS.
34. The Requiring Authority shall ensure that any contaminated soil identified from the detailed site investigation is managed in accordance with the requirements of the NES-CS, and where appropriate prepare a Contaminated Site Management Plan.

Archaeology

35. The Requiring Authority shall ensure that where any land disturbing works occur in an area of the Designation which is not subject to an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014, an accidental discovery protocol is in place.
36. The accidental discovery protocol shall be prepared in collaboration with mana whenua and in consultation with Heritage New Zealand Pouhere Taonga, and shall include:
- (a) details of contractor training regarding the skills necessary to be aware of the possible presence of cultural or archaeological sites or material;
 - (b) general procedures following the accidental discovery of possible archaeological sites, kōiwi tangata, wahi tapu or wahi taonga, including the requirement to immediately cease enabling or construction works in the vicinity of the discovery and the requirement to notify parties including, but not limited to, Heritage New Zealand Pouhere Taonga;

- (c) in the event that kōiwi tangata or taonga are discovered, work must cease immediately in the vicinity of the remains and mana whenua, Heritage New Zealand Pouhere Taonga, New Zealand Police and Palmerston North City Council must be contacted;
- (d) procedures for the custody of taonga (excluding kōiwi tangata) or material found at an archaeological site; and
- (e) activities that must be undertaken before construction activities in the vicinity of a discovery may recommence, including appropriate tikanga, recording, recovery of artifacts, and engagement.

Stormwater

Stormwater Management Report

- 37. The Requiring Authority shall prepare and submit a Stormwater Management Report with the first outline plan to Palmerston North City Council containing details of the stormwater detention ponds.
- 38. The Stormwater Management Report shall be prepared by a suitably qualified and experienced person.
- 39. The purpose of the Stormwater Management Report is to confirm the design of the stormwater detention ponds is sufficient to mitigate the potential downstream flooding effects as a result of any increased stormwater runoff from the Freight Hub and/or the loss of flood plain storage as a result of the site formation.
- 40. The Stormwater Management Report shall:
 - (a) outline the results of hydraulic modelling of the Mangaone Stream Catchment as affected by the Freight Hub; and
 - (b) confirm the appropriate size of the stormwater detention ponds.

Stormwater Management and Monitoring Plan

- 41. The Requiring Authority shall prepare and implement a Stormwater Management and Monitoring Plan.
- 42. The objective of the Stormwater Management and Monitoring Plan is to outline the design features for the effective operation of the stormwater system, and the methods for the monitoring and maintenance of the stormwater system.
- 43. The Stormwater Management and Monitoring Plan shall be prepared by a suitably qualified and experienced person.
- 44. The Stormwater Management and Monitoring Plan shall include:
 - (a) design measures to assist with achieving hydraulic neutrality and methods to assist with stormwater treatment and contaminant removal utilising natural

systems including retention areas, permeable surfaces, wetland/swales and appropriate vegetation;

- (b) the methods that will be used for the operation and maintenance of the stormwater management system to ensure its successful long-term performance, including sediment removal, clearance of debris, replacement of vegetation, and training of operators; and
- (c) details of the location and operation of any stormwater outlets from the site, including emergency spillway.

Level Crossing Safety Impact Assessment

45. At least 12 months prior to submission of the first outline plan, the Requiring Authority shall commission Level Crossing Safety Impact Assessment(s) or update any existing assessment in relation to the impact of the Freight Hub on the following crossings:
- (a) the Campbell Road/Kairanga Bunnythorpe Road level crossing;
 - (b) the Waughs Road/Campbell Road level crossing;
 - (c) pedestrian level crossings in the vicinity of Aorangi Marae and Taonui School; and
 - (d) Campbell Road crossing south of Feilding.
46. The Requiring Authority will engage with Palmerston North City Council and Manawatu District Council to determine how to appropriately allocate implementation responsibilities based on the recommendations in each Level Crossing Safety Impact Assessment and agree the allocation of responsibilities if any upgrade is required.

Road Network Integration Plan

47. At least 12 months prior to submission of the first outline plan of works, the Requiring Authority shall prepare a Road Network Integration Plan.
48. The objective of the Road Network Integration Plan is to ensure that the roading network for the Freight Hub is appropriately managed and safely and efficiently integrated with the wider transport network.
49. The Requiring Authority shall consult and share information with Palmerston North City Council, Horizons Regional Council, Manawatu District Council and Waka Kotahi NZ Transport Agency in preparing the Road Network Integration Plan (and any updates).
50. The Road Network Integration Plan shall include:
- (a) the timing for the closure of and/or the legal stopping of any relevant roads (or sections of roads, as the case may be), including Railway Road, Clevely Line, Te Ngaio Road and Roberts Line;
 - (b) the location, timing and design of any access to the Freight Hub;

- (c) the timing and form of any changes and upgrades required to existing property accesses, intersections and roads required for construction and operation of the Freight Hub to be delivered by the Requiring Authority including:
 - i. changes as a result of the closure of Te Ngaio Road and existing Railway Road termination;
 - ii. a perimeter road along the western side of the Freight Hub between Maple Street and Roberts Line that includes a safe separated shared path;
 - iii. a new Intersection between Roberts Line and the perimeter road;
 - iv. extension of Richardsons Line north of the Roberts Line to a Freight Hub access;
 - v. two additional Freight Hub accesses via the perimeter road on the northern and western boundaries; and
 - vi. accesses to 422 and 422A Railway Road (the legal descriptions being SEC 1480 BLK VII KAIRANGA SD and LOT 1 DP 74613).
- (d) the timing for the closure of any level crossings;
- (e) the proposed speed limits for any new roads and changes to speed limits for existing roads;
- (f) the location and timing and form of any changes and upgrades to pedestrian walkways, cycleways and public transport facilities, including new or relocated bus stops;
- (g) the location and timing of confirmed and funded upgrades or additions to the wider transport network and the identification of opportunities for that wider transport network to integrate with any roading upgrades and connections required for construction and operation of the Freight Hub; and
- (h) details of the feedback provided by Palmerston North City Council, Horizons Regional Council, Manawatu District Council and Waka Kotahi NZ Transport Agency and how this has been incorporated into the Road Network Integration Plan, including any feedback regarding the location and timing of a ring road and/or any bypasses of Bunnythorpe, and how these connections integrate with the roading network required for the construction and operation of the Freight Hub; and
- (i) the timing of reviews and frequency of updates to the Road Network Integration Plan, based on the matters outlined.

Roading connections and upgrades

51. Unless alternative access to the Freight Hub is provided that no longer requires the perimeter road (or a relevant part of it) to be constructed, the Requiring Authority shall construct the perimeter road (or relevant part) to connect to the adjacent road network and ensure the road (or relevant part) is fully operational prior to the closure of Railway Road.
52. Unless otherwise provided by other road controlling authorities, the upgrades listed in condition 50(c) shall be delivered by the Requiring Authority according to the timing outlined in the Road Network Integration Plan.

Landscape and Design Plan

53. The Requiring Authority shall prepare and submit a Landscape and Design Plan with the first outline plan to Palmerston North City Council. The Requiring Authority shall implement the Landscape and Design Plan.
54. The objective of the Landscape and Design Plan is to outline the measures to be incorporated into the Freight Hub design, to manage potential adverse effects of the Freight Hub on landscape, visual amenity and natural character.
55. The Landscape and Design Plan shall be prepared by a suitably qualified and experienced person.
56. The Landscape and Design Plan shall include:
 - (a) design principles and design outcomes that have informed the design of the Freight Hub and the extent to which those meet:
 - i. KiwiRail's operational requirements and any other plans required under the conditions of this Designation; and
 - ii. the North East Industrial Design Guide. Where a different approach to the North East Industrial Design Guide is proposed, the Landscape and Design Plan shall outline the reasons for a departure from the approach and outline why the alternative approach is preferred.
 - (b) the location and types of proposed landscape and visual amenity plantings (including plant size, numbers and spacing), including planting of stormwater detention ponds, stream and riparian margins, cut faces, fill batters, and show how these plantings and any other appropriate design measures (including but not limited to the final form, finish and articulation of the proposed buildings and batter heights and slopes):
 - i. integrate the built forms including roof lines and walls of the Freight Hub and the related earthworks into the surrounding environment;
 - ii. mitigate visual amenity effects in relation to residential properties;
 - iii. contribute to the open watercourse and stormwater ponds appearing as natural features and enhancing local biodiversity;

- iv. comply with the Electricity (Hazards from Trees) Regulations 2003, including at full maturity; and
 - v. comply with any regional consents.
- (c) how the proposed planting would enhance natural character, including the Mangaone Stream surrounds and restore indigenous biodiversity;
 - (d) how sites of cultural and historical significance (if identified through any engagement undertaken in accordance with conditions 28 and 33) will be recognised;
 - (e) how any roads and walkways within the designation extent integrate into the character of the surrounding area and connect to paths and cycleways outside the designation and include opportunities for outlook(s) over the Freight Hub;
 - (f) the location of the proposed noise mitigation structures as outlined in the Operational Noise and Vibration Plan, and where required, the final form, finish, and planting of these structures (including vertical noise barriers and bunds) along Sangsters Road and Maple Street, including vertical noise barriers and bunds and associated planting with a minimum depth of 5 m on the external face of the noise mitigation structures;
 - (g) how the lighting effects on the landscape and visual amenity are minimised;
 - (h) the proposed timing for establishing any landscape or visual amenity planting, including to maximise mitigation planting coverage prior to construction of the main buildings and/or operation of the Freight Hub where practicable; and
 - (i) the process and programme for maintaining any landscape or visual amenity planting including plant and animal pest management.

Construction Management Plan

- 57. The Requiring Authority shall prepare a Construction Management Plan and implement the plan for the duration of construction.
- 58. The objective of the Construction Management Plan is to outline measures for managing construction related effects.
- 59. The Construction Management Plan shall include:
 - (a) a construction programme, including any seasonal timings for works;
 - (b) a detailed site layout;
 - (c) the design and management specifications for all earthworks on-site, including disposal sites and their location;

- (d) a construction dust management plan consistent with any required regional council consents;
- (e) measures to ensure that enabling or construction works and structures are designed and undertaken to comply with the New Zealand Code of Practice for Electrical Safe Distances (NZECP 34:2001);
- (f) the design of temporary lighting for enabling and construction works and construction support areas;
- (g) details on the timing of the installation of screening and planting and opportunities where this can be undertaken prior to works commencing;
- (h) the approach to the management of construction waste;
- (i) the accidental discovery protocol adopted by the Requiring Authority;
- (j) a description of training requirements for all site personnel (including employees, subcontractors and visitors) including details of briefings for employees and subcontractors about the accidental discovery protocol adopted by the Requiring Authority;
- (k) environmental incident and emergency management procedures; and
- (l) contact numbers for key construction staff, and staff responsible for any monitoring requirements.

Network utilities

60. Prior to any land disturbing works, the Requiring Authority shall:
- (a) identify the location of existing overhead or underground network utilities (www.beforeudig.co.nz);
 - (b) identify these utilities relevant in any construction plans and place appropriate physical indicators on the ground showing specific surveyed locations; and
 - (c) provide the information of the network utilities identified under Condition 60(a) and (b) to all construction personnel, including contractors.

Construction Traffic Management Plan

61. At least three months prior to construction commencing the Requiring Authority shall prepare a Construction Traffic Management Plan, and implement the plan for the duration of construction.
62. The objective of the Construction Traffic Management Plan is to outline the methods that will be undertaken to minimise adverse effects from construction traffic and construction works on property access, road user safety and efficiency of traffic movements.
63. The Construction Traffic Management Plan shall be prepared by a suitably qualified and

experienced person.

64. At least 20 working days prior to the Construction Traffic Management Plan being submitted to Palmerston North City Council for certification under condition 5, the Requiring Authority shall provide a draft of the Construction Traffic Management Plan to Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council, Manawatu District Council for feedback.
65. The Construction Traffic Management Plan shall:
- (a) identify the numbers, frequencies, and timing of traffic movements for each phase of the construction programme as developed under the Construction Management Plan, including any limitations on heavy vehicle movements through key areas (including local roads) during night and peak times, as required either in relation to traffic conditions or where required to mitigate potential noise and vibration effects;
 - (b) identify safe site access routes, site access arrangements, and access points for heavy vehicles involved in constructing the Freight Hub in a manner consistent with Waka Kotahi NZ Transport Agency's Code of Practice for Temporary Traffic Management;
 - (c) identify any upgrades that are needed to ensure safe site access routes and access points, including possible night-time movement of construction vehicles;
 - (d) outline methods to manage local and network wide effects of the construction, including temporary traffic management measures, such as traffic detours (including for public transport, walking and cycling, school bus routes, and infrastructure) and temporary speed limits;
 - (e) provide details for measures to maintain safe pedestrian and cyclist access movements in the vicinity of the site, including measures to ensure that any shared paths being delivered by PNCC and Te Araroa Trail between Palmerston North and Feilding are available at all times (including any diversions) during construction of the Freight Hub;
 - (f) include the construction vehicle noise limits and any requirements for effective noise suppression;
 - (g) identify the properties affected and detail measures to provide vehicle access to private and adjacent properties on Roberts Line including ensuring that access to the northern end of Richardsons Line at Roberts Line is able to be provided for heavy vehicles at all times;
 - (h) identify opportunities to use the rail network to minimise effects on the roading network where practicable;
 - (i) provide details for any new permanent accesses to be formed at the earliest practical opportunity to limit the adverse effects of construction and severance, including access to 422 and 422A Railway Road (SEC 1480 BLK

VII KAIRANGA SD and LOT 1 DP 74613);

- (j) provide measures for the management of fine material loads (e.g. covers) and the timely removal of any material deposited or spilled on public roads;
 - (j) detail the process for and locations of construction traffic monitoring and the frequency and times of monitoring relevant to the stage of construction set out in the programme in the Construction Management Plan;
 - (k) provide a process for preparing a traffic management communications plan;
 - (l) identify any construction activity including roading works occurring along access routes identified in condition 65(b) and consider the cumulative effects of those activities if any;
 - (m) provide details of any feedback provided by Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council and Manawatu District Council and how it was incorporated;
 - (n) the details of a construction lighting management plan, to demonstrate how compliance with AS/NZS 4282:2019 Zone A2 Limits are achieved between 11:00pm and dawn, and any measures to address potential headlight sweep.
66. The Construction Traffic Management Plan shall be reviewed and updated as required by the key stages identified in the construction programme in condition 57.
67. The Requiring Authority shall provide any updated draft Construction Traffic Management Plan to Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council and Manawatu District Council for review and feedback.

Construction Noise and Vibration Management Plan

68. The Requiring Authority shall prepare a Construction Noise and Vibration Management Plan and implement the plan for the duration of construction.
69. The objective of the Construction Noise and Vibration Management Plan is to demonstrate how compliance with Conditions 71 and 72 will be achieved for the duration of construction of the Freight Hub.
70. The Construction Noise and Vibration Management Plan shall be prepared by a suitably qualified and experienced person.
71. All construction works must be undertaken to ensure that, as far as practicable, construction noise does not exceed the limits in Table 1. Construction Noise levels. Levels must be measured and assessed in accordance with NZS 6803:1999 Acoustics – Construction noise as follows (at occupied dwellings).

Table 1 - Construction Noise levels

Time of Week	Time Period	L _{Aeq}	L _{Afmax}
Weekdays	0630 – 0730	55 dB	75 dB
	0730 – 1800	70 dB	85 dB
	1800 – 2000	65 dB	80 dB
	2000 – 0630	45 dB	75 dB
Saturdays	0630 – 0730	45 dB	75 dB
	0730 – 1800	70 dB	85 dB
	1800 – 2000	45 dB	75 dB
	2000 – 0630	45 dB	75 dB
Sundays and Public Holidays	0630 – 0730	45 dB	75 dB
	0730 – 1800	55 dB	85 dB
	1800 – 2000	45 dB	75 dB
	2000 – 0630	45 dB	75 dB

N.B. Shading indicates *night-time* hours.

72. Construction vibration must, as far as practicable, comply with the criteria in Table 2 Vibration Criteria, where:

- (a) Measurement is in accordance with ISO 4866:2010 Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures;
- (b) BS 5228-2 is British Standard BS 5228-2:2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.

Table 2: Vibration Criteria

<i>Receiver</i>	<i>Location</i>	<i>Details</i>	<i>Category A PPV</i>	<i>Category B PPV</i>
<i>Occupied dwellings and schools</i>	<i>Inside the building</i>	<i>2000 – 0630</i>	<i>0.3 mm/s</i>	<i>1 mm/s</i>
		<i>0630 – 2000</i>	<i>1 mm/s</i>	<i>5 mm/s</i>
<i>Other occupied buildings</i>	<i>Inside the building</i>	<i>0630 – 2000</i>	<i>2 mm/s</i>	<i>5 mm/s</i>
<i>Unoccupied buildings</i>	<i>Building foundation</i>	<i>Vibration transient</i>	<i>5 mm/s</i>	<i>BS 5228-2 ² Table B.2</i>
		<i>Vibration continuous</i>		<i>50% of BS 5228-2 Table B.2³</i>

73. The Construction Noise and Vibration Management Plan shall include:
- (a) the noise and vibration limits as set out in the conditions 71 and 72;
 - (b) a description of the construction works and processes;
 - (c) a description of anticipated equipment and any noise or vibration suppression devices;
 - (d) the hours of operation, including times and days when activities causing noise and/or vibration would occur;
 - (e) identification of affected dwellings and other noise sensitive activities and projected noise and vibration levels for those activities;
 - (f) a description of alternative management strategies where compliance with the criteria in Conditions 71 or 72 may not be achieved;
 - (g) methods and frequency for monitoring and reporting on construction noise and vibration;
 - (h) details of the procedures for notifying stakeholders of construction activities and handling noise and vibration complaints as set out in the Construction Engagement Plan and Complaints Register in conditions 23-29;
 - (i) construction equipment operator training procedures and expected construction site behaviours; and
 - (j) contact numbers for key construction staff, staff responsible for noise assessment and the council compliance officer.

Water supply

74. All new buildings within the Freight Hub shall be serviced with adequate water supply and access to that supply for firefighting purposes in accordance with the New Zealand Fire Service

Firefighting Code of Practice SNZ PAS 4509:2008.

Operational Lighting Design Plan

75. The Requiring Authority shall prepare and implement an Operational Lighting Design Plan.
76. The objective of the Operational Lighting Design Plan is to demonstrate how the lighting for the outdoor operational areas, internal access roads, and carparks of the Freight Hub will be designed to manage glare and light spill from the operation of the Freight Hub, and demonstrate compliance with:
 - (a) AS/NZS 4284:2019 – Control of the obtrusive effects of outdoor lighting, Zone A2 limits;
 - (b) Sky glow caused by artificial lighting shall have a Sky Glow Upward Light Ratio of no greater than 0.01, calculated in accordance with AS/NZS4282:2019; and
 - (c) Glare to the Palmerston North Airport Control Tower resulting from light emitted (including artificial light and glare from buildings and structures) from the Freight Hub must meet the AS/NZS4282:2019 limits for Zone A2.
77. The Operational Lighting Design Plan shall include:
 - (a) the lighting standards to be complied with;
 - (b) the projected light spill and glare calculations;
 - (c) the proposed locations and design for lighting structures, including any measures to reduce potential adverse visual amenity effects including minimising where practicable, the number of lighting poles and the height of lighting towers;
 - (d) confirmation that a Civil Aviation Authority NZ Part 77 Determination has been obtained if required; and
 - (e) identification of potential areas where headlight sweep onto the windows of a residential dwelling's bedroom is likely to occur because of night-time traffic movements within the site and when exiting the site. If so, provide details for measures to mitigate its effects. Operational Traffic Management Plan
78. The Requiring Authority shall prepare and implement an Operational Traffic Management Plan.
79. The objective of the Operational Traffic Management Plan is to manage the traffic generated by the operational activities of the Freight Hub over time and outline the methods that will be undertaken to manage any identified adverse transport effects.
80. At least 20 working days prior to the Operational Traffic Management Plan being submitted to Palmerston North City Council for certification under condition 5, the Requiring Authority shall provide a draft of the Operational Traffic Management Plan to Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council and Manawatu District Council for feedback.

