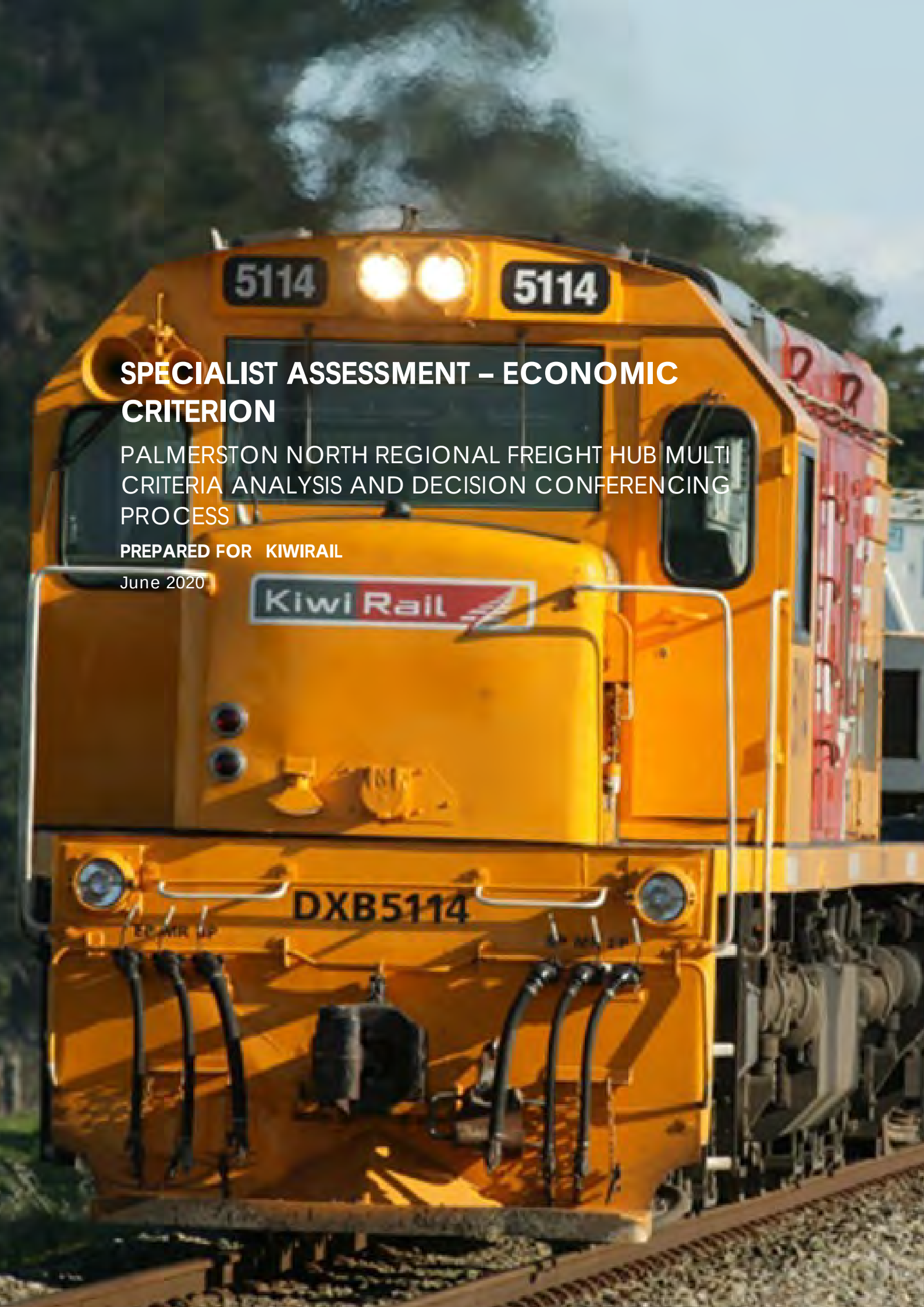

SPECIALIST ASSESSMENT – ECONOMIC CRITERION

PALMERSTON NORTH REGIONAL FREIGHT HUB MULTI CRITERIA ANALYSIS AND DECISION CONFERENCING PROCESS

PREPARED FOR KIWIRAIL

June 2020

Assessment Template - Economics

1. Introduction

Date: 20/09/19

Author(s) Richard Paling Economist and freight specialist

The following is a comparative assessment of the possible impacts on economic development and levels of economic activity of the long list site options in order to inform the MCA workshop for KiwiRail's future Palmerston North Rail and Freight Hub.