81. The Operational Traffic Management Plan shall include:
- (a) details about the process for and frequency of operational traffic monitoring including when the monitoring commences, the location of monitoring points and the period of traffic count collection;
 - (b) a description of the actual and forecasted traffic generation at each of the Freight Hub's access points, including light and heavy vehicles, as a result of planned activities within the Freight Hub;
 - (c) the method for assessing the performance of each of the Freight Hub's access points, including road safety audits and modelling of intersection performances;
 - (d) the form and timing of safety and road upgrades relevant to the Freight Hub's access points, including:
 - (i) the section of Roberts Line between Railway Road and Richardsons Line, including established accesses and intersections;
 - (ii) other roading connections detailed in the Road Network Integration Plan; and
 - (e) details of any feedback provided by Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council, and Manawatu District Council and how it has been incorporated.
82. The Requiring Authority shall review and update the Operational Traffic Management Plan:
- (a) with each relevant outline plan of works for buildings and development of the Freight Hub taking into account the outcomes of any monitoring and audits undertaken pursuant to condition 81;
 - (b) when vehicle movements associated with the Freight Hub exceed 4200 vehicles per day; and
 - (c) when vehicle movements associated with the Freight Hub exceed 8000 vehicles per day.
83. The Requiring Authority shall advise Waka Kotahi NZ Transport Agency, Horizons Regional Council, Palmerston North City Council and Manawatu District Council on the outcomes of any review undertaken in accordance with condition 83 and provide any updated draft Operational Traffic Management Plan to those parties for review and feedback.
84. The Requiring Authority is not required to review and update the Operational Traffic Management Plan under 74(b) or 74(c) within 12 months of the previous review and update of the Operational Traffic Management Plan.

Operational Noise and Vibration

85. All operational activities on the Freight Hub must be undertaken to ensure that noise does not exceed the limits in Table 3 when measured at or beyond the Noise Management Boundary

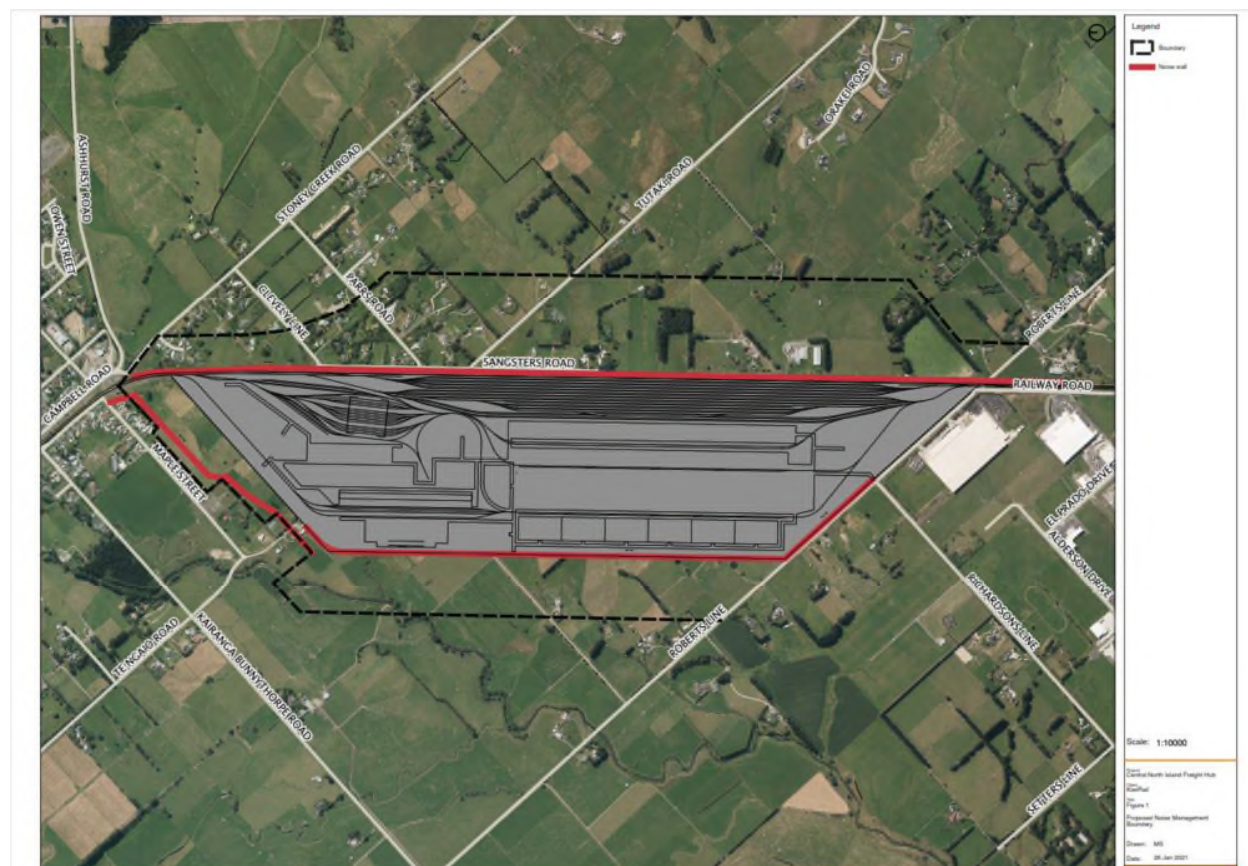
shown in Figure 1 as far as practicable.

- (a) Sound levels must be measured in accordance with NZS 6801:2008 Acoustics – Measurement of environmental sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental noise except that no corrections shall be made for duration (6.4) and corrections for Noise Characteristics shall only be made using objective methods.
- (b) This does not apply to traffic on the perimeter road, or rail traffic on the North Island Mail Trunk Line.

Table 3

All times	55cB L _{Aeq} (1hr)
10pm-7am	85 dBL _{Amax}

Figure 1 Noise Management Boundary



86. All operational activities in the Freight Hub (excluding the NIMT) must be undertaken to ensure

that vibration at any dwelling existing as at 23 October 2020 outside the Freight Hub does not exceed 0.3 mm/s vw,95 as far as practicable.

87. The Requiring Authority shall prepare and implement an Operational Noise and Vibration Management Plan.
88. The objective of the Operational Noise and Vibration Management Plan is to detail measures to control noise and vibration effects from the operation of the Freight Hub.
89. The Operational Noise and Vibration Management Plan shall be prepared by a suitably qualified and experienced person.
90. The Operational Noise and Vibration Management Plan shall outline:
 - (a) the noise and vibration limits for both day and night time activities within the Freight Hub must operate as set out in Table 3 and Condition 85;
 - (b) an operational noise contour map;
 - (c) the details of any noise mitigation required to manage the noise effects including:
 - (i) a continuous barrier, including bunds and/or natural elevation on the eastern boundary of the designation extent to 5 metres above the finished ground level of the Freight Hub;
 - (ii) a barrier 3 metres above finished ground level of the Freight Hub on the northern boundary of the designation extent;
 - (ii) a barrier 3 metres above finished ground level on the western boundary of the Freight Hub if dwellings are still within 500m of the Freight Hub when operation commences; and
 - (iii) an asphaltic mix road surface on the Perimeter Road.
 - (d) the outcome of investigations undertaken for dwellings existing as at 23 October 2020 that are predicted to be subject to exceedance of Category A noise criteria contained at Table 5 of Technical Report D – Acoustic Assessment;
 - (e) the acoustic treatment that is necessary to achieve acceptable internal noise levels of 35 dB LAeq(1h) in bedrooms and 40 dB LAeq(1h) in other habitable spaces of dwellings as at [23 October 2020];
 - (f) the process for undertaking modelling and monitoring of operational noise and vibration;
 - (g) the location of permanent noise monitors which shall include one in the northern area and one in the eastern area of the Freight Hub; and
 - (h) site noise management measures including operation of machinery and equipment in a manner to avoid unreasonable noise.

91. The Requiring Authority shall make the current version of the Operational Noise and Vibration Management Plan publicly available.
92. The Requiring Authority shall review and update (including with any additional noise modelling as required) the Operational Noise and Vibration Management Plan:
 - (a) annually; and
 - (b) prior to any significant changes in activity at the Freight Hub that might reasonably be expected to alter or otherwise affect the noise and vibration levels generated from the Freight Hub.

Operational Dust Management

93. The Requiring Authority shall prepare and implement an Operational Dust Management Plan.
94. The objective of the Operational Dust Management Plan is to detail the mitigation and ongoing measures to control dust effects from the operation of the Freight Hub.
95. The Operational Dust Management Plan shall be prepared by a suitably qualified and experienced person.
96. The Operational Dust Management Plan shall outline:
 - (a) The details and location of dust generating activities on the site;
 - (b) A description of any sensitive receptor locations;
 - (c) A qualitative assessment of the risk of impacts of dust generation from dust generating activities, including the typical frequency and duration of exposure to dust for each activity;
 - (d) A description of the intensity and character (including offensiveness) of each type of dust discharge;
 - (e) The mitigation and management practices to minimise dust emissions;
 - (f) The process for monitoring dust generation and dust generating activities;
 - (g) The roles and responsibilities of staff in relation to the Operational Dust Management Plan; and
 - (h) The training required for staff to implement the Operational Dust Management Plan.
97. The Requiring Authority shall make the Operational Dust Management Plan publicly available.
98. The Requiring Authority shall review and update the Operational Dust Management Plan:
 - (a) annually; and
 - (b) prior to any significant changes in activity at the Freight Hub that might reasonably be expected to alter or otherwise affect the dust generated from the Freight Hub.

99. At least three months prior to operation of the marshalling yards commencing, the Requiring Authority shall:
- (a) identify dwellings within 100m of the Freight Hub's marshalling yards and existing as at 23 October 2020 that have roof top rain water supply systems;
 - (b) undertake investigations of the household water supply at each of the affected dwellings identified in condition 98(a) and identify any mitigation measures required to manage potential dust effects, including:
 - (i) the installation of a first-flush rainwater diversion systems at residences that rely on rainwater collection; or
 - (ii) the supply by bulk tanker of potable water to residents' tank storage systems; or
 - (iii) connection to a domestic water supply reticulation system.

Third Party restrictions

100. The Requiring Authority shall enable access for maintenance utility works undertaken in road corridors in accordance with the National Code of Practice for Utility Operators Access to Transport Corridors (September 2016) or any approved update to the Code. Post-completion

Post-completion review of designation extent and conditions

101. As soon as practicable following completion of construction of the Freight Hub, the Requiring Authority shall:
- (a) review the designation extent;
 - (b) identify areas of designated land that the Requiring Authority considers are no longer necessary for the ongoing operation, maintenance or for ongoing measures to mitigate adverse effects of the Freight Hub; and
 - (c) notify the Council under section 182 of the RMA to remove those parts of the designation.
102. Once construction of the Freight Hub is complete, the following construction conditions will no longer apply and can be removed as part of any subsequent District Plan review:
- (a) conditions 23 – 25; and
 - (b) conditions 57-73.

Advice note: This condition does not prevent works required for the ongoing operation or maintenance of the Freight Hub from being undertaken

APPENDIX 2

RELEVANT PLANNING FRAMEWORK

Relevant planning documents	Conclusions
National Policy Statement on Electricity Transmission 2008 (" NPSET ")	The NPSET is relevant as there is a transmission line running across the northern end of the Site. The location of the Transmission Line and the presence of a pylon inside the Designation Extent and the nature of work proposed in the vicinity means that there is unlikely to be any effect from the Freight Hub on Electricity Transmission. A condition is proposed to ensure that the selection of plants and their location at full maturity complies with the Electricity (Hazards from Trees) Regulations 2003. Further detail on the NPSET is outlined in the response to question 177 of the First Section 92 Response.
National Policy Statement for Freshwater Management 2020 (" NPS-FM ")	<p>Mr Garrett - Walker has confirmed that there are two unnamed stream systems that flow through the Site typically flowing in an east-west direction before draining into the Mangaone Stream and several bores within the Designation Extent and close by. PNCC has a consent to take water for the municipal supply from a bore at the Roberts Line / Railway Road intersection. There are no natural wetlands present.</p> <p>The assessment of the health and well-being of the streams is that the effect of the stream bed loss because of culverting /piping the streams will, due to the magnitude of the stream system be low. There will be a potential impact of culverting on fish passage, but it is possible to avoid effects through design to ensure that access to upstream habitats is provided. Resource consent will be required under the NES Freshwater and provisions of the Horizons One Plan for the works in the streams and for any potential contamination of ground water because of construction.</p> <p>As noted in the response to question 177 of the First Section 92 Response the quality of stormwater to be discharged from the site to will be subject to resource consent that will ensure that there is appropriate treatment before the stormwater is discharged back into the downstream sections of the culverted streams. This is assessed in section 9.7.2.5 of the AEE and it is considered that with treatment the discharge will not therefore compromise the health and well-being of these water bodies or freshwater ecosystems.</p>
New Zealand Coastal Policy Statement 2010 (" NZCPS ")	The Freight Hub is remote from the coastal environment but there is potential for sediment from the earthworks and other contaminants to be mobilised and to travel via the Mangaone Stream and the Manawatū River to the coast. The adoption of best

Relevant planning documents	Conclusions
	<p>practice measures during earthworks and in relation to stormwater management will avoid any impact on the coastal marine area.</p> <p>The regional consent process will ensure any erosion and sediment control measures for earthworks and treatment of stormwater are consistent with the NZCPS. I note that Council officers agree that the NZCPS not applicable.</p>
National Policy Statement on Urban Development 2020 (" NPS- UD ")	<p>The Freight Hub falls under the definition of Nationally Significant Infrastructure in the NPS UD. As outlined in the response to question 177 of the First Section 92 Response Palmerston North is listed as a Tier 2 urban environment and is subject to the requirements specified in the NPS- UD. In relation to Objective 6 of the NPS-UD the Freight Hub is a long-term strategic project in that it has been recognised as necessary infrastructure to support the movement of freight within the region and beyond (refer to section 2 of the AEE).</p> <p>Integration with the wider transport network has also been considered in the concept design of the Freight Hub. KiwiRail is committed to working with Waka Kotahi and Palmerston North City Council to enable the Freight Hub to be integrated with other infrastructure planning and funding decisions. The proposed designation conditions include a Roading Network Integration Plan which provides a mechanism for ongoing engagement between the parties to ensure that Freight Hub is integrated with the wider transport network.</p> <p>In relation to Objective 8 the Freight Hub will increase capacity of freight movement by rail across the country. This directly supports a transition to moving a greater proportion of freight by rail (and thereby lowering the emissions contributed by freight movement). This supports the reduction of greenhouse gas emissions not just for Palmerston North, but throughout the country.</p> <p>Being a lower emissions alternative to movement of freight by road, investment in rail infrastructure is more resilient to the effects of climate change and any corresponding costs that climate change adds to freight movements.</p>
Horizons Regional Policy Statement (" RPS ")	<p>While recognising that there is stream loss through culverting, the streams are highly degraded in their current state, and in some sections are too shallow and temperatures too high in summer periods to enable fish passage and lack riparian planting for shade. Culverting of these streams is expected to provide opportunities fish passage and through the management of stormwater discharged from the Site; along with the riparian and wetland planting proposed as part of the development of stormwater detention ponds and wetlands. This will enhance the quality of the water discharged into</p>

Relevant planning documents	Conclusions
	<p>the Mangaone Stream and therefore the mauri of the Mangaone Stream downstream. This gives effect in part to Objective 2-1: Resource management.</p> <p>The establishment and operation of the Freight Hub and its benefits to the wider regional economy and to the lower part of the North Island gives effect to Objective 3-1 Infrastructure and other Physical resources of regional or national importance.</p> <p>Locating the Freight Hub partly on land that is in the NEIZ give effect to Objective 3-3 The strategic integration of infrastructure with land use.</p> <p>Objective 3-4 Urban Growth and rural residential subdivision on versatile soils approximately one third of the land in the Designation Extent is already zoned for urban growth and that other areas of the land have already been subdivided into lifestyle blocks. The Freight Hub will use some Class II but this is not inconsistent with the NEIZ growth or subdivision that has occurred in the area.</p> <p>The large scale of the earthworks involved will require resource consent to ensure that the works are be managed to be consistent with Objective 4-2 Regulating potential causes of accelerated erosion. An Erosion and Sediment Control Plan is anticipated to be required as part of this process to outline the measures to manage any causes of erosion.</p> <p>Objective 5-1: Water management Values is relevant as the Site directly affects one of the "rivers" listed under Upper Mangaone Stream (Mana_11d). making provision for stormwater treatment ensures that the discharges are managed and the design and provision for detention ensure that that flooding is considered.</p> <p>The ecological value of the stream systems affected have been assessed as being low. The changes proposed even though culverting will be involved include the management of contaminants and flood mitigation impacts on streams and ground water will be consistent with Objective 5-1: Water management Values and Objective 5-2: Water quality and Objective 5-4 Beds of rivers and lakes.</p> <p>The proposal involves a significant increase in indigenous vegetation and is consistent with Objective 6-1 Indigenous biological diversity.</p> <p>There are streams with low natural character and no public access. There are no natural wetlands present. The highly modified streams will be affected by culverting and earthworks will change the landform. The design of the culverts is expected to be consistent with the New Zealand Fish Passage Guidelines and sized and positioned to allow water through the site in a manner that</p>

Relevant planning documents	Conclusions
	<p>avoids causing upstream flooding. The works are not inconsistent with Objective 6-2 Outstanding natural features and landscapes, and natural character.</p> <p>There are no recorded or known archaeological sites present and the works are not inconsistent with Objective 6-3 Historic heritage.</p> <p>It is expected that discharges into the air from the operation of the Freight Hub will not impact on air quality however for those within 100m of the marshalling yards there is the potential that the use of roof water for drinking water supply could have a detrimental impact on human health. A number of solutions are proposed by KiwiRail to mitigate any potential effects, as outlined in the Proposed Conditions. These will ensure consistency with Objective 7-1 Ambient Air Quality.</p> <p>While the location of the works is in a flood plain of the Mangaone Stream catchment and the work done proves that the infrastructure can be developed so it is not adversely affected by flood waters and shows that it is possible to minimise effects outside the site by passing flood waters through the site and detaining discharge which is consistent with Objective 9-1: Effects of natural hazard events that sets the overarching approach for managing effects of natural hazard events in the Region. The assessment of risks related to faults and liquefaction has also concluded that subject to confirmation through investigations on the Site, any geotechnical risks are likely to be managed.</p> <p>I conclude that while the Freight Hub involves works that will require resource consent under the rules of the Horizons One Plan as methods for achieving the objectives of the RPS, the NoR is not inconsistent with the objectives of the RPS.</p> <p>The RPS has relevant policies that have also been considered in section 10 of the AEE and the response to question 177 of the First section 92 response.</p>
Palmerston North City District Plan	<p>2.5 The City View Objectives</p> <p>The location of the Freight Hub will sustain a compact, orderly, and connected urban form although located partly on rural zoned land. The location has been selected to ensure efficient provision of, and access to, rail and road infrastructure. The Freight Hub will be designed and constructed to promote a coordinated, healthy and safe environment and through its construction and operation provide for a range business and economic activities in the city and stimulate investment. The effects of natural hazards can be either avoided or mitigated and appropriate measures will ensure that noise sensitive activities are protected while enabling the Freight</p>

Relevant planning documents	Conclusions
	<p>Hub to operate in a safe and efficient manner. The designation ensures that all forms of transport, including public transport, walking, cycling, and private vehicles are adequately provided for. Hazardous substances will be handled through the operation of the Freight Hub but the adverse effects of their storage and use will be avoided through appropriate design and management.</p> <p>The Freight Hub is infrastructure of regional or national importance and its establishment and operation needs to be provided for.</p> <p>3.5 Objectives 1 – 4 relate to the role of Tangata Whenua in the development of the City and the need to protect sites of significance</p> <p>KiwiRail continues to engage with Ngāti Kauwhata, Rangitāne o Manawatū, and Ngati Raukawa and more recently Ngati Turanga, seeking to work with them and develop a Mana Whenua Framework as outlined in the Proposed Conditions for the ongoing involvement in the design and operation of the Freight Hub.</p> <p>The Mana Whenua Engagement Framework will ensure that there is a process in place through which cultural values can be identified and given effect to as part of the construction and operation of the Freight Hub.</p> <p>Collectively 9.3 Objectives 1 - 4 seek to protect the rural area, its character, and its community.</p> <p>The Freight Hub is proposed on land that is both rural and urban and with the planting proposed along with the management of stormwater and noise management will minimise impacts on the rural character but cannot protect it in this location and the immediate area.</p> <p>Objectives 5</p> <p>The Freight Hub will not be a noise-sensitive activity that will impact on the airport.</p> <p>12.A.3 Objective 1 -6</p> <p>The Freight Hub will support industrial growth and enhance the amenity of the NEIZ and is not expected to be incompatible with the activities of the NEIZ.</p> <p>12.A.3 Objective 7.1 and 7.2</p> <p>The height of buildings and glare from lighting structures is not expected to affect Airport operations.</p> <p>17.3 B Objective 1</p> <p>KiwiRail is working with mana whenua to understand and recognise the cultural values of the site and wider area.</p> <p>17.3C Objective 1</p>

Relevant planning documents	Conclusions
	<p>No notable trees, groups of notable trees, and habitats of local significance are expected to be destroyed.</p> <p>20.3.1 Objective 1 -3</p> <p>KiwiRail will work with the Council and Waka Kotahi to ensure the road network is maintained and developed to ensure that people and goods move safely and efficiently while ensuring that the rail network is able to ensure that goods move safely and efficiently through the City.</p> <p>2.3 Objective 2</p> <p>The shape, location and design of the Freight Hub will both ensure that any impact of natural hazards is minimised on the Hub and on land around it.</p> <p>23.3 Objective 2 and 3</p> <p>The designation provides for the relocation and upgrade of a key part of an existing network utility of regional and national importance, while ensuring that adverse effects on amenity, landscape, health and safety, and cultural and heritage values are re avoided, remedied, or mitigated.</p>

APPENDIX 3
OTHER MATTERS RELEVANT TO SECTION 171 CONSIDERATION

Matter	Comment
National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (" NESCS ")	<p>The regulations relate to assessing and managing contamination in soil to protect human health. This means that the NESCS will be applicable as there are likely to have been farming activities occurring on the Site that will have caused localised site contamination. It is expected that a resource consent will be required under the NESCS to show the Council that potential risks to the health of site workers and the health of neighbouring residents can be managed.</p> <p>In my opinion, and based on the evidence of Mr Heveltdt, these risks can be identified through a DSI, and managed through a Site Management Plan as part of the resource consent process, should a consent under the NESCS be required.</p>
Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (" NES-F ")	<p>The NES -F is relevant as the regulations set standards for works that relate to fresh water. There are two stream systems in the Designation Extent. Under the NES-F, KiwiRail will need to obtain regional consent for installing culverts in those sections of the stream systems that fall within the definition of 'river', where they are not able to comply with permitted activity standards specified. As part of determining the site layout and the subsequent Designation Extent, consideration was given to the location and form of culverts and their potential effects on the stream systems and the potential to be able to mitigate these effects. Consent under the NES-F will be part of the regional consenting process for the Freight Hub.</p>
The Government Policy Statement on Land Transport 2021 (" GPS 21 ")	<p>I consider that the GPS 21 is directly relevant to decision making as it recognises that investment in the rail system will lead to stronger inter-regional connections while making freight movements safer. It also recognises that efficient, reliable, safe, mode-neutral, and resilient freight transport – within cities, between regions and to ports – is vital for a thriving economy. The development of the Freight Hub in the proposed location will be consistent with the four priorities of the GPS 21. These overlapping priorities are intended to guide land transport investment. Reducing the volume of road traffic across the North Island will address Priority 1 Safety, as will the improvements to the local road network around Palmerston North and the consequence of the Freight Hub in reducing the number of level crossings. Decommissioning of the Existing Freight Yard at Tremaine Avenue due to the relocation of operations may result in better connectivity which is consistent with Priority 2 Better</p>

Matter	Comment
	<p>Travel Options. This will result in less congested transport corridors within the area surrounding the Existing Freight Hub. The Freight Hub will provide greater efficiencies in terms of moving freight due to its location in the NEIZ and proximity to the airport, which is consistent with Priority 3 Improving Freight Connections for economic development. Moving more freight by rail will result in a reduction in carbon emissions which is consistent with Priority 4 Developing a low carbon transport system that supports emissions reductions while improving safety and inclusive access.</p>
NZ Rail Plan 2021	<p>The Draft 2019 plan was reviewed for the AEE and First section 92 response. In May this year, the Government released the first NZ Rail Plan and Rail Network Investment Programme. New Zealand Rail Plan highlights a need to invest in the national rail network to maintain and grow rail freight. The Rail Plan identifies a future priority for the rail system as including more regional routes and improved logistic hubs. An intermodal freight hub in Palmerston North will help grow the role of Palmerston North as a critical freight distribution centre for the lower North Island and is listed in the Rail Plan as an investment priority for the region. The proposal is to designate the land required for the development of this intermodal freight hub.</p>
The Regional Land Transport Plan (2015-2025) 2018 Review (" RLTS ")	<p>The RLTS recognizes the Palmerston North - Manawātū sub-area as the hub of the growing freight distribution industry because of its central location and connection with the State Highway, rail and air networks. The RLTS highlights that network efficiency is a key issue for the movement of freight to and from the region. The Horizons Region has long advocated for better utilisation of existing rail infrastructure. The RLTS recognizes that increased use of the rail network for freight will increase the resilience of the regional land transport network and would have positive road safety outcomes due to reduced conflicts between heavy vehicles, private vehicles, and cyclists. The objectives of the RLTS are consistent with the proposal for the Freight Hub.</p>
The Accelerate 25 Regional Growth Economic Development Strategy / Manawatu – Whanganui Growth Study Economic Action Plan 2016	<p>The Accelerate 25 Regional Growth Economic Development Strategy/ Manawatu – Whanganui Growth Study Economic Action Plan 2016 recognises the importance of Palmerston North as a key multi-modal intersection at the centre of rail and road networks and the importance of streamlined and efficient movement of freight. It identifies that the region needs to have capacity to efficiently collect, package, and redistribute product and in doing so, reduce costs and increase the speed associated with getting products to market. The proposed Freight Hub aligns with the plan, as it will support the</p>

Matter	Comment
	development of the efficient and well-served hubbing that the action plan envisages.
The PNCC 10 Year Plan (2021-2031)	The PNCC 10 Year Plan states that the NEIZ is well located to leverage off the presence of rail and recognizes the importance of rail in the distribution of freight and identifies that major infrastructure projects are a key enabler for growth. The proposed Freight Hub is the core component in ensuring the efficient utilisation of rail within the region subject to integrating with the surrounding road network and the future ring road proposed by Waka Kotahi.
The Economic Development Strategy 2018	The Freight Hub aligns with several the goals and priorities of the Economic Development Strategy 2018. The strategy has a strong emphasis on infrastructure and innovative industries for Palmerston North and the Council has identified logistics as one of the six priority sectors that will determine Palmerston's future economic wellbeing. As outlined in the strategy the Council agrees to support investment in this area. The Freight Hub introduces an innovative logistics model into the region and should support both existing and growing industries in the area.
The City Development Strategy 2018	The City Development Strategy 2018 identifies strategic goals for the city's development between 2018 and 2028. This document gives a clear directive for the Council to support infrastructure development. It notes that integrating rail to form a significant intermodal freight and distribution hub is a major strategic issue (in that current rail access is limited and existing infrastructure is privately owned). The road access and network upgrades anticipated as part of the development of the Freight Hub should assist in improving access to rail.
The Strategic Transport Plan 2018/2021	The Freight Hub goes directly to the purpose of the Strategic Transport Plan 2018/ 2021, which in short, seeks to provide safe, resilient and reliable travel routes, conditions and interconnected intermodal transportation – ie transport infrastructure. Logistics has been identified as a key infrastructure target for the region. The Freight Hub is intended to be both "resilient and reliable" infrastructure in that is intended to support growth of freight movement over the next 30 years, and to support a modal shift from road to rail movement of freight, to contribute to emissions reductions. On that basis it is a significant investment in supporting New Zealand's commitments in emissions reductions.
Statutory Acknowledgements	A review was undertaken in respect to the Statutory Acknowledgments relevant to the Site, as the Designation Extent includes Crown owned land. This revealed that there are none that directly impact the Site. However it is noted that through its

Matter	Comment
	<p>submission, Rangitane o Manawatū noted that a statutory acknowledgment is held over the Manawatū River and its tributaries including the Mangaone Stream and therefore the stream systems that run through the Designation Extent as they drain to the Mangaone.</p>

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

REBUTTAL STATEMENT OF EVIDENCE OF MARK GEORGESON

TRANSPORT

1. INTRODUCTION

- 1.1 This evidence has been prepared in response to the transport evidence of Mr Michael Nixon dated 23 July 2021 on behalf of Foodstuffs North Island Limited, relating to their Distribution Centre at 703 Roberts Line, referred to as "DC site" by Mr Nixon.
- 1.2 This rebuttal evidence will respond to the following issues raised by Mr Nixon:
- (a) sight distances to the Railway Road – Roberts Line intersection;
 - (b) Roberts Line geometry at Railway Road;
 - (c) vehicle crossings for the DC site; and
 - (d) extent of the designation and land take for the roundabout at Roberts Line / Richardsons Line intersection.
- 1.3 I have developed concept designs for the section of Roberts Line between Railway Road and Richardsons Line, fronting the DC site, to inform my responses. They are attached as **Appendix A** to this rebuttal evidence, and labelled as Figures 148, 149, 150 and 151. Figure 148 is an overall drawing, and the other three are panels of the same that I refer to variously throughout my evidence.

2. SIGHT DISTANCE

- 2.1 Mr Nixon is concerned that the geometry of the proposed Railway Road / Roberts Line curve will affect available sight distances at the DC site from the car park and truck exit vehicle crossings. He is specifically concerned with the sight distance to the east (towards the curve).¹
- 2.2 For context, Roberts Line has recently had a downward revision of its speed limit to 60km / hr from the original 100km / hr.
- 2.3 As outlined in Mr Nixon's evidence, the sight distance from the Foodstuffs car park and truck exit vehicle crossing on a 60km / hr road is stated as 115m in the RTS-6 guide.²
- 2.4 It is relevant to review the matter of sightlines in the context of the 2006 application for Resource Consent for the then proposed Distribution Centre. That application was accompanied by an Assessment of Traffic Impacts prepared by Tim Kelly Transportation Planning Limited.³ I include a copy of that report at **Appendix B**. At Section 4.3 of the report, it is stated that vehicles approaching from the east via a left turn from Railway Road can do so at a speed of 60km / hr. The report goes on to state at Page 21 that "a vehicle travelling at this speed would require 63m in which to stop" and concludes that the "separation distance from the intersection is therefore sufficient to minimise the risk of collision."
- 2.5 In my view, the sight distance of 63m as sought by Foodstuffs in its consent application will not be compromised by the changes to the Railway Road / Roberts Line intersection proposed by the Freight Hub.
- 2.6 Mr Nixon also states that the current available sight distance from the DC site carpark vehicle crossing is in fact longer, estimated at 95m. My check gives a very similar existing sight distance of 99m. I show this on Figure 151, and on the same diagram show the sight distance of 96m that will be achieved by the proposed curve changes, within the NoR designation. From a user perspective, these existing and future sight distances to the east can be regarded as the same, being approximately 50% longer than the sight distance of 63m.

¹ Evidence of Michael Nixon dated 23 July 2021, at 3.1.

² Based on Road Traffic Standards 06, Guidelines for Visibility at Driveways (RTS-6).

³ Assessment of Traffic Impacts, November 2006.

- 2.7 I need to comment on the different sight distance values I have mentioned here. The 63m value indicated by Mr Kelly is commonly referred to as the stopping sight distance, and provides time for a driver to perceive a potential conflict, react, and stop if necessary. The 115m from RTS-6 includes an additional time of 3 seconds to allow a driver to observe and make a decision about a potential safety risk, before reacting.
- 2.8 The fact that a sight distance of 115m is not available does not necessarily mean a driveway is unsafe. To understand the safety history for the existing vehicle accesses, I undertook a CAS search for the section of Roberts Line between Railway Road and Richardsons Line for the past five years (2016-2020 inclusive). The search showed no record of crashes along this portion of the road, and none at any of the three existing driveways serving the DC site. While I acknowledge that traffic volumes will increase on Roberts Line in response to development of the Freight Hub, there are no existing safety issues at the existing accesses.
- 2.9 In my opinion, the Freight Hub will not have adverse impact on sight distances at the existing Foodstuffs driveways.

3. ROBERTS LINE GEOMETRY

- 3.1 At his paragraphs 3.6 and 3.7, Mr Nixon determines that a 105m radius curve should be introduced at the Railway Road / Roberts Line corner. I agree with this design requirement, and confirm that the corner alignment can be designed to standard guidelines with a radius of 105m.
- 3.2 I show the proposed curve design in Figure 149. In my view, this demonstrates that the designation extent is sufficient to construct and operate a safe solution for the new curve.

4. VEHICLE CROSSINGS

- 4.1 The proposed closure of Railway Road north of Roberts Line and the redistribution of traffic along Roberts Line, in front of the DC site has raised a concern for Mr Nixon around the safe and efficient operation of the DC site vehicle crossings. He addresses this matter from paragraph 3.12 of his evidence.
- 4.2 I acknowledge that traffic passing the Foodstuffs driveways on Roberts Line will increase a result of the changes planned by the Freight Hub. In order to quantify the impacts on the three Foodstuffs' driveways arising from these

changed future volumes, I undertook an analysis of each using the SIDRA intersection analysis software. The analysis was undertaken for the 2021 existing situation and for future scenarios at 2031 and 2051, without and with the Freight Hub. The SIDRA analysis was undertaken for the PM peak hour, consistent with the analysis reported in Technical Report C – Integrated Transport Assessment ("ITA").⁴

- 4.3 I looked to the Assessment of Traffic Impacts submitted as part of the 2006 Resource Consent for the DC site for truck and car volumes generated by Foodstuffs. In that report, as included in the table I repeat below, car park volumes have been split into Office Worker (36 vehicles) and Warehouse Shift (144 vehicles). Their movements do not overlap. Although the Warehouse Shift times are not coincident with the PM peak hour, I applied a conservative approach insofar as these trips were analysed as happening at the same time as the PM peak.

Event	Time Period	Vehicle Movements in Period		
		Inbound	Outbound	2-Way
AM Warehouse Shift Arrival	05:30 – 06:00	144	-	144
Office Worker Arrival	07:30 – 08:00	36	-	36
PM Warehouse Shift Arrival	13:30 – 14:00	144	-	144
AM Warehouse Shift Depart	14:00 – 14:30	-	144	144
Office Worker Departure	17:00 – 17:30	-	36	36
PM Warehouse Shift Depart	22:00 – 22:30	-	144	144

Table 4.2: Expected Light Vehicle Movements

- 4.4 The Assessment of Traffic Impacts also states that the development will generate 350 trucks between 7.00am and 10.00pm. Since the analysis undertaken as part of the Assessment of Traffic Impacts used 15 trucks (in and out) per hour, my analysis was also undertaken using 15 truck movements per hour.
- 4.5 In summary, the volumes analysed in SIDRA are as follows:
- (a) 15 trucks entering and 15 trucks exiting the site during the PM peak hour;
 - (b) 144 car movements exiting the car park during the PM peak hour; and

- (c) the following PM peak hour traffic volumes for Roberts Line are taken from the modelling analysis undertaken to inform the ITA:

Scenario	Roberts Line PM Peak Hour (vph)
2021 - Existing	160
2031 – without Freight Hub	350
2031 – with Freight Hub	1,000
2051 – without Freight Hub	550
2051 – with Freight Hub	1,250

- 4.6 I have also looked to the Assessment of Traffic Impacts for the traffic distribution for truck and cars, which reports a 60% / 40% split from the west and east for trucks, and a 50% / 50% split for cars.
- 4.7 In order to simulate the gap acceptance requirements for heavy vehicles, I have referred to the Austroads Technical Report – Road Design for Heavy Vehicles.⁵ The details of that report include research of gaps for trucks turning to and from a major road. The gap of most interest in this instance is the right turn from the truck exit driveway. Tables 3.16, 3.17 and 3.18 of the Report summarise critical gaps for different truck types and variously determine ranges of:
- (a) 7.0 - 7.2 seconds for heavy rigid trucks;
 - (b) 9.0 - 9.6 seconds for semi-trailers; and
 - (c) 9.4 - 10.6 seconds for truck-trailers.
- 4.8 At paragraph 3.14 of his evidence, Mr Nixon refers to an estimated time of 10 seconds for semi-trailers to turn right out of the DC site. This aligns well with the above research, and is the value of the critical gap I have adopted for the SIDRA analyses.

⁵

Tables 3.16, 3.17 and 3.18: Austroads Technical Report AP-T293-15 - Road Design for Heavy Vehicles.

4.9 I provide a summary of the results of the SIDRA analysis in the following table.

Intersection	Scenario	Critical Movement	Avg Delays (Sec)
Roberts Line/Foodstuffs Truck Entry	2021 Existing	Right Turn In	5.1
	2031 without Freight Hub	Right Turn In	6.1
	2031 with Freight Hub	Right Turn In	18.7
	2051 without Freight Hub	Right Turn In	8.1
	2051 with Freight Hub	Right Turn In	30.9
Roberts Line/Foodstuffs Truck Exit	2021 Existing	Right Turn Out	2.8
	2031 without Freight Hub	Right Turn Out	6.8
	2031 with Freight Hub	Right Turn Out	88.8
	2051 without Freight Hub	Right Turn Out	19
	2051 with Freight Hub	Right Turn Out	>120
Roberts Line/Foodstuffs Car Park	2021 Existing	Right Turn Out	1
	2031 without Freight Hub	Right Turn Out	1.5
	2031 with Freight Hub	Right Turn Out	4.8
	2051 without Freight Hub	Right Turn Out	3
	2051 with Freight Hub	Right Turn Out	18.4

4.10 Looking at the top part of the table, my analysis of the Foodstuffs truck entry shows that the right-turn-in movement will continue to operate acceptably, with an average delay for the largest truck turning into the DC site of approximately 30 seconds (in 2051, at full build out of the Freight Hub).

4.11 The middle part of the table shows the results for the Foodstuffs truck exit. Not unexpectedly, the analysis predicts that delays to exiting trucks will increase substantially in the future with increased traffic use of Roberts Line.

4.12 It is important to note that the analysis has been undertaken for scenarios 10 and 30 years in the future, when traffic growth and future performance of the road network is difficult to predict. The proposed Operational Traffic Management Plan ("**OTMP**") condition will determine relevant roading works required as a result of the Freight Hub by undertaking traffic monitoring and audits at predetermined intervals in future. In particular, clause (d) of proposed Condition 81 requires that the OTMP includes details of the form and timing of safety and road upgrades to the section of Roberts Line between Railway Road and Richardsons Line, including established accesses. This will inform ongoing responses for the Foodstuffs driveways.

4.13 In the event longer delays do materialise in the future, the option is available for trucks to turn left out of the DC site and use the proposed roundabout at the Roberts Line / Richardsons Line intersection shown in Figures 148 and 150 to undertake a U-turn.

5. LAND TAKE FOR THE ROUNDABOUT

- 5.1 The last matter raised by Mr Nixon relates to the geometry of the proposed Roberts Line / Richardsons Line roundabout. The views he expresses from paragraph 3.17 are that alternative options to avoid taking land from the DC site have not been fully investigated.
- 5.2 The roundabout concept I show in Figure 150 has been developed using the industry-recognised Austroads⁶ standard, for a design speed limit of 80km / hr, as proposed for the connection to the perimeter road. The guidelines state that a roundabout design for this speed environment requires a minimum central island radius of 20m and associated lane widths of 6.2m (single lane) and 4.6m (dual lane). Based on this standard, the land required for a roundabout of this size is appropriate to enable the construction and operation of this roundabout.
- 5.3 I have considered alternative positioning of the roundabout to minimise the impact to the DC site. The option to shift the design inwards to the Freight Hub as suggested by Mr Nixon is not operationally feasible because it will have a significant effect of shortening the length of available stacking between the roundabout and the first internal rail track. This first track enters the freight forwarding facilities and has an alignment that is governed by the location of the freight forwarders buildings, the position of other tracks, and rail design (that has been advanced by other technical experts).
- 5.4 In my view, a less safe outcome would result if the road stacking length between the roundabout and the first track was shortened by the kind of length needed to wholly provide for the roundabout to be built clear of the DC site.
- 5.5 As included in the ITA, Palmerston North City Council has provided for the upgrade of the Roberts Line / Richardsons Line intersection to a roundabout in their 10-year plan. This is one of the "Do Minimum" upgrades I outlined in my primary evidence. In my view, that roundabout would likely be built centrally in the road reserve and if designed to the standards I refer to above, would require land take on all four corners of the intersection, including from the DC site. As such, the roundabout design I include at Figure 150 would require the same land area in this location.
- 5.6 While there are examples of roundabouts off-set from the main road alignments, like the one Mr Nixon refers to at Figure 5 of his evidence, these are not best practice and introduce lesser outcomes, with acute angles, truck

⁶

Austroads Guide to Road Design Part 4B: Roundabouts.

tracking anomalies and differential deflections. In my view, the concept I show at Figures 148 and 150 demonstrates best practice design. I do however acknowledge that the design is only one potential solution and there needs to be some flexibility at this stage for the design to be further developed.

6. PROPOSED CONDITIONS

6.1 In paragraph 4.7 of his evidence, Mr Nixon has recorded that he agrees with Ms Fraser's recommendations and recommends that a Construction Traffic Management Plan ("**CTMP**") cover:

- (a) effects on properties likely to have their access affected by construction (including the DC Site); and
- (b) a requirement for the perimeter road to be constructed and operational prior to the closure of Railway Road.

6.2 Then in paragraphs 4.8 and 4.9, Mr Nixon recommends that trucks access between Railway Road and Roberts Line and to and from the Foodstuffs driveways needs to be maintained at all times.