This assessment has relied on the following information:

- Current patterns of activity through the rail freight terminal and other facilities in the PN area.
- Assessment of current general freight patterns from updated National Freight Demand Study[1] and from stakeholder interviews undertaken in the course of the parallel PNCC Ring Road Project
- Preliminary future forecasts of freight activity
- Current and future heavy vehicle patterns in the PNCC area
- Employment patterns in PNCC area
- A general understanding of the development plans for the PNCC area
- The potential location of the sections of the PN Freight ring road.

The following information was not available for this assessment

Detailed proposals for commercial and industrial development in the PNCC area

Purpose of the assessment

A comparative assessment of options to inform an MCA workshop.

Supplementary material

Additional material looking in more detail at the current pattern of flows through the rail terminal, freight patterns in the region in general, and the distribution of employment and employment growth is included in Appendix A

[1] https://www.transport.govt.nz/assets/Import/Uploads/Research/Documents/NFDS3-Final-Report-Oct2019-Rev1.pdf

2. Constraints identified in each area

Area for Investigation	Constraints - what they are and where they are in the area
Option 1	The general constraint that would be relevant to the assessment of the different options would be the availability of land for different industrial and commercial uses at the various locations identified. For this appraisal, this is assumed not to be a constraint except possibly for Area 9 but this position may need to be revisited as the appraisal is developed.
Option 2	
Option 3	
Option 4	
Option 5	
Option 6	
Option 7	
Option 8	
Option 9	

3. Approach to the assessment

The assessment has been based on a subjective scale reflecting the extent to which alternative sites link in with key objectives outlined below

The score developed provides an assessment of the relative ranking of the economic impacts of the alternative locations for the proposed rail terminal

The assessment assumes that any new hub will be located close to the existing rail line.
The assessment has been based on ratings against a number of criteria. These have then been averaged to provide a final overall score. At present these are presented to one decimal place to allow the differences between options to be identified and not concealed by an integer scoring system, when considering the differences between options. If appropriate these will be rounded to integers at a subsequent stage.

4. Criteria being assessed

The economic component of the assessment relates to the extent to which the different locations for the rail hub will generate and support increases in economic activity particularly in the forms of increased employment or output in the Palmerston North area. At this stage, the economic responses to the different hub locations have been assessed subjectively taking into account the possible impacts on economic activity in the area. This assessment has been carried out individually for a number of criteria the score from which have then be added and averaged to give an overall score against the economic objective.

The criteria against which the different locations have been assessed comprise:-

- Support for existing hub users for inbound and outbound flows
- Potential for new activity in vicinity of hub
- Proximity to key complementary employment sites in area

- Accessibility benefits provided by strategic transport modes
    - Proposed ring road
    - Existing key highways
    - Airport
- Conformance with planning objectives

Each of these elements has been assessed using the following scoring approach

Score	Description
1	High Benefits
2	Medium High Benefits
3	Medium Benefits
4	Medium Low Benefits
5	Low Benefits

These scores have been combined and averaged to give the overall scores for the options. The overall scores have then been reviewed to ensure that the outcomes are consistent with the descriptions set out above.

While it is appreciated that conformance with planning objectives and issues associated with the direct connectivity to the transport network are also being considered elsewhere in the MCA appraisal, for this element of the appraisal these are being considered at a strategic level as opportunities supporting economic development rather than as a constraint on the development of the site options.

However to provide an indication of the impacts of accessibility benefits provided by the strategic transport network and conformity with area wide planning objectives , the appraisal has been carried out in two stages. The first stage is based on the first three criteria set out above which avoids potential overlaps with other work streams which also considered these issues and the second uses all the criteria identified which are considered to impact on the economic performance of the alternative. The scores from the two approaches are however very similar and give similar rankings for the options.

5. Comparative assessment

In order to help identify how the overall scores have been developed the details of the assessment against the different criteria are set out below. Some limited weighting of the individual scores reflecting the perceived importance of the individual components has been undertaken to produce the overall results. These gave a lower weighting to the integration the flows from the Longburn area which are likely to be considered to be served by the facilities there and a lower weighting to proximity to the airport reflecting the nature of the freight anticipated to be transported through the terminal typically lower value and not time sensitive, which does not form the main market for transport by air.

The weighting developed in the main reflect the proximity of the terminal options to either the markets for the goods moving inbound or the sources of supply and accessibility to the main transport links moving outbound, workforces in the city or the relatively levels of accessibility to the main transport links in the area.