6.3 I consider that these matters have already been adequately addressed in the Proposed Conditions attached to Ms Bell's evidence (which I support), including as follows:

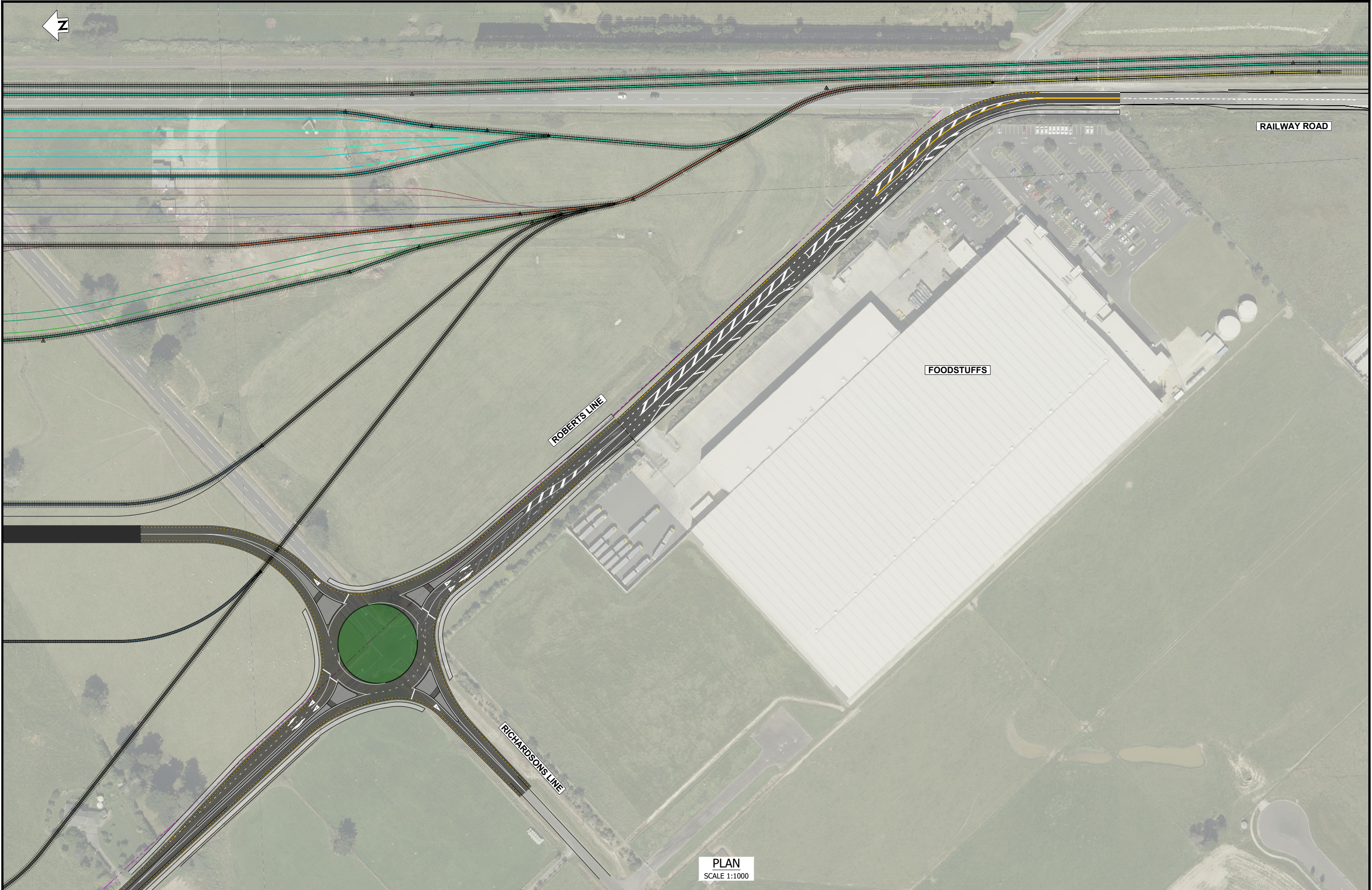
- (a) Condition 51 (being a standalone condition) requires the perimeter road (or relevant part if an alternative connection is provided) to be fully operational prior to the closure of Railway Road; and
- (b) Condition 65(g) requires the CTMP to identify properties affected by construction and outline measures to provide access on Roberts Line (which would include the DC Site).

6.4 Importantly too, the CTMP will be an evolving document that will respond to construction staging and changes, as provided for at Condition 66.

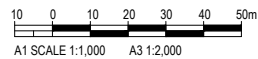
Mark Georgeson
4 August 2021

APPENDIX A

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PLAN
SCALE 1:1000



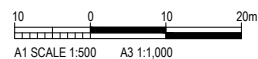
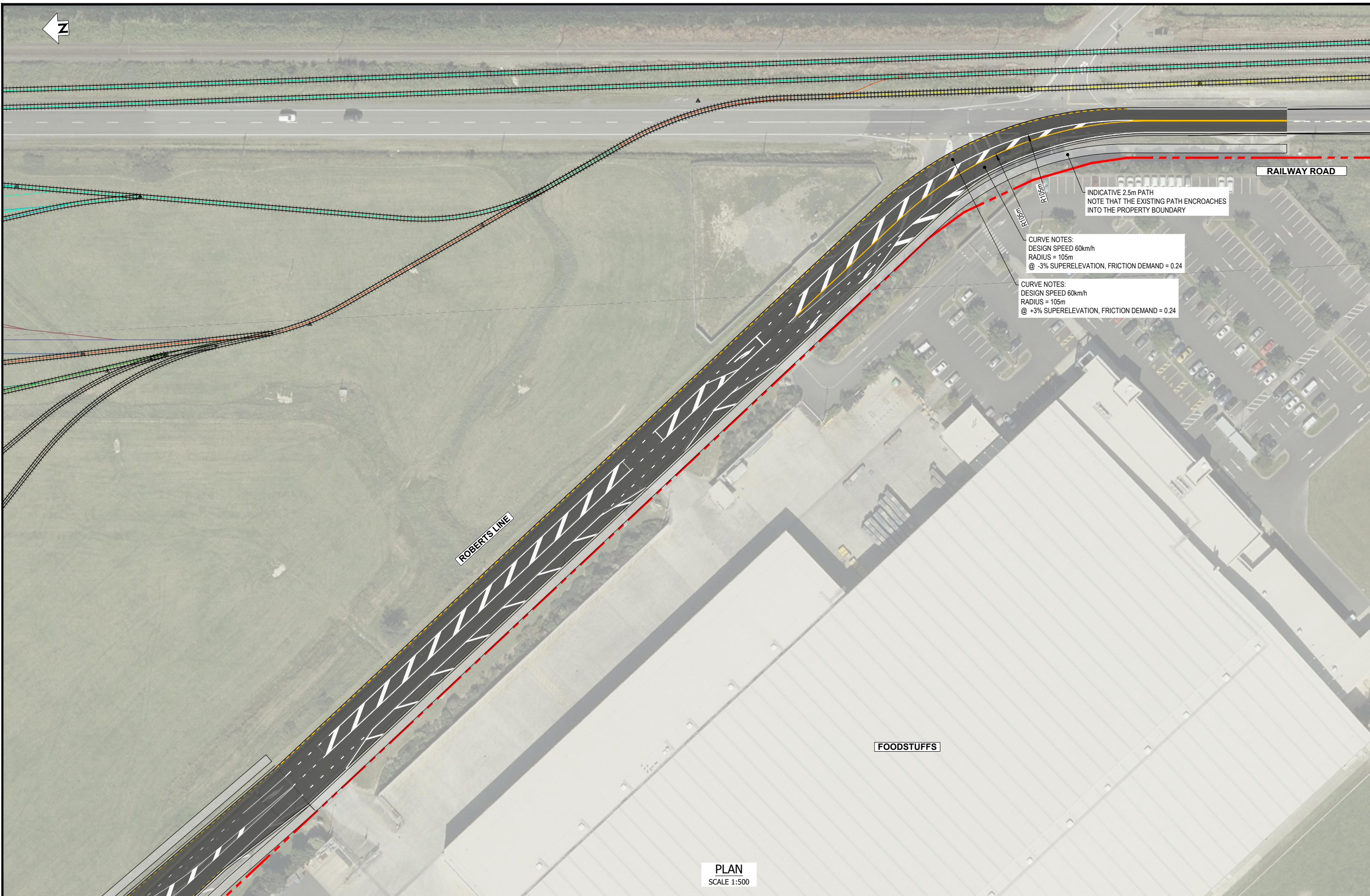
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REGIONAL FREIGHT HUB
ROBERTS LINE
OVERVIEW PLAN

Drawn By: B. HALLIDAY
Scale: AS SHOWN

FIG: 148

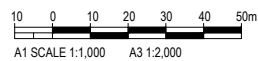
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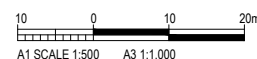
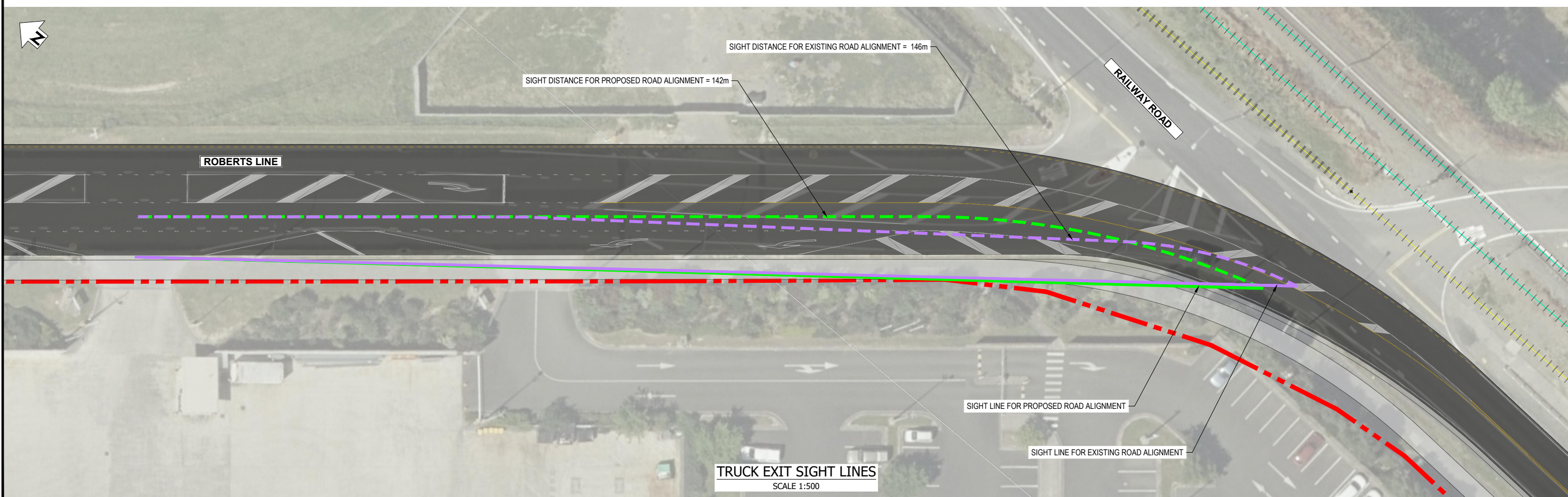
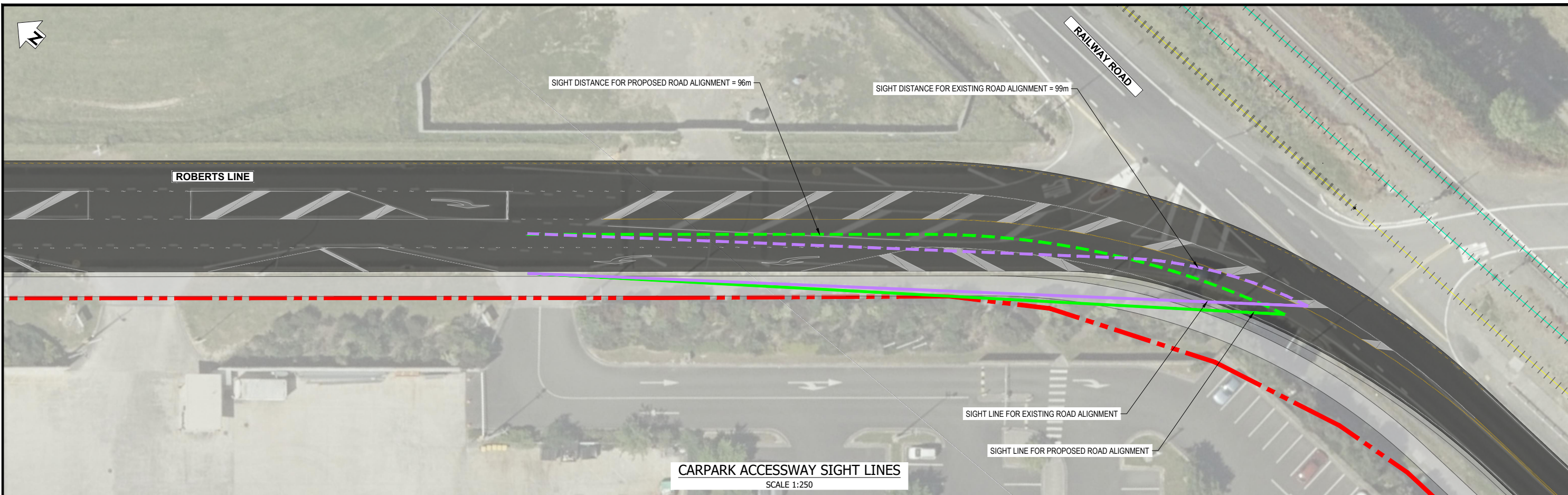


PLAN
SCALE 1:500

DESIGN PARAMETERS
MAXIMUM DESIGN SPEED = 80km/h
CENTRAL ISLAND RADIUS = 23m
CIRCULATING CARRIAGEWAY WIDTH (SINGLE-LANE) = 6.2m
CIRCULATING CARRIAGEWAY WIDTH (TWO-LANE) = 9.2m
MAXIMUM ENTRY PATH RADIUS
SINGLE LANE ENTRY = 55m
TWO LANE ENTRY (STAYING IN CORRECT LANE) = 55m
TWO LANE ENTRY (CUTTING ACROSS LANES) = 83m



8/4/2021 1:52 pm
C:\pwworking\p_projects\101170463\10003007-FIG-151.dwg



APPENDIX B

Appendix 2

Traffic Assessment

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Foodstuffs Distribution Centre, Palmerston North

Assessment of Traffic Impacts

Revision : FINAL

prepared by
Tim Kelly Transportation Planning Limited

for
Foodstuffs Wellington

November 2006

Reference: pnorthydistributioncentre final nov06.doc

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APPENDIX A:	Recorded Traffic Counts
APPENDIX B:	Crash Records
APPENDIX C:	Agreed Traffic Management Plan
APPENDIX D:	SIDRA Intersection Assessment Results

1 Background

The Foodstuffs (Wellington) Co-operative Society Ltd (Foodstuffs) proposes to construct a distribution warehouse facility on land adjacent to Roberts Line, on the north-eastern edge of Palmerston North.

The facility will improve the efficiency of the distribution function for Foodstuffs, resulting in an overall reduction in truck distances travelled throughout the lower North Island.

However, within the more immediate vicinity of the site, the facility will give rise to a significant number of vehicle movements associated with trucks, staff and visitors. The internal design of the facility has been developed to ensure that all such movements can be accommodated both safely and efficiently. Appropriate improvements to the external road network in the vicinity of the site have also been identified which will ensure that these vehicle movements will take place with minimal impacts upon existing users of the road network in this area.

This document reports a review of the transportation impacts of the distribution warehouse proposal. This considers in detail the movement of all vehicles associated with the activity, and also addresses the likely demands for pedestrian, cycle and bus movements. The proposal has also been assessed against the relevant requirements of the Palmerston North District Plan.

1.1 Content of Report

Section 2 describes the existing conditions in the area, including levels of traffic movement and accident records;

Section 3 describes the relevant aspects of the proposal;

Section 4 describes the likely impacts of the proposal upon traffic conditions in the area;

Section 5 assesses the compliance of the proposals with the requirements of relevant District and Regional plans; and

Section 6 presents the conclusions of the assessment.

2 Existing Conditions

2.1 Location

The location of the application site is shown by **Figure 2.1**.

The site lies approximately 5.3 km north-east of Palmerston North city centre, within a block bounded by Roberts Line, Richardsons Line and Railway Road.

The Palmerston North City / Manawatu District boundary runs along the north-eastern (Roberts Line) and north-western (Richardsons Line) frontages of the site.

2.2 Description of the Area

The area is semi-rural in nature, with 100km/hr speed limits, and no street lighting or footpaths.

Roberts Line

This forms the main frontage to the site. It is defined in the road hierarchy identified by the Palmerston North City District Plan¹ as a 'Local' route.

Roberts Line primarily provides local access and does not have a significant function as a through route. Current frontage activity is rural.

This has two marked carriageways on a sealed width of 5.5m, with grassed shoulders and a drainage ditch on the south-western side. The road is straight and flat, offering good visibility in both directions.

The intersection with Richardsons Line (at the northern corner of the application site) is priority controlled with the Richardsons Line approaches being subject to 'Give-Way' controls. Visibility distances for vehicle turning at this point exceed 300m.

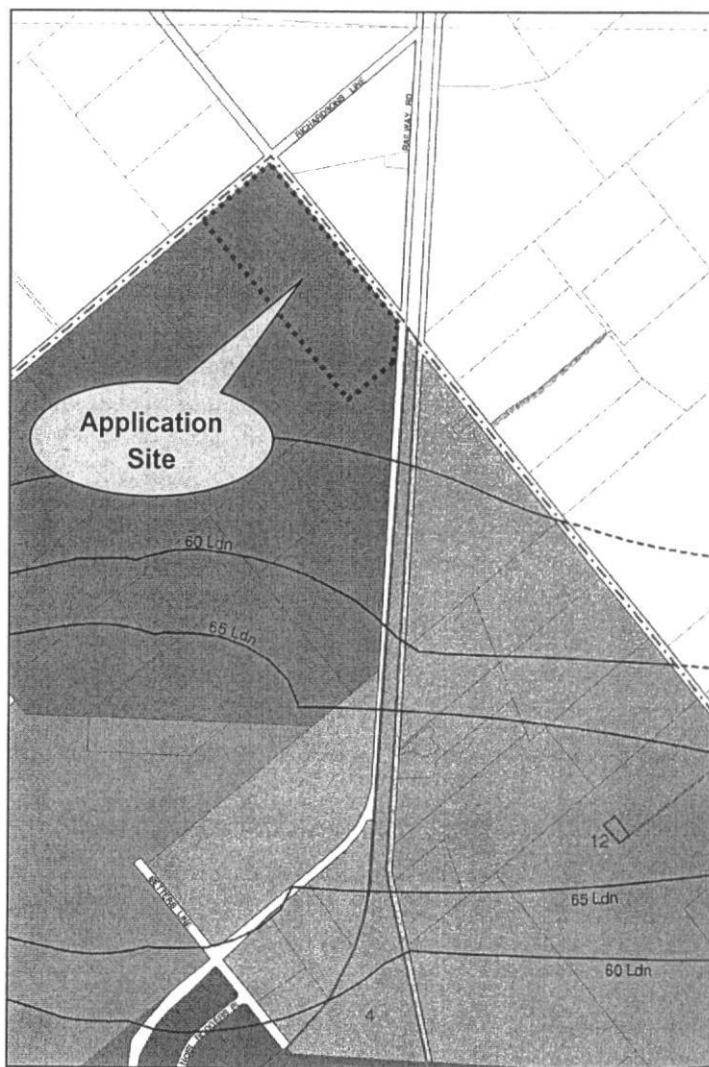


Figure 2.1 : Location Plan

(Source: Palmerston North City District Plan)

¹ Palmerston North City District Plan. Palmerston North City Council (operative March 2005)

Roberts Line continues to the north-west of this intersection, and intersects with the Kairanga – Bunnythorpe Road after a further 2kms. This section generally has a seal width of around 5.5m with grassed verges and two marked carriageways.

Railway Road

Railway Road has a short frontage with the site, immediately to the south of the Roberts Line intersection. The road hierarchy identified by the District Plan defines the section of Railway Road to the south of the Roberts Line intersection as a 'Principal' route.

Railway Road is the main route between Palmerston North and Bunnythorpe. Current frontage activity is mainly rural, with the railway running on a parallel alignment on the eastern side.

The road has two marked carriageways on a sealed width of 7.7m with 0.3m/0.5m shoulders (to the south) and 8.7m width with 0.85m shoulders (to the north). The road is straight and undulating, offering good visibility in both directions.

Railway Road and Roberts Line intersect adjacent to the application boundary. This is a priority intersection with the Roberts Line approaches subject to 'Give-Way' control. These approaches are staggered, with an offset of approximately 23m. The Roberts Line (east) approach crosses the railway approximately 15m back from the intersection; the crossing is controlled by lights and bells but no barriers. No specific lanes are provided for vehicles turning right into Roberts Line. Visibility distances along Railway Road to the north and south exceed 300m.

Richardsons Line

This forms the north-western frontage to the site. It is defined in the road hierarchy identified by the Palmerston North City District Plan as a 'Local' route.

Richardsons Line primarily provides local access but is also used by some movements between Bunnythorpe and points on the northern edge of Palmerston North. Current frontage activity is mainly rural. The airport adjoins the southern side further to the west.

This has a sealed width of 5.3m with grassed shoulders and drainage ditches, and no centreline. In the vicinity of the application site, the road is straight and flat, offering good visibility in both directions.

The intersection between Richardsons Line and Railway Road is priority controlled, with the Richardsons Line approach subject to a 'Give-Way' control. No specific lane is provided for vehicles wishing to turn right from Railway Road in to Richardsons Line. For traffic exiting Richardsons Line, visibility to the right (south) is good. Whilst the visibility to the north is constrained by the vertical alignment of Railway Road, the configuration of roads in this area means that few vehicles would turn right into Railway Road at this point.

2.3 Traffic Conditions

Existing Traffic Volumes – PNCC Count Information

Traffic counts have been supplied by Palmerston North CC for both Railway Road and Richardsons Line. These relate to a typical period in May 2004 and are summarised by **Figures 2.2 and 2.3**.

Traffic volumes on Railway Road (**Figure 2.2**) exhibit peaks in the morning and afternoon associated with commuter vehicle movements. The maximum flow of around 550 vehicles/hour occurs on weekday mornings. Saturday traffic volumes exhibit a single broad peak of traffic activity in the late morning period, of around 400 vehs/hour, whilst Sunday traffic volumes peak at around 300 vehicles/hour in the early afternoon period. Typical weekday daily traffic volumes are slightly below 5,000 vehicles/day.

Traffic volumes on Richardsons Line to the west of Roberts Line (**Figure 2.3**) exhibit a more erratic pattern, with peaks of up to 60 vehicles/hour in the week and only slightly less on Saturdays. Sunday volumes peak at slightly under 45 vehicles/hour in the late afternoon period. Typical weekday daily traffic volumes are slightly above 500 vehicles/day.

Existing Traffic Volumes – Railway Road / Roberts Line Intersection Survey

A survey of vehicle turning movements was undertaken at this intersection on Thursday 4th May 2006. All through and turning vehicle movements were recorded for half-hourly intervals between 7-9am, 10am-12pm, 1-3pm and 4-6pm. Light and heavy vehicles were recorded separately.

Summaries of the survey results are shown at **Appendix A**. Expansion of the counts to a 24-hour day (using a factor of 1.58 from the PNCC count), summarised at **Table 2.1**, shows that volumes recorded on Railway Road are slightly lower than the PNCC figures. This is likely to be because the PNCC figures refer to a point further to the south, where movements could be expected to be higher.

Road	8 Hr Surveyed	24hr Factored	% HV
Railway Rd (North)	2,637	4,166	7%
Railway Rd (South)	2,741	4,331	7%
Roberts Line (west)	562	888	4%
Roberts Line (east)	606	957	5%
Total Intersection (entering)	3,273	5,171	7%

Table 2.1: Summary of Surveyed Traffic Volumes, 2006

Existing Traffic Volumes – Railway Road / Richardsons Line Intersection Survey

A survey was also made of turning movements at this intersection at the same times as that above. This identified low traffic volumes using Richardsons Line (east), with 10 – 20 vehs/hour and an estimated 150 vehs/day on a typical weekday.

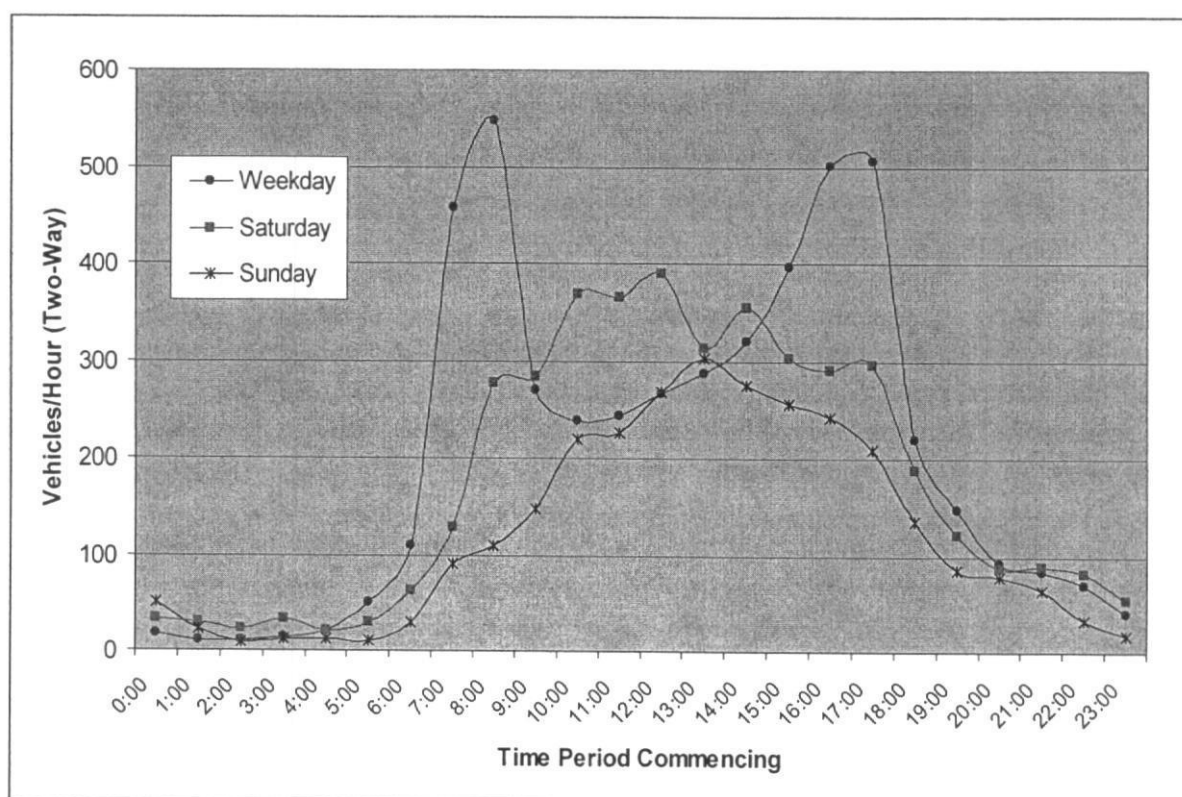


Figure 2.2: Typical Traffic Volumes, Railway Road

(Source: Palmerston North CC, May 2004)

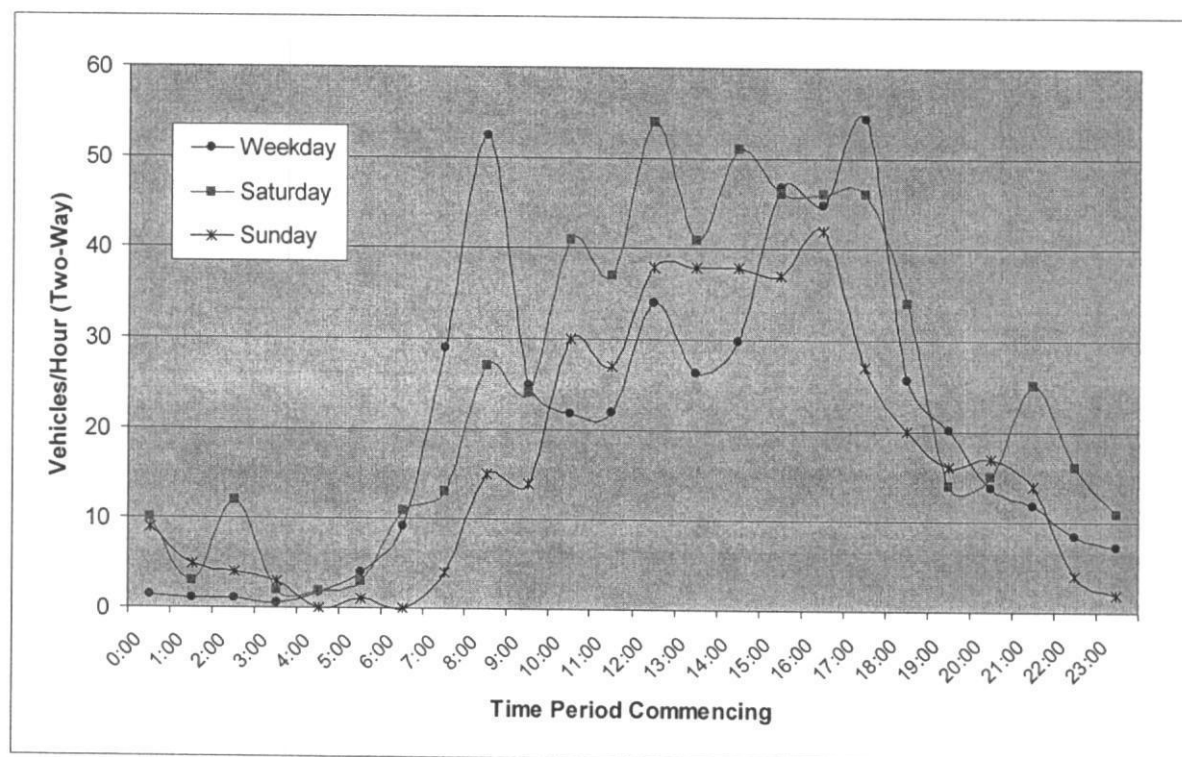


Figure 2.3: Typical Traffic Volumes, Richardsons Line (West of Roberts Line)

(Source: Palmerston North CC, May 2004)

Traffic Growth Rates

No information was available with respect to the annual growth in traffic volumes in this immediate area. Information is available for State Highways in the Palmerston North area, summarised by **Table 2.2**.

Road Section	Annual Growth 2000 – 2005 (% trend growth pa, of 2005 volume)
SH3 (East of Flyers Line)	3.4%
SH3 (North of Tremaine Ave)	4.7%
SH3 (E of P. North, near Te Matai Rd)*	1.6%
SH54 (Kairanga – Bunnythorpe)	5.3%
SH56 (Longburn)	1.4%

Table 2.2: Observed Annual Traffic Growth Rates

(* spurious value for 2001 replaced by estimate)

This suggests a wide spread of growth rates, but indicates growth above the average in the area to the north of the city. The rates relate to observed growth over a relatively short period. Future growth will be determined by a range of factors, including the performance of the regional and national economy, and local development such as that which has recently occurred in this area and this specific proposal. It is considered that a reasonable outlook for longer term growth in this area would be 3% per annum (of current volumes).

Capacity

Existing traffic volumes are well within the physical capacity of the mid-block road sections and hence congestion is not an issue in this area.

2.4 Crash Records

Crash statistics have been obtained for this area for the most recent 5-year period from Land Transport New Zealand.

All recorded crashes in the vicinity of the application site are shown by **Figure 2.4** (application site shown by a star symbol) and tabulated at **Appendix B**.

Summary details of those crashes closest to the application site are as follows;

- 17th March 2000 (ID = 2011362): a westbound car on Roberts Line failed to give way at the Railway Rd intersection and collided with a southbound vehicle; 3 minor injuries
- 18th September 2000 (ID = 2012392): an eastbound car on Roberts Line failed to give way at the Railway Rd intersection and collided with a southbound vehicle; 1 minor injury
- 27th March 2001 (ID = 2111572): an eastbound car on Roberts Line failed to give way at the Railway Rd intersection and collided with a northbound vehicle; 1 minor injury
- 23rd September 2003 (ID = 2354305): a westbound car on Roberts Line failed to give way at the Railway Rd intersection and collided with a southbound vehicle; no injuries
- 25th May 2004 (ID = 2452887): an unsecured load or trailer from a truck hit a car at the Roberts Line / Railway Rd intersection; no injuries

- 30th June 2004 (ID = 2452746): a southbound vehicle on Railway Rd lost control and went into a ditch 100m north of the Roberts Line intersection; no injuries
- 3rd August 2004 (ID = 2412637): a westbound car on Roberts Line failed to give way at the Railway Rd intersection and collided with a southbound vehicle; one minor and one serious injury
- 29th April 2005 (ID = 2551951): a northbound vehicle on Railway Rd lost control and went off the road 100m north of the Roberts Line intersection (possibly due to road-works in area); no injuries.

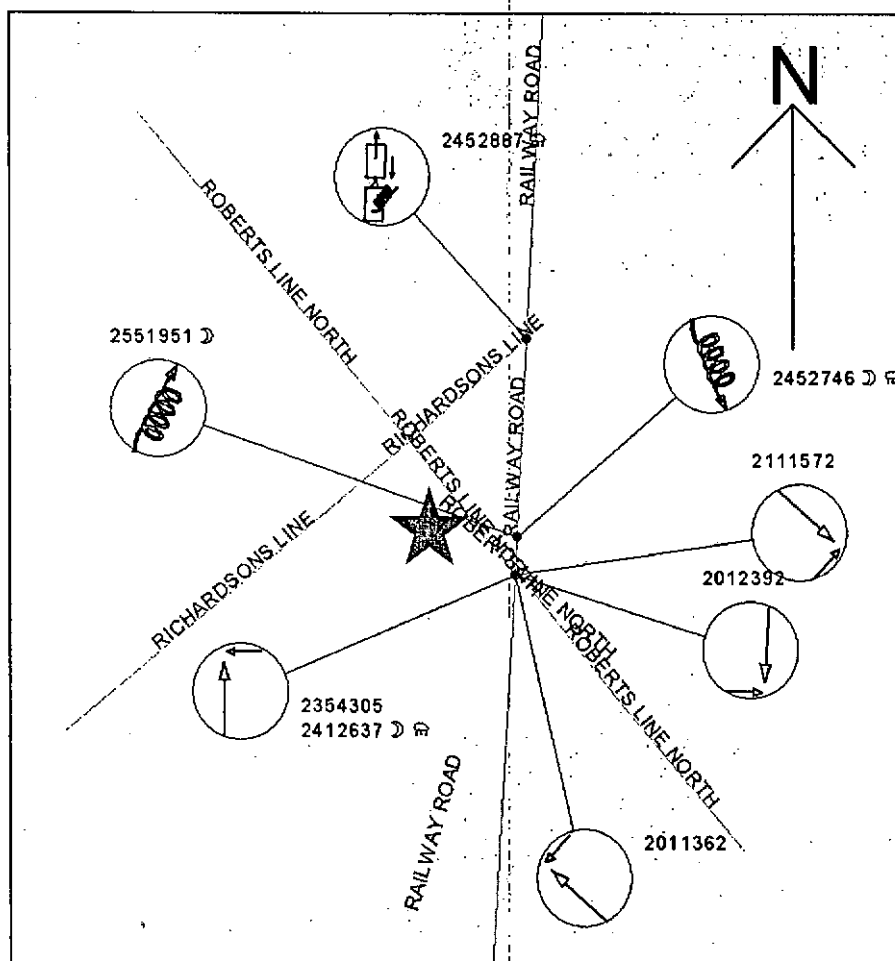


Figure 2.4: Recent Crash History (2000 – April 2006)

(Source: Land Transport NZ)

Only crashes involving personal injuries are required, by law, to be reported. Accordingly, it is likely that a number of non-injury crashes may have occurred but which have not been reported.

Overall, the number, type and severity of these crashes are not indicative of any systemic safety problems in this area.

2.5 Pedestrian & Cycle Routes

This area is semi-rural and there is no specific provision for pedestrian or cycle movements.

2.6 Public Transport

There are no public bus services in this area.

2.7 Existing Activity

The site is currently used for agricultural purposes and gives rise to a negligible volume of vehicular activity.

2.8 Potential Changes to the Roothing Network

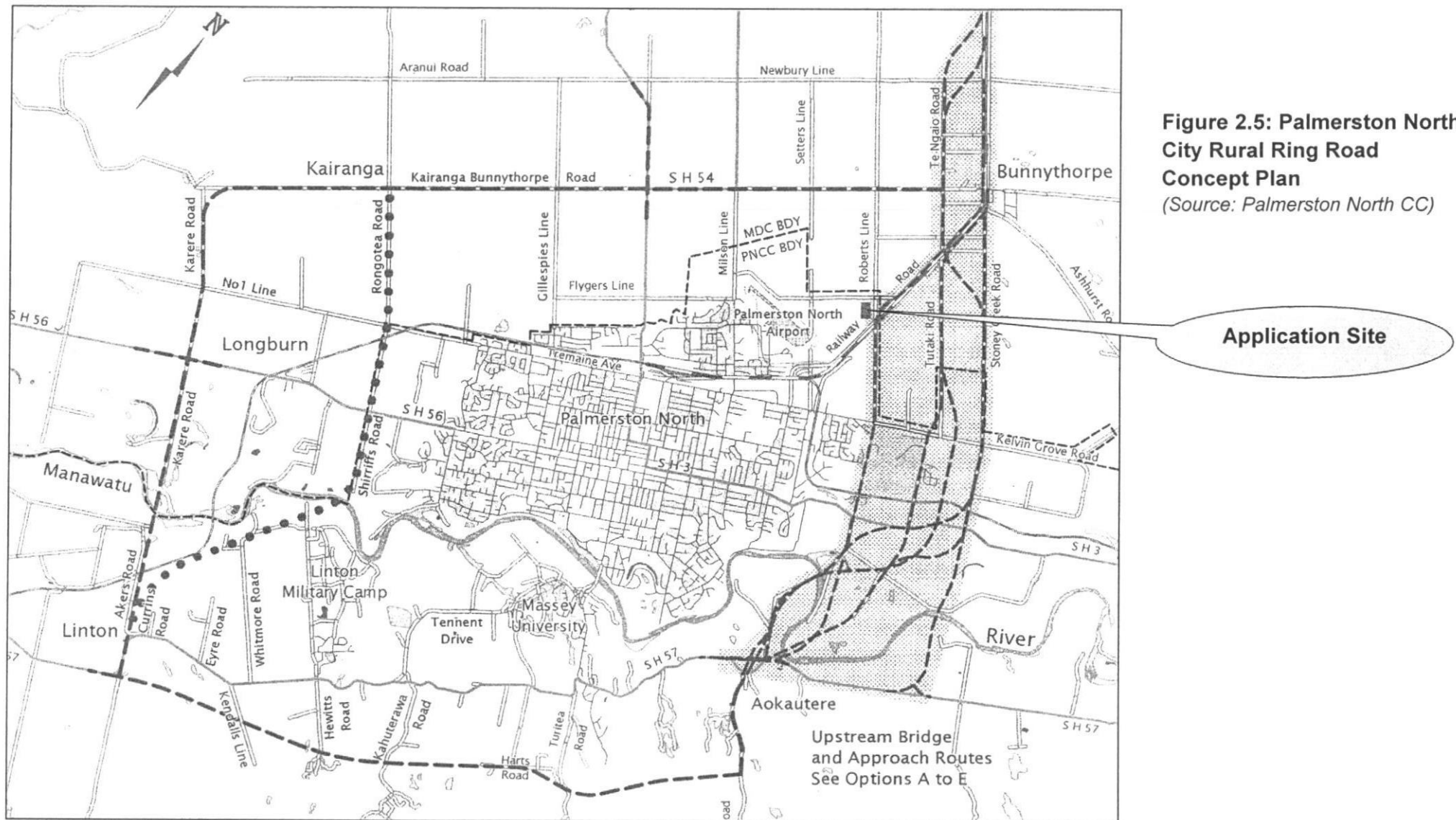
Palmerston North CC (together with Manawatu District Council) has been developing proposals for roading upgrades to accommodate growth in this area and across the city in general.

Figure 2.5 shows a concept plan for a rural ring route of the city which would provide an alternative route for through vehicle movements and provide some traffic relief to existing routes, such as Tremain Avenue. Further investigations are underway to define the route (and associated new crossing of the Manawatu River) to the east of the city between Bunnythorpe and State Highway 57. Sections of this route (for example, the Kairanga – Bunnythorpe road) are already used as an 'unofficial' ring route for some movements, though improvements would be required to accommodate increased traffic volumes associated with a more formal ring route.

The closure of Milson Line to facilitate an extension of the airport runway is still to be confirmed. If this measure were to proceed, then Richardsons Line between Milson Line and Roberts Line would also be closed.

The creation of a through route between Railway Road and Airport Drive is also proposed. When completed, this will create a high standard connection to JF Kennedy Drive and State Highway 3.

Considerable uncertainty exists with regard to the implementation and timing of these projects. These projects are likely to post-date the opening of the distribution warehouse facility and hence aspects such as truck routing will change as and when improved roading links become available. This has been recognised in the assessment of impacts described in **Section 4**.



3 Proposed Development

3.1 Description

The proposal is illustrated by **Figure 3.1**. (Further and more detailed plans are provided within other components of the application material.)