Detailed assessment of location options											
Criteria for assessment		Location									
		1	2	3	4	5	6	7	8	9	weight
1 Integration with existing economic activities											
Inbound movements	Primarily movements to DCs. Key DC locations Kelvin Grove, North East Industrial Zone (NEIZ) Tremaine Ave (for Toll, Mainfreight and Peter Baker Transport -PBT)	4	3	2	1	3	4	5	4	3	*1*
Outbound movements	Logs	2	2	2	2	4	4	4	4	3	*1*
	Food products from Longburn area	5	5	4	4	3	3	2	2	4	*0.5*
2 Potential to attract complementary activity to hub											
	Potential for new development in vicinity of hub	3	2	1	1	4	4	4	3	4	*1*
3 **Proximity to workforces in city**		4	4	3	2	3	4	4	3	2	*1*
Combined score for items 1-3		**3**	**3**	**2**	**2**	**3**	**4**	**4**	**4**	**3**	
4 Accessibility provided by strategic transport modes											
	Linkages with proposed ring road	3	3	2	2	3	3	4	2	5	*1*
	Linkages with other components of the road network	3	3	3	3	4	4	3	3	3	*1*
	Linkages with the airport	4	3	2	2	4	4	5	5	2	*0.5*
5 Conformance with planning aspirations		5	4	1	1	5	5	3	3	5	*1*
Combined score for items 1-5		4	3	2	2	4	4	4	4	4	

The results can be summarised as follows:-

6. Summary

This summary brings together the scores from the detailed assessment with a commentary on the key outcomes.

Assessment of location options by economic performance			
Location for Investigation	**Assessment of the option**	**Av score New opportunities**	**Av score all criteria**
Option 1	Reasonable location relative to existing and planned transport networks which could help encourage development in the NE industrial area and provide a reasonable location for existing users	3	4
Option 2	Similar to Option 1 but benefits from closer location to the city	3	3
Option 3	Well located in relation to existing hub users, provides good connectivity into the city and provides focus for development in the NE industrial area. This would be in line with PNCC proposals and the location would link well with current and proposed transport network	2	2
Option 4	Well located in relation to existing hub users, provides good connectivity into the city, and provides focus for development in the NE industrial area. This would be in line with PNCC proposals and the location would link well with current and proposed transport network	2	2
Option 5	Slightly less well located to potential growth areas and existing users than Options 3 and 4	3	4
Option 6	Less well located to potential growth areas and existing users than Options 3 and 4	4	4
Option 7	Less well located to potential growth areas and existing users than Options 3 and 4	4	4
Option 8	Reasonably well located in relation to some potential hub users but more remote from other major users and main centres of activity within the city	3	3
Option 9	Would be close to existing users but potential for development of related activities in vicinity of rail activities likely to be constrained. Difficulties in longer distance access to and from site via routes such as Tremaine Avenue might also constrain potential for development.	3	4

Although these results have been built up from the consideration of individual components, they are consistent with the overall rating scale proposed.