The proposal is for a distribution warehouse facility to service the lower North Island area. It is proposed that the warehouse capacity will be provided in two phases, as summarised in **Table 3.1**.

	Phase 1	Phase 2
Warehousing (m ²)	33,219	57,071
Dispatch Mezzanine (m ²)	252	252
Office (m ²)	2,490	2,490
TOTAL (m²)	35,961	59,813
Car Parks	278	378
Truck Loading Bays	10	10

Table 3.1: Proposed Floor Areas, Parking and Loading

The timing of Phase 2 is uncertain, though completion within 10 years is likely.

For the purposes of this assessment, the full Phase 2 development has been assumed.

3.2 Truck Access and Servicing

The warehouse will consolidate food supplies into deliveries to Foodstuffs' stores throughout the lower North Island. Two main types of truck movements will therefore take place;

- suppliers' trucks arrive loaded, unload their goods into the 'receiving' bays and depart empty
- Foodstuffs' trucks arrive empty, load goods from the 'despatch' bays and depart loaded.

The facility will operate 24 hours/day, 7 days/week. Typically, around 350 truck movements/day² are expected to take place, with at least 80% of these during the period 7am – 10pm. Most of these trucks will be articulated vehicles or B-trains of 20m in length.

To avoid congestion within the site and to smooth loading / unloading activity, trucks will be allocated an arrival time on a 15-minute interval system. Trucks arriving outside of their allotted time will only be accepted if the capacity exists to service them. Communication between trucks and the site will minimise the possibility of trucks arriving outside their allocated time if they cannot be accommodated, and the use of Foodstuffs' other sites in the area (Mihaere Drive and/or Kaimanawa Street) are available to be used to 'hold' trucks, if this is required. These measures will ensure that trucks waiting to be processed are not stored on the road network in the vicinity of the site.

² One movement is either an arrival or a departure.

Trucks will enter from Roberts Line and will be required to stop at a security barrier to ensure authentication before entry to the site. This barrier will be remotely controlled from the gatehouse located at the exit. At this point, trucks will be allocated a loading bay and will then proceed to the bay, driving past it before reversing in. Trucks will then be loaded or unloaded using forklift trucks, for which provision has been made for a 10m clear area behind each truck and 6-7m between adjacent trucks.

The most easterly truck dock will be reserved for use by smaller 12m trucks. This will ensure that these trucks can manoeuvre to and from this loading dock without difficulty.

The one-way circulation system within the site continues with all trucks using a separate point of exit on to Roberts Line, controlled by a gatehouse. Visibility for vehicles exiting at this point would be approximately 130m to the south-east (to the Railway Road intersection) and in excess of 300m to the north-west.

No cleaning or general maintenance of trucks will take place on the site.

The proposed facility will result in the closure of the existing distribution warehouse at Kaimanawa Street. The facility will not process frozen products, which will continue to be distributed from the existing cold store operated by Foodstuffs on Mihaere Drive.

3.3 Staff / Visitor Vehicular Access & Parking

Staff

The full facility will employ approximately 370 staff. Of these, 330 will be employed in the warehouse, with 160 working in each of two shifts 6am-2pm, 2pm-10pm and a nominal number of staff employed overnight. The remaining 40 staff will be office-based, working typical office hours on weekdays 8am – 5pm.

The staff parking area will be located at the south-east side of the site, and will provide parking for 324 staff vehicles. Within this, five spaces will be reserved for use by disabled staff members and these will be located close to the main building entry/exit.

Visitors

Typically, around 20 visitors are expected to be on the site during normal business hours. A maximum of 80 visitors may be present at any one time when a group meeting is being held in the conference room.

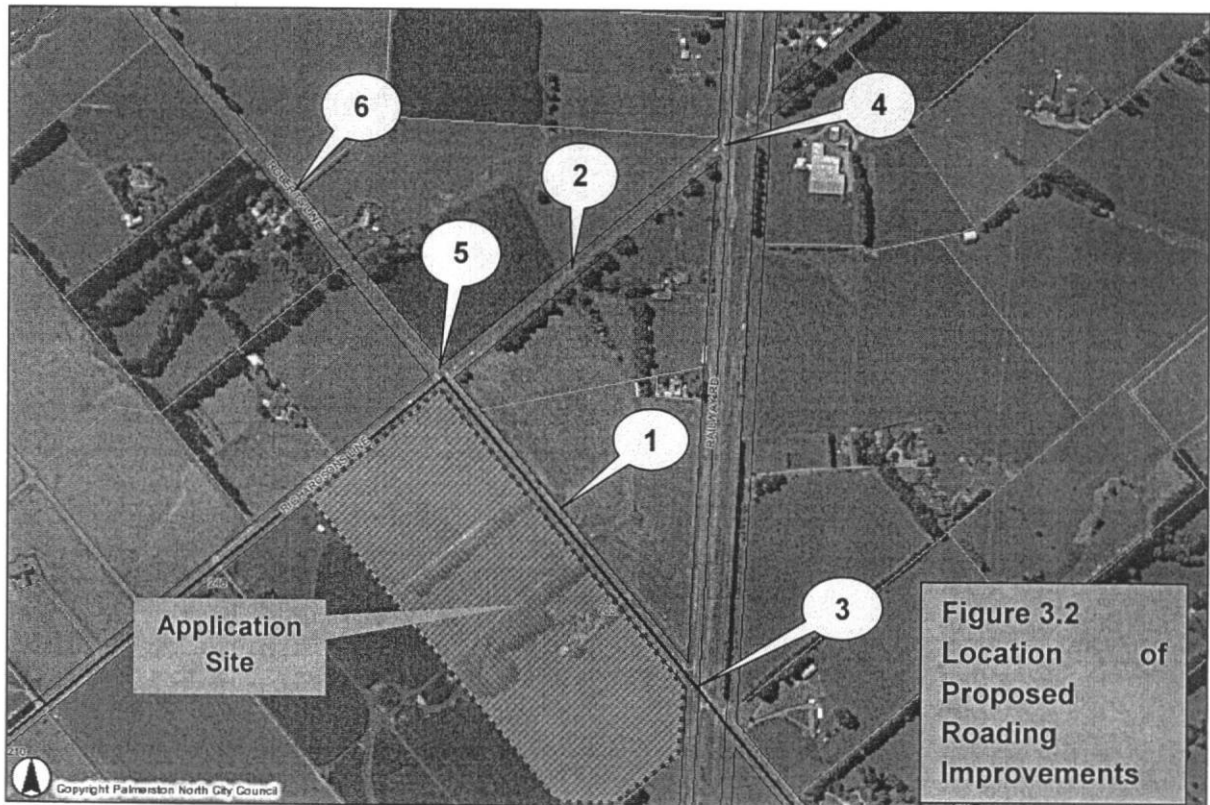
A visitor parking area with 54 spaces will be provided, separate to the staff parking area. This will include four spaces reserved for use by disabled visitors. When this area is full, any additional parking demand will be accommodated by the adjacent staff parking area.

Staff and visitor vehicle movements to and from the site will be segregated from truck movements by the provision of a separate access to/from Roberts Line. Visibility for vehicles exiting at this point would be approximately 80m to the south-east (to the Railway Road intersection) and in excess of 300m to the north-west. Although the staff parking area has a frontage with Railway Road, no direct access is proposed.

3.4 Changes to External Road Network

As described in **Section 2.8**, development in this area has been anticipated by the local authorities with the identification of plans for a number of roading improvements which would service such development and remove through traffic from the Palmerston North urban area.

In consultation with both Palmerston North CC and Manawatu DC, a package of roading upgrades has been identified which would accommodate the additional truck movements in this area. Individual measures are identified by **Figure 3.2** and described below.



Roberts Line (between Railway Road and Richardsons Line intersections) [Measure 1]

This section (of approximately 450m) is to be widened (the existing seal width is approximately 5.5m) and strengthened. The basic standard of construction would be that for a rural minor collector road as defined by NZS4404³. This provides for an 8m seal width comprising 2* 3.5m traffic lanes and 2*0.5m shoulders.

In addition, 3.5m wide lanes would be provided for vehicles turning right into the site from the north-west, and for vehicles turning left into the site from the south-east.

The configuration of the right turn lane would be broadly consistent with the requirements of the Manual of Traffic Signs and Markings⁴. The length of the right and left turning lanes would be sufficient to accommodate two trucks and hence would be a minimum of 40m.

³ Land Development and Subdivision Engineering; New Zealand Standard 4404. *Standards NZ, 2004.*

⁴ Manual of Traffic Signs and Markings (MoTSAM). *Transit NZ, 1994.*

Richardsons Line (Railway Road – Roberts Line intersections). [Measure 2]

This section (approximately 420m) is to be widened and strengthened. The basic standard of construction would be that for a rural minor collector road, as defined above.

Railway Road / Roberts Line Intersection [Measure 3]

Relocation / realignment of this intersection is not considered to be warranted.

Swept path curves for B-trains on a 12.5m turning radius suggest that vehicles turning between Railway Road (South) and Roberts Line (north-west) can do so within the existing seal, and no further modifications are considered necessary.

B-trains turning between Railway Road (north) and Roberts Line (north-west) would have some difficulty, with such manoeuvres necessitating turning across opposing lanes of traffic. For this reason, all truck movements between the site and Railway Road (north) will be encouraged to use Richardsons Line and its intersection with Railway Road to the north. This could, if necessary, be reinforced with the prohibition of the right turn manoeuvre from Railway Road (north) into Roberts Line.

It may also be appropriate for Palmerston North CC to introduce a heavy vehicle restriction upon Roberts Line (south-east). Such a measure could impact upon other truck movements in this area and hence would be the subject of a consultative exercise.

Railway Road / Richardsons Line Intersection [Measure 4]

A lane for vehicles turning right into Richardsons Line from Railway Road (north) is proposed. The configuration of this lane would be broadly consistent with the requirements of the Manual of Traffic Signs and Markings.

The left turn from Richardsons Line to Railway Road (north) would be eased as part of the general widening of this section of Richardsons Line (Measure 2).

Whilst the turns between Richardsons Line and Railway Road (south) are tight, none of the trucks associated with the proposal would be required to make this manoeuvre.

Richardsons Line / Roberts Line Intersection [Measure 5]

Trucks turning between Richardsons Line (north-east) and Roberts Line (south-east) would run across opposing traffic lanes and hence upgrading of this intersection is proposed, consistent with the widening of the adjacent sections of Richardsons Line and Roberts Line. Land appears to be available within the road reserve on the eastern corner of this intersection which would permit the easing of this turn to accommodate B-trains.

Richardsons Line (south-west) is planned to be closed as a through route (due to the extension of the airport runway) and hence this will become a cul-de-sac. This may create an opportunity for a change in the priorities at this intersection, with turns between Richardsons Line (north-east) and Roberts Line (south-east) becoming the priority movements. Furthermore, it may be appropriate for Manawatu DC to introduce a heavy vehicle restriction upon Roberts Line (north-west), though such a measure would impact upon existing truck movements in this area and would be the subject of a consultative exercise. The need for these measures would be governed by the future status of Roberts Line to the north (refer Measure 6).

Roberts Line (Richardsons Line – Kairanga/Bunnythorpe Road) [Measure 6]

This section of road is approximately 2kms in length. The width (5.5m seal), sub-base and culvert crossings would not accommodate significant use by heavy trucks. For this reason, the 'base package' of improvements anticipated the placement of a heavy vehicle prohibition to protect this section of road.

However, Palmerston North CC and Manawatu DC recognise that this represents a potentially more convenient route for trucks between the site and the Kairanga - Bunnythorpe Road which would avoid the use of the Bunnythorpe urban area for movements to/from the north, west and south (movements to/from SH3 would still route via Bunnythorpe to access the Ashhurst Road).

Use as a heavy vehicle route would necessitate works to widen and strengthen the road, and changes may be necessary to the intersections with Richardsons Line and the Kairanga – Bunnythorpe Road. At the time of preparing this report, these issues were being examined by Palmerston North CC.

Funding

It is stressed that the identification of the measures above does not indicate a willingness by Foodstuffs to fund the necessary works. The Councils involved have recognised the need for infrastructural upgrades in this area to service this and potential further development, and hence an apportionment of costs between the parties involved will be appropriate. This will be the subject of negotiation outside of the consent application process.

Traffic Management Plan

A Traffic Management Plan (TMP) has been agreed with Palmerston North CC which provides assurances that appropriate routes will be available for truck movements associated with the warehouse facility both before and after the completion of the strategic ring route around the city. This has been reproduced as **Appendix C**.

3.5 Pedestrian, Cycle and Bus Movements

Some employees or visitors may be dropped off by drivers who do not wish to enter the site. Pedestrian access to the site will be adjacent to the staff/visitor vehicular entrance and a footpath will connect this point to the main building entry, with a marked crossing of the staff vehicle access road.

Cycling by staff members will be actively encouraged with the provision of cycle parking facilities adjacent to the main staff car-parking area.

Horizons Manawatu has advised that there are no public bus services which service the adjacent sections of Railway Road or Roberts Line. The dispersed nature of existing and likely future employee residential locations means that the provision of a bus service by Foodstuffs itself is unlikely to offer an efficient solution for staff travel. For these reasons, no specific provision has been made for a bus-stop on the site boundary. However, this does not preclude such provision in the future should this prove to be warranted.

3.6 Emergency Vehicle Access

The Fire Service has been consulted during the design process for the site, and has requested that two points of emergency vehicular access be provided. The first would utilise the proposed truck entry points, with access available from the main truck servicing area through to the staff car park where water tanks will be located.

The second point of access would be on the western side of the site from the Richardsons Line frontage and would provide access to the rear of the building. This access would be around 15m deep and 7.5m wide, and located 180m from the Roberts Line intersection. This would only be used in the event of an emergency or a training exercise.

4 Impacts of the Proposed Development

4.1 Introduction

Development of the type and scale proposed has to some extent been anticipated in plans for this part of Palmerston North. Planned improvements to the roading network in this area (described in **Section 3**) have been designed with the intent of minimising the potential for any adverse effects associated with additional vehicle movements upon existing road users or established communities.

It is important to note that the proposed facility will improve the efficiency of the distribution function for Foodstuffs, resulting in an overall reduction in truck distances travelled throughout the lower North Island. This will include some reductions in truck and staff movements on roads in the vicinity of the existing Kaimanawa Street facility.

However, the focus of this assessment is upon the more immediate vicinity of the proposed warehouse facility, where there is a *potential* to create impacts upon the efficiency of traffic movement in this area, and the safety and sustainability of the transportation network. This section assesses these potential impacts for each of these areas.

4.2 Efficiency

Traffic Generation & Distribution – Truck Movements

As indicated in **Section 3**, it is expected that around 350 truck movements/day will typically take place, with 90% of these between 7am and 10pm. On this basis, it can be expected that an average of 12 trucks will enter and leave the site each hour. Whilst the scheduling of trucks will avoid any significant peaks in activity levels, the arrival and departure of 15 trucks/hour has been assumed for assessment purposes.

The distribution of these truck movements by route has been estimated from schedules supplied by Foodstuffs for its own vehicle fleet, and by assuming a similar general distribution of suppliers' vehicles. The proposed distribution warehouse will not provide facilities for the servicing, cleaning or re-fuelling of the Foodstuffs vehicle fleet. Instead, these activities will take place off-site, most likely at a location in the northern Palmerston North urban area. As a result, many of the Foodstuffs vehicles will route to/from the servicing facility after or before visiting the warehouse. This is reflected in the expected distribution of truck movements by direction shown by **Table 4.1**.

It is stressed that unless heavy vehicle prohibitions or restrictions are placed upon specific routes (for example, Roberts Line south of Railway Road), the use of the routes above would be reliant upon decisions made by individual truck drivers. In this regard, whilst Foodstuffs has identified those routes it would expect truck drivers to use (refer **Appendix C**), it could not guarantee compliance, especially for those vehicles associated with external suppliers.

As described in **Section 3**, controls upon truck processing will ensure that there is no necessity for trucks to wait on the external road network in the vicinity of the site.

Origin / Destination	Route (outwards from site)	Vehicles/Day [vehicles/hour max]		
		In	Out	2Way
North (SH3 Wanganui, Taranaki, etc)	Refer to Agreed Traffic Management Plan (Appendix C)	84 [7]	32 [3]	116 [10]
East (via Manawatu Gorge: Hawke's Bay, Wairarapa)		10 [1]	22 [2]	32 [3]
South (Horowhenua, Wellington)		15 [1]	56 [5]	71 [6]
Palmerston North City		66 [6]	65 [5]	131 [11]
TOTAL		175 [15]	175 [15]	350 [30]

Table 4.1: Estimated Distribution of Truck Movements

* if Roberts Line (north) were improved to accommodate truck movements, these trucks would not be required to pass through Bunnythorpe

Traffic Generation & Distribution – Light Vehicle Movements

Main vehicular activity will be associated with the arrival and departure of the shift and office workers. A number of employees will not bring their own vehicle, either sharing a vehicle with a colleague, getting dropped off, or cycling. Based upon a conservative assumption that 90% of employees bring their own vehicle, then the main arrival or departure patterns will be as summarised in **Table 4.2**. In addition, a small number of vehicle movements will occur throughout the day associated with visitors.

Event	Time Period	Vehicle Movements in Period		
		Inbound	Outbound	2-Way
AM Warehouse Shift Arrival	05:30 – 06:00	144	-	144
Office Worker Arrival	07:30 – 08:00	36	-	36
PM Warehouse Shift Arrival	13:30 – 14:00	144	-	144
AM Warehouse Shift Depart	14:00 – 14:30	-	144	144
Office Worker Departure	17:00 – 17:30	-	36	36
PM Warehouse Shift Depart	22:00 – 22:30	-	144	144

Table 4.2: Expected Light Vehicle Movements

The main movements of staff vehicles associated with shift start and finish times will not coincide with either the movement of office-based staff or peaks in background traffic volumes on the adjacent road network (which occur during the traditional commuting hours, as described in **Section 2.3**).

Based upon the existing distribution of Foodstuffs employees' home locations, adjusted to reflect the new site, the following distribution of staff vehicle movements has been assumed;

- Railway Road (south) 60%
- Roberts Line (south-east) 20%
- Roberts Line (north-west) 10%

- Railway Road (north) 10%.

Capacity Impacts – Road Sections

Peak directional traffic volumes using Railway Road are currently slightly below 400 vehicles/hour. As indicated in **Section 2**, existing volumes are well within the capacity of the road network and hence congestion does not occur.

As described above, the only vehicle movements which would coincide with the existing peaks in activity would be the office based staff, amounting to around 36 vehicle movements, most of which would be travelling in the counter-peak flow direction.

Trucks moving to and from the site would have an impact upon capacity disproportionate to their number, due to their size and relatively slow manoeuvring. Despite this, the movement of trucks on Roberts Line, Richardsons Line and Railway Road can be accommodated without any significant impairment of operating conditions for existing road users.

Capacity Impacts – Intersections

The site access and egress arrangements, for both truck and light vehicles, have been designed to facilitate the efficient movement of vehicles. The provision of a right-turn bay for trucks entering the site from Roberts Line (north-west) will ensure that the movement of other vehicles is not impeded. Similarly, trucks approaching from Roberts Line (south-east) will pull over into a deceleration lane prior to turning into the site. Both of these lanes will be of sufficient length to ensure that trucks will not block through carriageways. The possibility of several trucks approaching or leaving the site at once will be removed by the use of the proposed scheduling system with the allocation of a 15 minute time slot to each truck.

The computer programme SIDRA has been used to simulate the effects of additional vehicular activity upon the Railway Road / Roberts Line intersection. The assessment has been undertaken for a notional period 2-2.30pm when the morning warehouse shift is departing and truck movements are taking place. Existing background traffic volumes were increased by 27% to reflect conditions in the year 2015 with 3% pa growth in the intervening period.

Results are summarised at **Appendix D**. These demonstrate that there would be no degradation of the Level of Service (LOS) on Railway Road. Average delays of around 20 seconds and a queue length of up to 6 vehicles would be experienced on the Roberts Line (NW) approach, though these conditions would be short-lived for the period of the shift departure. If necessary, this could be alleviated by widening this approach to provide separate lanes for left/ahead and right turning movements.

A SIDRA assessment for the Railway Road / Richardsons Line intersection was not considered to be warranted. This intersection currently carries very low turning volumes and delays are minimal. The addition of up to 10 truck movements / hour between the Richardsons Line and Railway Road (north) approaches will not have any appreciable impact upon delays to through vehicle movements, especially with the provision of a lane for movements turning right into Richardsons Line.

Net Effects

As indicated above, it should be noted that some of the vehicle movements associated with the operation of the distribution warehouse will effectively replace existing staff or truck movements which are associated with the Kaimanawa Street facility. Whilst the balance of vehicle movements cannot be accurately determined, the *net effect* of the proposal will be to remove vehicle movements from the more congested parts of the Palmerston North street network, and total truck distances travelled throughout the lower North Island will be reduced.

Remote Impacts

With a number of route options available in the immediate vicinity of the site, delivery and staff vehicle movements will dissipate rapidly.

Table 4.1 suggests that around 130 truck movements/day would use Railway Road to/from the Palmerston North urban area. These trucks would have a range of origins or destinations within the urban area and hence would be likely to divide between Tremaine Avenue and Kelvin Grove Road at their intersection with Railway Avenue. Furthermore, the *net effect* of these movements upon the road network in this area will be small (when allowance is made for the closure of the Kaimanawa Street facility).

Without the upgrading of Roberts Line (between Richardsons Line and the Kairanga – Bunnythorpe Road) to accommodate truck movements, around 150 trucks/day could route through Bunnythorpe. This would be a short-term impact, which would be subsequently alleviated by either the upgrading of Roberts Line or the construction of one of the options for the Palmerston North ring road route to the east of the city.

The proposed warehouse is located some distance from the state highway network. Whilst trucks will utilise parts of SH54, SH3 and SH56, the impacts on these routes will be small, particularly when net effects are considered (as described above). For this reason, and also because no direct or indirect accesses onto the state network are required, Transit NZ is not considered to be materially affected by the proposal.

4.3 Safety

Vehicular Access – Truck Movements

The proposals for the widening of Roberts Line and the provision of lanes for trucks turning both left and right into the site will minimise the risk of any conflicts between truck and other vehicle movements in the area.

The set-back of the truck entry barrier will ensure that a stationary truck will not block the carriageway on Roberts Line. The use of a one-way (clockwise) circulation system for truck movements, combined with the scheduling system and generous working areas around each truck will ensure that safety will be maintained within the site.

Trucks exiting onto Roberts Line will do so from a point around 130m from the Railway Road intersection. Visibility standards are good in this area, providing sight-distances of 130m to the east and over 300m to the west. Whilst Roberts Line is subject to a 100 kms/hr speed restriction, the speed of vehicles approaching from the right at this point is effectively constrained by the intersection, to a maximum of 60kms/hr (for a vehicle turning

left from Railway Road south). A vehicle travelling at this speed would require 63m in which to stop (for example, in response to a truck which was blocking the road). Accordingly, the separation distance from the intersection is sufficient to ensure that the risk of a collision is minimal.

Vehicular Access – Staff / Visitor Movements

Staff/visitor vehicles will exit onto Roberts Line at a point around 80m from the Railway Road intersection. As indicated above, vehicles approaching from the east do so at a maximum speed of 60kms/hr, requiring 63m in which to stop. The separation distance from the intersection is therefore sufficient to minimise the risk of a collision.

Pedestrian & Cycle Movement

The semi-rural location of the proposed facility means that pedestrian movements outside of the site are not expected to occur, other than those associated with staff or visitors being dropped off or collected.

A pedestrian route between the staff/visitor vehicular entrance and the main building will minimise the risk of any pedestrian / vehicle conflicts within the site.

Cycles will use the same routes as staff / visitor vehicles to enter and leave the site; the provision of separate facilities is not warranted. Cycle parking facilities will be provided adjacent to the main entry to the building.

4.4 Parking

Given the location of the site and the lack of any kerbside parking on adjacent roads, it is important that the site is self-sufficient with respect to parking. The proposal will provide 378 parking spaces in total, of which 324 will be in the staff parking area.

The best estimates of the maximum number of staff on the site at any one time is 360. This will occur at the shift change-over at 2pm, when two shifts of 160 staff plus 40 office-based staff will be on the site. Some staff would share vehicles whilst others may cycle, and hence the maximum staff parking demand is likely to be around 320 – 330 spaces.

The provision of 54 spaces for use by visitors will accommodate most visitor requirements. Occasional exceptions may occur when conferences are taking place. Such conferences may have up to 80 attendees, though some will share vehicles or arrive by air / taxi and not require parking.

For these reasons, self-sufficiency in parking will be ensured.

Parking areas will include the provision of permanently marked and reserved spaces for disabled visitors (four spaces) and staff (five spaces).

The staff and visitor parking and circulation areas will meet the geometric requirements of the District Plan, which in turn are set to ensure safety and convenience of use.

4.5 Sustainability

This assessment has assumed the maximum size of warehousing facility envisaged on the site (which may not occur for around 10 years) and associated levels of truck and staff vehicle movements. The scale of warehousing activity is effectively constrained by the size of the site and there would be no scope for either extending the site or intensifying the activity in the future.

Over the longer term, traffic volumes in this area are expected to grow by around 2-3% per annum. Given that existing peak period traffic volumes are well within the capacity of the roads in this area, it will be many years before traffic volumes will grow to the point at which significant capacity problems are apparent. Whilst the operation of this warehousing facility will, in theory, bring this point in time forward, the incremental impact of the facility upon the ability of the road network to serve its intended function will be small.

4.6 Construction & Operational Traffic Management Plans

Construction

The construction of the distribution warehouse will give rise to a significant number of vehicle movements. At this stage, details of the construction sequencing and associated vehicle movements have not been identified. It is proposed that at the appropriate time, a construction traffic management plan will be developed and agreed with the Councils involved. This will address matters such as the movement of trucks to/from the site, the routing and timing of exceptional loads, measures to avoid any transfer of mud onto adjacent roads, etc.

Operation

An operational traffic management plan for the normal operation of the site is also proposed. This will address matters relating to the movement and control of staff and truck movements to/from the site, and emergency vehicle access. If appropriate, this may include provision for the monitoring of traffic movements in terms of volume, routes and impacts. Again, this document will be developed and agreed in consultation with the Councils involved.

4.7 Impacts – Conclusion

The preceding discussion has identified that the proposed distribution warehouse will not be detrimental to the operation of the road network in this area.

The establishment of the North-East Industrial zone by Palmerston North CC anticipates this type of the development and the associated traffic impacts. In this respect, this represents the ideal location for such an activity, in terms of traffic accessibility and an expectation of truck movements. Location elsewhere within the city area would be likely to have given rise to significant impacts upon either the residential street network or the strategic State Highway network.

5 Statutory Context

5.1 Palmerston North City District Plan

The relevant plan is the Palmerston North City District Plan⁵, which became operative in December 2000, and was last updated on 5th May 2006.

The application site is located in the 'North East Industrial' zone. The roading hierarchy defined by the District Plan classifies Roberts Line and Richardsons Line as 'Local Routes', and Railway Road a 'Principal' route.

Objectives, policies and rules relevant to the traffic assessment are those which relate specifically to the NE Industrial zone and also those which relate to traffic, access and parking matters across the city in general. These are considered below, for the full (Phase 2) development. Compliance issues for the intermediate Phase 1 development are addressed in Section 5.4.

5.2 Objectives, Policies & Rules: North East Industrial Zone

Objectives & Policies

Objective 12A.2: To enable industrial use and development of the Zone taking into account topography, any existing site features, natural hazards, the servicing needs of future industry and the ability for people and vehicles to move safely and efficiently through the area.

Policy	Response
2.1: To ensure that the design, layout and servicing of the Zone is, as far as reasonably practicable, in accordance with key design principles outlined in the Design Guide.	<i>Given the location and a requirement to orientate the warehouse to the NE, servicing arrangements are as far as reasonably practicable in accordance with the Design Guide</i>
2.2: To ensure that subdivision, use and development in the Zone generally follows the layout shown on the Structure Plan, particularly in regard to road access points.	<i>Road access from the Roberts Line frontage is in accordance with the Structure Plan intentions</i>
2.4: To provide opportunities for pedestrians, cyclists and vehicles, while ensuring that conflict with industrial traffic is minimised.	<i>Pedestrian and cycle movements are not expected to be significant, but will not be precluded by the design of the proposal.</i>
2.5: To ensure that additional traffic does not put pressure on the safe and efficient operation of the roading network.	<i>Impact assessment has demonstrated that additional vehicle movements in this area can be satisfactorily accommodated without detrimental impacts upon existing road users.</i>

⁵ Palmerston North City District Plan. Palmerston North City Council, March 2005 (updated May 2006).

Policy	Response
2.7: To provide for the efficient movement of vehicles and in particular the access requirements of emergency service vehicles.	<i>The efficiency of all vehicle movements will be ensured. Access requirements for emergency vehicles have been accommodated.</i>

Objective 12A.5: To avoid, remedy or mitigate adverse environmental effects on the amenity of the North East Industrial Zone and areas at the interface with the Zone.

Policy	Response
5.4: To ensure that road access to the NE Industrial sites is provided from Railway Road or Roberts Line and is in general accordance with the Structure Plan.	<i>Road access is proposed from Roberts Line.</i>

Rules

Rule	Response
R12A.10.2: Any activity having an access from Richardsons Line is to be regarded as a Non-Complying Activity.	<i>The <u>intent</u> of this rule is to avoid the use of this route by heavy industrial traffic and hence protect the rural amenity of the area. Whilst the (full) proposal includes an access on this frontage, this is required for emergency purposes only and would be rarely used. Accordingly, the proposal is regarded as being compliant with this rule. The proposal does not meet Permitted or Controlled Activity performance conditions with respect to height and building size and hence is assessed as a Discretionary (Restricted) activity.</i>
R12A.7.1(a): Buildings are to be setback 30m from Richardsons Line, 8m from Roberts Line and 8m from Railway Road, with the provision of a buffer area between the road/site boundary and the specified setback distance.	<i>All setback requirements are met, with the provision of landscaped buffer areas as required.</i>
R12A.6.1(v): Parking, loading and access matters – compliance with the general transportation rules is required.	<i>Refer Section 5.3.</i>

5.3 Objectives, Policies & Rules: General Transportation

Objective 20.1: To maintain and enhance the safe and efficient functioning of the roading network.

Objective 20.2: To protect the roading network ... from the potential adverse effects of all land use activities.

Policy	Response
2.1: To ensure safe and efficient vehicle access is provided to and from activities.	<i>Impact assessment has demonstrated that vehicle access arrangements will be both safe and efficient.</i>
2.2: To ensure safe and efficient loading facilities are provided to service activities.	<i>All loading activity will take place well off the road reserve using facilities specifically designed for this purpose.</i>
2.3: To ensure safe and efficient parking and manoeuvring spaces is provided for all activities.	<i>Space for vehicle parking and manoeuvring will meet or exceed the requirements of AS2890.1 and AS2890.2 which ensure safety and efficiency.</i>

Objective 20.3: To avoid, remedy or mitigate the effects of roads and vehicles on the amenity values of the City.

Policy	Response
3.1: To restrict the movement of through traffic where the movement has adverse visual, noise and safety effects on adjoining streets.	<i>Proposed truck routing arrangements will generally avoid use of residential areas and existing congestion in Tremaine Ave area.</i>
3.2: To avoid, remedy or mitigate the impact of roads and parking areas on visual amenity values of the community by the provision of landscaping.	<i>Appropriate landscaping will be used to screen parking and other areas.</i>

Objective 20.4: To maintain and enhance the use of public transport, walking and cycling as alternative modes to the private motor vehicle.

Policy	Response
4.1: To support and encourage the use of public transport, walking and cycling as an integral part of the transportation system with special provisions made for them as appropriate.	<i>The location and type of activity proposed means that walking and cycling activity is not expected to be significant. However, cycle parking facilities will be provided. The site layout does not preclude provision of a bus stop should such a service prove to be warranted in the future.</i>

Rules

Section 20 (Transportation) of the District Plan identifies rules relating to the transportation aspects of development proposals. The District Plan rules are the means of implementing the policies and ensuring that new developments will not have a detrimental impact upon the safety or efficiency of the roading network.

Compliance of the proposed development with the relevant District Plan rules is addressed in the tabulations which follow.

Rule	Response
R20.3.5.2 Roading Designations. No developments involving permanent structures or building shall be permitted on any land designated for proposed road widening or the establishment of roads.	<i>Compliant: land is not subject to any designations for roading projects.</i>
R20.3.7.1 Parking Spaces for People with Disabilities. Where on-site parking is provided, or is to be provided for all buildings and activities except dwellings, parking spaces for the disabled will be provided as follows; (a) Number: one for up to 10 spaces, two for 10-50 spaces and one for every additional 50 spaces (b) Location: accessible car parking spaces shall connect to an accessible route and the closest building entrance or lift (c) Identification: accessible parking spaces shall have clear ground marking in accordance with the international symbol of access.	(a) <i>Staff Parking : not compliant. 5 staff disabled parking spaces to be provided within a total of 324 spaces. Whilst Foodstuffs is fully committed to the provision of appropriate facilities for the disabled, experience from existing sites and the nature of the warehouse work environment means that the provision of the 8 disabled staff spaces would be excessive and unnecessary. Visitor Parking: compliant. For the visitor parking area, 4 disabled parking spaces would be provided within a total of 54 spaces.</i> (b) <i>Location: compliant. All disabled spaces will be conveniently located close to the building entrance.</i> (c) <i>Identification: compliant. All disabled spaces will be clearly marked.</i>
R20.3.7.2 Parking Provision Standards. Parking provision is to be made on-site in accordance with the following standards; • offices – 3.5 spaces / 100m ² gfa • building or land used for storage, warehousing or distribution – 1.5 spaces / 100m ² gfa	<i>Not Compliant. Based upon 2,490m² office and 57,323m² warehousing, a total of 947 parking spaces would be required, against 378 proposed. Based upon known staff numbers, the DP requirement is well in excess of actual demands. NOTE. The DP parking requirements have been reviewed, with a recommendation that the office requirement be reduced to 3.0 spaces/100m² gfa and the warehousing requirement be reduced to 1.0 spaces/100m² for the first 3,000m² and 0.5 spaces/100m² for each additional 100m². This would significantly reduce the DP requirement to 377 spaces. This more accurately reflects the parking requirements associated with bulk warehouse facilities and would result in the proposal being <u>compliant</u>. This forms the basis of proposed Plan Change 23 which was subject to a hearing in August 2006.</i>
R20.3.7.3 Policies for Assessments of Proposals not meeting Parking Standards (b) Car Parking Spaces and Financial Contribution Waiver Policy. The Council may grant a resource consent without the provision of car parking or the payment of cash in lieu,	<i>The proposed parking provision only fails to meet the <u>existing</u> parking standard, and is compliant with the <u>proposed</u> standard which better reflects the parking requirements of large warehouse operations. This assessment has demonstrated that the level of parking provision is appropriate for the proposed use and there is no risk of 'spill-over'</i>

Rule	Response
if it can be demonstrated that the total parking demand of a proposed development is less than that required by the parking standard and that the design of the development is so specific that it cannot be used for any other purpose	<i>parking onto the external road network. Furthermore, security controls would prevent the use of this parking resource for any other purpose</i>
R20.3.7.6 Car Park Landscape Design Any car parking area shall include the following landscape features; (a) any part of a car parking area (excluding access points) fronting to a road shall feature one specimen tree capable to growing to 5m within 10 years along every 10m of car parking frontage (b) trees planted to meet the requirements above shall be so planted as to separate car parking activities from pedestrian activities on the street (c) any tree planted on a frontage shall be planted in an area with a minimum width of 2m and with a total area per tree of not less than 4m ²	<i>Proposals are the subject of a separate landscaping design which has addressed these requirements</i>
R20.3.7.7 Formation of Parking Spaces External parking spaces are to be constructed to meet the following standards; (a) vehicle circulation routes with a car-parking area must have; • circulation routes of 3.5m width (1-way) and 6.5m (2-way), increased by 800m where there are pedestrian movements unless a separate footpath is provided • turning circles to comply with Fig 20.1 (b) any queuing space shall be sufficient to permit a free-flow of traffic from the road into the car parking area (c) all spaces to comply with the dimensions and construction requirements of Fig 20.2 (d) a formed, permanent, dust-free	<i>Parking spaces will meet all of the geometric requirements of the Plan. All spaces will be permanently marked on a sealed, drained and level surface.</i>

Rule	Response
<p>surface with drainage and marking of spaces</p> <p>(e) additional clearances for any blind aisles</p> <p>(f) an additional 300mm for any spaces adjoining a wall or column</p> <p>(g) gradient no more than 1:40 (disabled), 1:20 (parallel) or 1:16 (900)</p>	
<p>R20.3.8.1 Loading Space Standards</p> <p>(a) any business or industry activity must provide a loading space constructed to a defined standard</p> <p>(b) no loading arrangement shall be permitted where vehicles project onto the road reserve while loading or are required to reverse onto or off an arterial road or principal road.</p>	<p>(a) <i>the nature of the proposed activity means that loading bays will be provided which exceed the defined standards</i></p> <p>(b) <i>all loading activity will take place off the road reserve.</i></p>
<p>R20.3.9.1 Access Standards</p> <p>(d)(iii) (for sites located in an Industrial Zone)</p> <p>(a) where the site has frontage to one road, one two-way crossing, of not more than 8m in width shall be provided</p> <p>(b) where a site has frontage to more than one road, one crossing of not more than 8m in width may be provided to each road. The minimum is one two-way crossing of not more than 8m in width to one road</p> <p>(c) where a site has a frontage length of >30m to a road, it may have two crossings or not more than 8m wide each to that road. As a minimum, one two-way crossing of not more than 8m in width shall be provided to the road</p> <p>(d) no vehicle crossing shall be located <20m from an intersection</p> <p>(e) the minimum distance between access crossings and an intersection with a Principal Road should be 50m.</p>	<p><i>The site has frontages to Railway Road (75m), Roberts Line (448m) and Richardsons Line (197m).</i></p> <p><i>Three accesses on Roberts Line are proposed for the normal operation of the site;</i></p> <ul style="list-style-type: none"> <i>a 10m wide truck entry</i> <i>a 10m wide truck exit</i> <i>an 8m wide 2-way staff/visitor entry/exit.</i> <p><i>None of the vehicle crossings will be located less than 20m from an intersection, or less than 50m from the Railway Road intersection.</i></p>

5.4 Compliance Issues – Phase 1 Development

The Phase 1 development would involve the same provision of visitor parking spaces (54, of which 4 would be reserved for disabled users), but only 224 staff spaces (of which 5 would be reserved for disabled users), a total of 278 spaces.

Based upon the Phase 1 floor area, a total of 591 parking spaces would be required under the existing District Plan rules and 258 under the proposed rules.

Whilst the Phase 1 proposal would be compliant with respect to the total number of parking spaces, the number of disability spaces within the staff parking area would fall marginally below the requirement of 6 spaces.

It is expected that the maximum number of staff on-site at any one time for the Phase 1 warehouse would be 220, and hence the parking proposed will adequately meet the resulting demand.

5.5 Regional Land Transport Strategy

The Regional Land Transport Strategy⁶ (RLTS) provides general policy with regard to transportation matters across the wider Manawatu - Wanganui region.

This document sets out broader objectives at the regional level. Six key objectives arise from the longer term vision for transportation in the region:

- the safest possible transport system;
- a roading network that will meet present and future needs;
- freight moved by the most efficient means;
- public transport services that cater for those with limited private transport options;
- a land transport system that minimises adverse effects on the environment; and
- an administration system which allows the land transport needs of the region to be met.

The proposed distribution warehouse facility and associated vehicle movements would not be contrary to any of these objectives.

5.6 Compliance – Conclusions

The only area of non-compliance with the District Plan rules relates to parking provision, the provision of disabled parking spaces in the staff parking area, and the creation of an emergency access onto Richardsons Line.

With regard to parking, the non-compliance arises from District Plan standards that are inappropriate for warehouse facilities of this type. This has been acknowledged by the Council with a proposed plan change which would lower the requirement and ensure compliance.

⁶ Regional Land Transport Strategy. *Horizons Manawatu, June 2000.*

As indicated above, the number of staff disability spaces required by the District Plan exceeds the reasonable demand for such spaces by the warehouse workforce.

In all cases, these non-compliances are of a minor nature and there will be no detrimental effects associated with them.

With regard to Richardsons Line, the proposed emergency vehicle access would be rarely used and hence the impacts of its provision would be negligible.

This assessment has demonstrated that the proposal is compliant with the intent of the District Plan rules, and with all of the objectives and policies of both the District Plan and the Regional Land Transport Strategy.

6 Conclusions

The Foodstuffs (Wellington) Co-operative Society Ltd (Foodstuffs) proposes to construct a distribution warehouse facility on land adjacent to Roberts Line, on the north-eastern edge of Palmerston North.

The facility will improve the efficiency of the distribution function for Foodstuffs, resulting in an overall reduction in truck distances travelled throughout the lower North Island.

However, within the more immediate vicinity of the site, the facility will give rise to a significant number of vehicle movements associated with trucks, staff and visitors. The internal design of the facility has been developed to ensure that all such movements can be accommodated both safely and efficiently. Appropriate improvements to the external road network in the vicinity of the site have also been identified which will ensure that these vehicle movements will take place with minimal impacts upon existing users of the road network in this area.

This document reports a review of the transportation impacts of the distribution warehouse proposal. This considers in detail the movement of all vehicles associated with the activity, and also addresses the likely demands for pedestrian, cycle and bus movements. The proposal has also been assessed against the relevant requirements of the Palmerston North District Plan.

This assessment concludes that:

- whilst the activity will give rise to a significant number of staff and delivery vehicle movements, these will mostly take place outside of the traditional peak periods;
- this, together with the good accessibility offered by the site, and a package of external roading improvements agreed with the Palmerston North City and Manawatu District Councils, means that impacts upon the functioning of the road network in the immediate vicinity of the site will be minor;
- the location of the site will allow many truck movements to avoid the Palmerston North urban area;
- the site is relatively remote from the state highway network and net effects upon this network will be negligible;
- the internal and external configuration of the site will ensure that all vehicle and pedestrian movements can be made safely;
- the proposals are compliant with the objectives, policies and intentions of the District Plan and areas of non-compliance are of a minor nature with no adverse effects;
- the activity will be self-sufficient with regard to parking with the provision of 377 staff/visitor parking spaces; non-compliance with the existing District Plan rules arises because these rules are not appropriate for large warehouses of this type. This has been recognised by the Council with a proposed plan change which would ensure compliance; and
- the overall impacts of the proposal upon the safe, efficient and sustainable operation of the road network in this area will be no more than minor.

The proposed Foodstuffs distribution warehouse is an appropriate use of this site. This offers a high level of vehicular accessibility, close proximity to the Palmerston North urban area and a site which would be fully self-sufficient in parking.

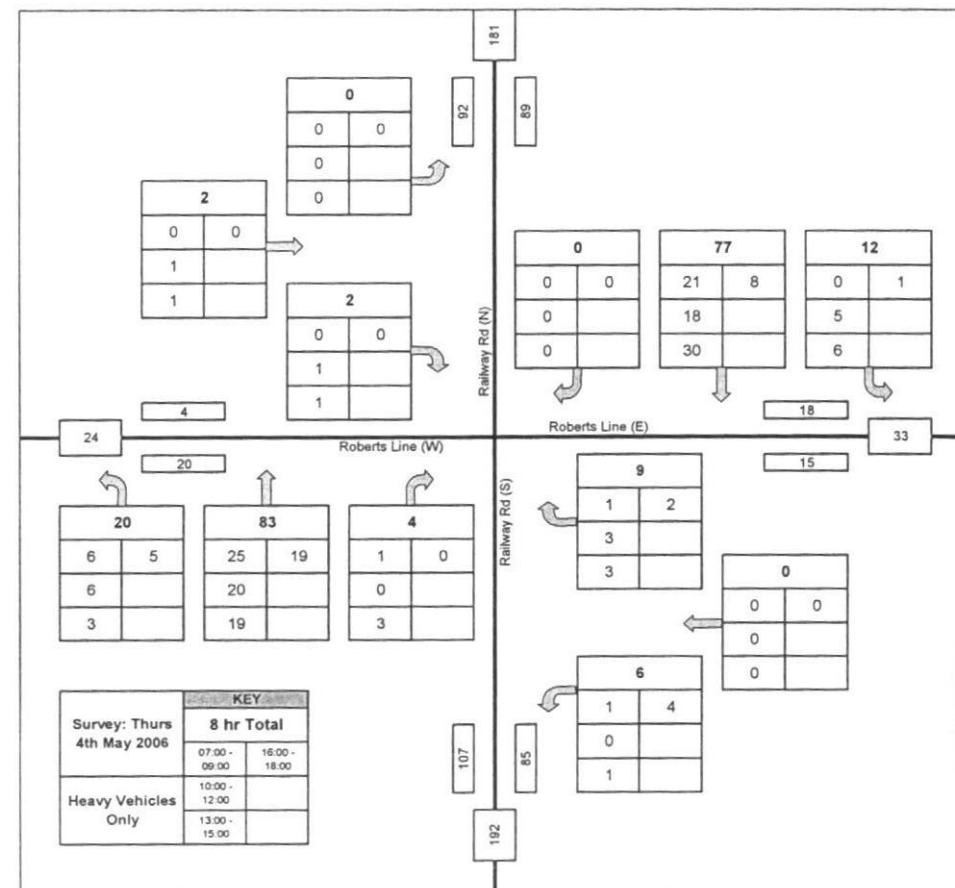
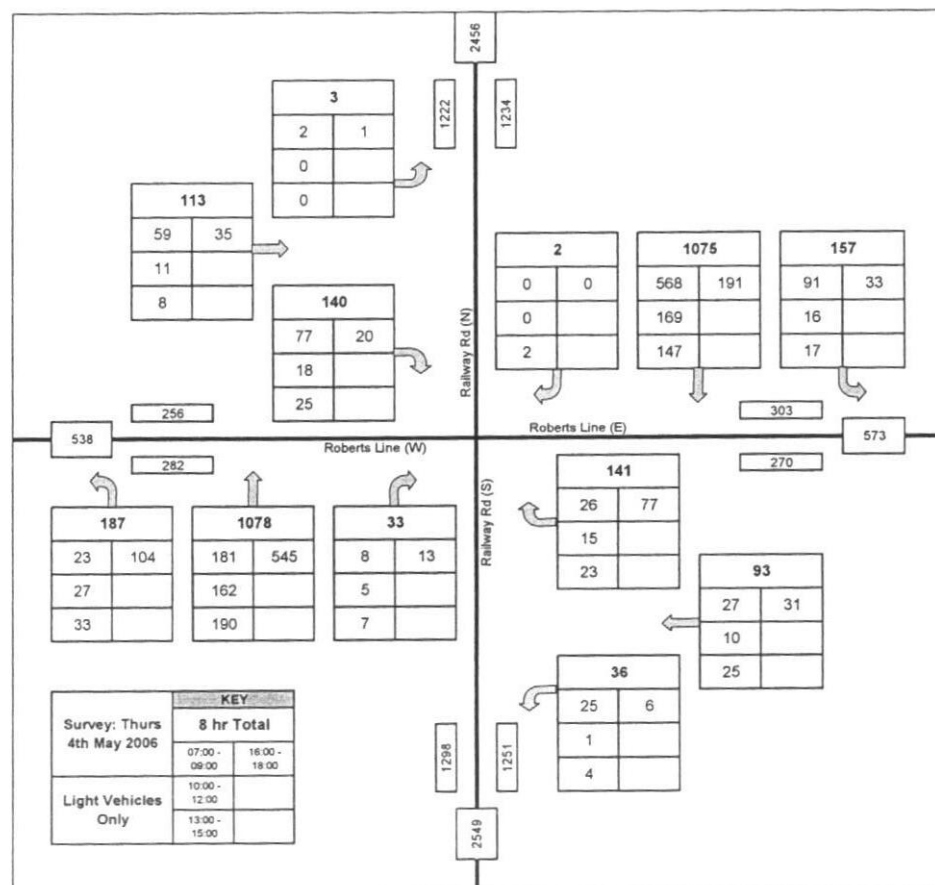
On the basis of the traffic-related issues which this assessment has addressed, there do not appear to be any reasonable grounds for declining consent for this development proposal.

APPENDIX A: RECORDED TRAFFIC COUNTS

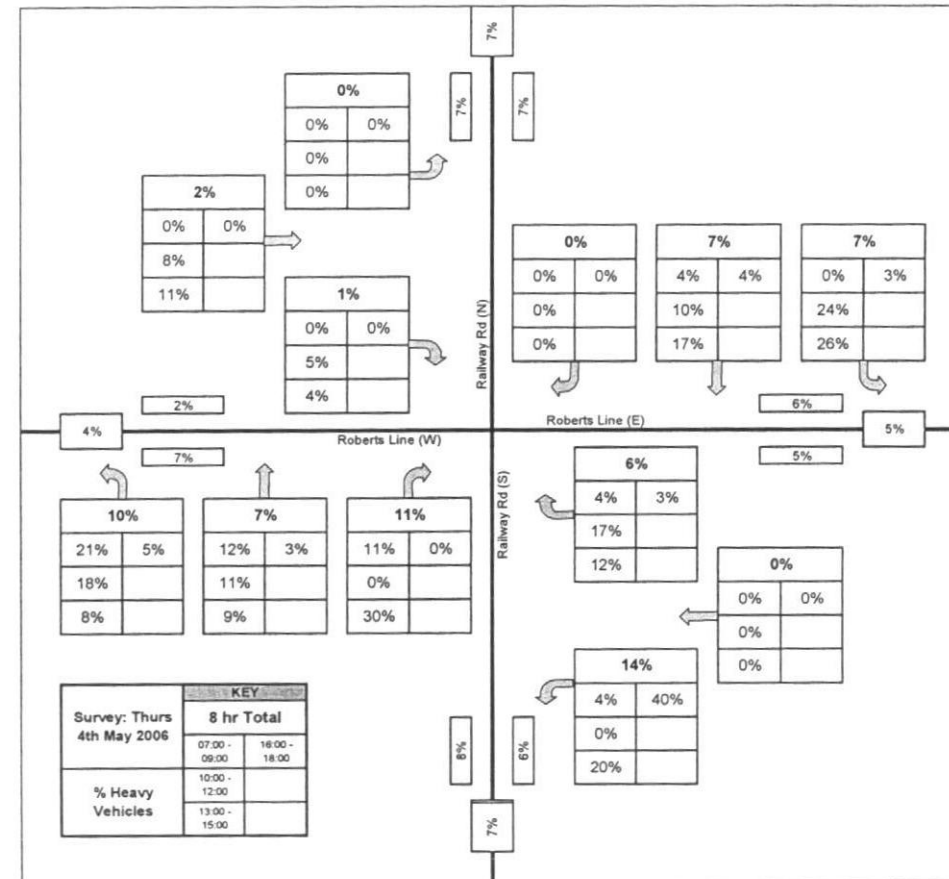
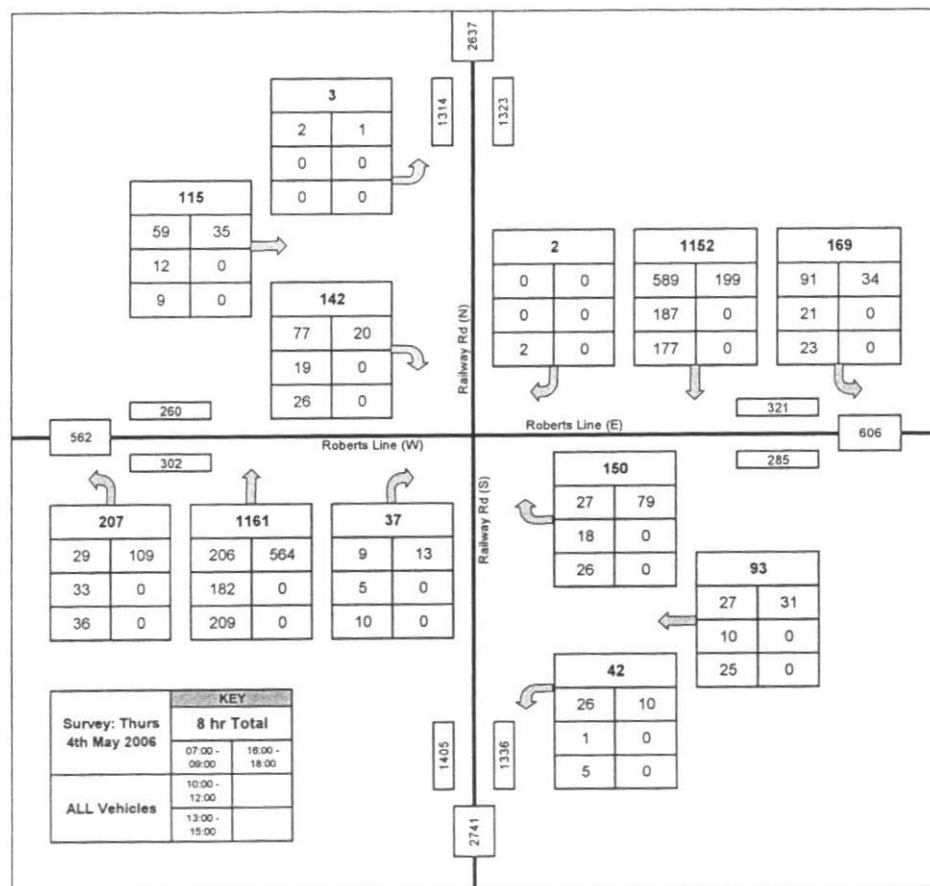
Railway Road / Roberts Line Intersection

Surveyed Thursday 4th May 2006.

Foodstuffs Distribution Centre, Palmerston North: Assessment of Traffic Impacts



Foodstuffs Distribution Centre, Palmerston North: Assessment of Traffic Impacts



APPENDIX B: CRASH RECORDS

Road	Dist	Dir	Side Rd	ID	Date	Description	Causes	Fat	Sev	Min
RAILWAY ROAD		I	RICHARDSONS LINE	2452887	25/05/2004	load or trailer from TRUCK1 NBD on RAILWAY ROAD hit CAR2 TRUCK1 hit Obj thrown/dropped	TRUCK1 load not well secured or moved	0	0	0
RAILWAY ROAD	100	N	ROBERTS LINE NORTH	2452746	30/06/2004	CAR1 SBD on RAILWAY ROAD lost control; went off road to left, CAR1 hit Cliff Bank, Ditch	CAR1 lost control on unsealed road, steering failed suddenly	0	0	0
RAILWAY ROAD	100	N	ROBERTS LINE NORTH	2551951	29/04/2005	CAR1 NBD on RAILWAY ROAD lost control; went off road to right	CAR1 lost control due to road conditions ENV: road surface under construction or maintenance	0	0	0
RAILWAY ROAD		I	ROBERTS LINE NORTH	2012392	18/09/2000	CAR1 SBD on RAILWAY ROAD hit CAR2 crossing at right angle from right	CAR2 failed to give way at give way sign, misjudged speed etc of vehicle coming from another dirn with right of way	0	0	1
RAILWAY ROAD		I	ROBERTS LINE NORTH	2111572	27/03/2001	CAR1 EBD on ROBERTS LINE NORTH hit CAR2 crossing at right angle from right	CAR1 failed to give way at give way sign	0	0	1
RAILWAY ROAD		I	ROBERTS LINE NORTH	2354305	23/09/2003	CAR1 NBD on ROBERTS LINE NORTH hit CAR2 crossing at right angle from right	CAR1 failed to give way at give way sign, didnt see/look when required to give way to traffic from another direction	0	0	0
RAILWAY ROAD		I	ROBERTS LINE NORTH	2412637	3/08/2004	CAR1 WBD on ROBERTS LINE NORTH hit CAR2 crossing at right angle from right	CAR1 too fast to give way at intersection, lost control under heavy braking, failed to give way at stop sign	0	1	1
ROBERTS LINE NORTH		I	ROBERTS LINE	2011362	17/03/2000	CAR1 WBD on ROBERTS LINE hit CAR2 crossing at right angle from right	CAR1 failed to give way at give way sign	0	0	3

APPENDIX C: AGREED TRAFFIC MANAGEMENT PLAN

Context

Foodstuffs proposes to construct and operate a major distribution centre on land adjacent to Roberts Line and Railway Road in Palmerston North.

A key factor in the selection of this site was accessibility to the strategic road network, allowing truck movements to be made efficiently without a necessity to route through congested parts of the urban area.

However, the operation of the distribution warehouse will precede the completion of a strategic ring route around the city. Furthermore, the location of the site immediately adjacent to Manawatu District requires the co-operation of this Council to the provision of access routes, which has not been forthcoming to date.

The purpose of this Traffic Management Plan (TMP) is therefore to confirm the availability of appropriate routes for truck movements for the period prior to the completion of the strategic ring route, which are mutually acceptable to Palmerston North CC and Foodstuffs.

Truck Movements

It is expected that around 350 truck movements/day will be associated with the proposed distribution warehouse facility, with at least 80% of these between 7am and 10pm.

These movements comprise Foodstuffs' own (or contracted) vehicle fleet which distribute goods to supermarkets throughout the lower North Island, and suppliers' vehicles which bring goods into the distribution centre.

The operation of the distribution centre would represent a significant change in the supply chain logistics for the Foodstuffs operation in the lower North Island. Whilst this will result in some increase to such vehicles movements in the Palmerston North area, there will be no change in the overall number of truck movements across the wider road network.

More locally, some truck movements will replace those which are currently associated with the Foodstuffs facility on Kaimanawa Street, or which are routing to/from the existing facility at Silverstream. Whilst most of the trucks will be the larger B-trains, some will be smaller 8-11m vehicles. The number of 'new' movements in the Palmerston North area is therefore considerably less than the total number of movements expected to visit the proposed facility.

An indicative distribution of these truck movements between destinations and their recommended routes prior to and after completion of the strategic ring route is shown in **Table 1**. It should be noted that these numbers are shown for indicative purposes only and are subject to change according to logistical requirements and market conditions.

Status of this TMP

It is intended that this TMP should form part of the consent application, and have the status of a Memorandum of Understanding between Palmerston North CC and Foodstuffs, in which:

- PNCC will seek to maximise the efficiency of the short-term routes within its area through the application of appropriate traffic management and will advise Foodstuffs of any significant planned works which may affect the availability of these routes;
- PNCC will continue to seek the co-operation of Manawatu DC on these matters;
- Foodstuffs will instruct its drivers and those of suppliers' vehicles to use the intended routes;
- Foodstuffs will advise of any significant changes to its operational requirements in terms of the number of truck movements expected to use each route;
- PNCC will strive to ensure the earliest implementation of the strategic ring route proposals.

Origin / Destination	Route (outwards from site)		Indicative Vehicles/Day		
	Short-Term (prior to completion of strategic ring route)	Longer Term (following completion of strategic ring route)	In	Out	2Way
North (State Highway 3 to Wanganui, Taranaki, & State Highway 1 to Taihape and beyond)	Roberts Line, Richardsons Line, Railway Road (north), Bunnythorpe, Waugh's Road to Feilding, South Street, Awahuri Road to State Highway 3	Roberts Line, Kairanga-Bunnythorpe Road, to State Highway 3	84	32	116
East (via Manawatu Gorge: Hawke's Bay, Wairarapa)	Roberts Line, Richardsons Line, Railway Road (north), Bunnythorpe, Bunnythorpe-Ashhurst Road, Ashhurst, State Highway 3	Roberts Line, Richardsons Line, Railway Road (north), Stoney Creek Road to State Highway 3	10	22	32
South (Horowhenua, Wellington)	Roberts Line, Railway Road (south), Tremaine Avenue, No. 1 Line, State Highway 56	Roberts Line, Kairanga-Bunnythorpe Road, Karere Road to State Highway 56	15	56	71
Palmerston North City	Roberts Line, Railway Road (south), Tremaine Avenue, Rangitikei Street (State Highway 3)	Roberts Line, Railway Road (south), Tremaine Avenue, Rangitikei Street (State Highway 3)	66	65	131
		TOTAL	175	175	350

Table 1: Indicative Distribution of Truck Movements

APPENDIX D: SIDRA ASSESSMENT RESULTS, RAILWAY ROAD / ROBERTS LINE INTERSECTION

(For 2015, Period = 2 – 2.30pm and reflects warehouse shift departure and truck movements)

Period	Scenario	From	Railway Road S				Roberts Line SE				Railway Road N				Roberts Line NW				Intersection
		Movement	Left	Ahead	Right	Approach	Left	Ahead	Right	Approach	Left	Ahead	Right	Approach	Left	Ahead	Right	Approach	
2006	Base	Avg Delay (secs)	13.2	0.2	0.2	2.4	14.0	13.3	13.3	13.4	12.4	0.4	0.4	0.9	14.0	13.6	13.6	13.6	4.0
		LOS	LOS B	LOS A	LOS A	LOS A	LOS B	LOS B	LOS B	LOS B	LOS B	LOS A	LOS A	LOS A	LOS B	LOS B	LOS B	LOS B	N/A
		95th % Q (m)	5	5	5	5	3	3	3	3	4	4	4	4	1	1	1	1	5
2015	Base	Avg Delay (secs)	13.4	0.2	0.2	2.4	15.1	14.4	14.4	14.4	12.4	0.3	0.3	0.9	15.1	14.7	14.7	14.7	4.2
		LOS	LOS B	LOS A	LOS A	LOS A	LOS C	LOS B	LOS B	LOS B	LOS B	LOS A	LOS A	LOS A	LOS C	LOS B	LOS B	LOS B	N/A
		95th % Q (m)	7	7	7	7	4	4	4	4	5	5	5	5	2	2	2	2	7
2015	Dypt	Avg Delay (secs)	14.8	0.2	0.2	3.3	15.1	14.4	14.4	14.5	12.4	0.3	0.3	0.9	19.8	19.7	19.7	19.7	10.2
		LOS	LOS B	LOS A	LOS A	LOS A	LOS C	LOS B	LOS B	LOS B	LOS B	LOS A	LOS A	LOS A	LOS C	LOS C	LOS C	LOS C	N/A
		95th % Q (m)	9	9	9	9	4	4	4	4	5	5	5	5	36	36	36	36	36