The scores using the two approaches are summarised in Figure 1

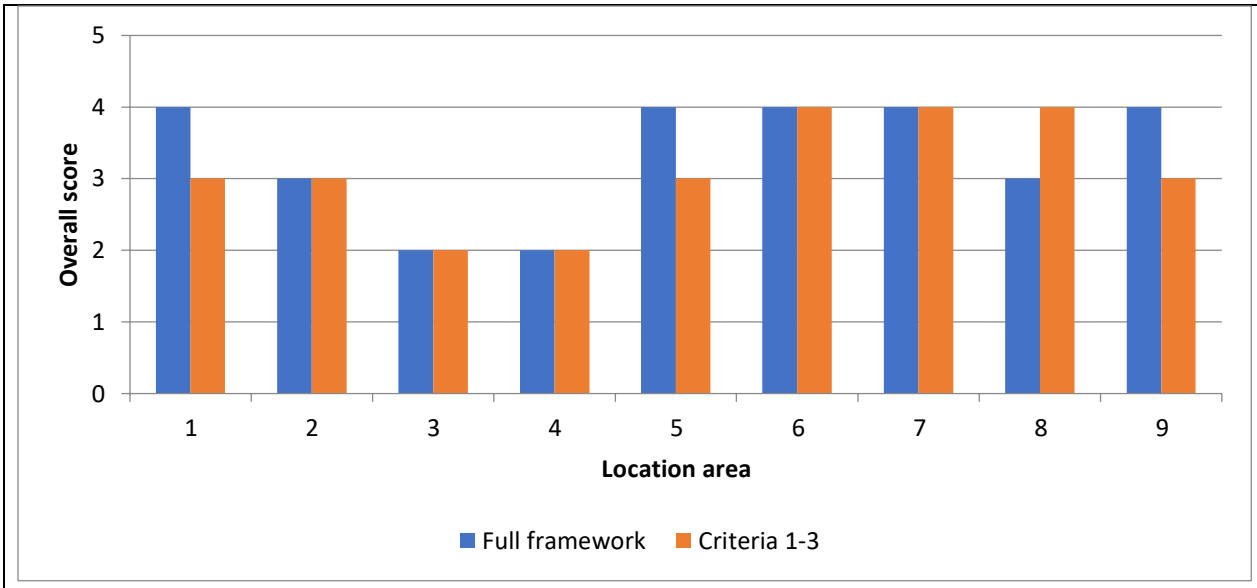

Figure 1
Economic Issues : Scores by location area

Appendix A

Background material

Palmerston North Regional Freight Hub

Background material for MCA workshop

25 September 2019

Revised 30/03/20

1 Introduction

This note provides some of the detailed background behind the Economic evaluation criteria being developed for the MCA workshop on 25 September 2019. This covers:-

- The current pattern of movements of commodities through the rail terminals in Palmerston North
- Patterns of longer distance freight traffic into the Manawatu-Wanganui region
- The distribution and growth of population in the Palmerston North area, particularly that in the major freight generating sectors

2 Goods movements through the PN KiwiRail terminal

2.1 Introduction

The volumes of goods handled at the Palmerston North rail terminal (including the facilities at Longburn) in 2017/18 are set out in Table 2.1

Table 2.1
Main freight flows through the Palmerston North rail terminals 2017/18 (m net tonnes)

	Outbound	Inbound	Total
Dairy	0.13	0.00	0.13
Logs	0.27	0.00	0.27
Manufactured and retail items	0.03	0.28	0.31
Meat	0.04	0.00	0.05
Milk	0.10	0.00	0.10
Other Agriculture	0.00	0.02	0.02
Steel and aluminium	0.00	0.01	0.01
Wood products	0.00	0.01	0.01
Total	**0.56**	**0.32**	**0.88**

Note The totals may not match the sum of the individual components because of rounding.

The distribution of commodities by type for inbound and outbound flows is set out in Figure 2.1 and Figure 2.2. It should be noted that the shares in the figures are based on unrounded numbers so may be slightly different to proportions derived from the rounded numbers in Table 2.1.

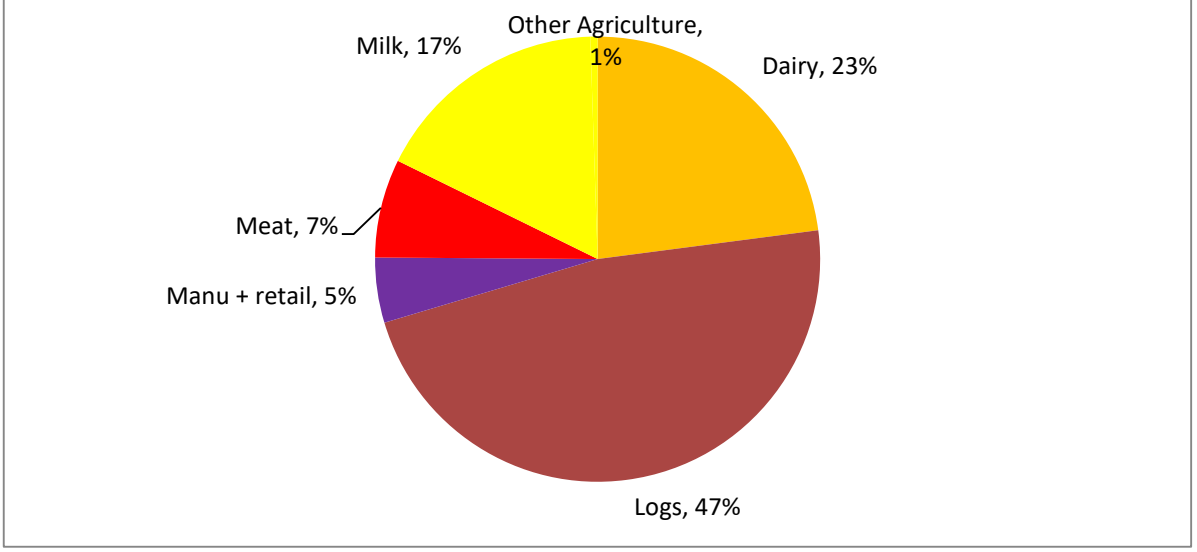

Figure 2.1
Outbound flows from the PN rail terminal facilities

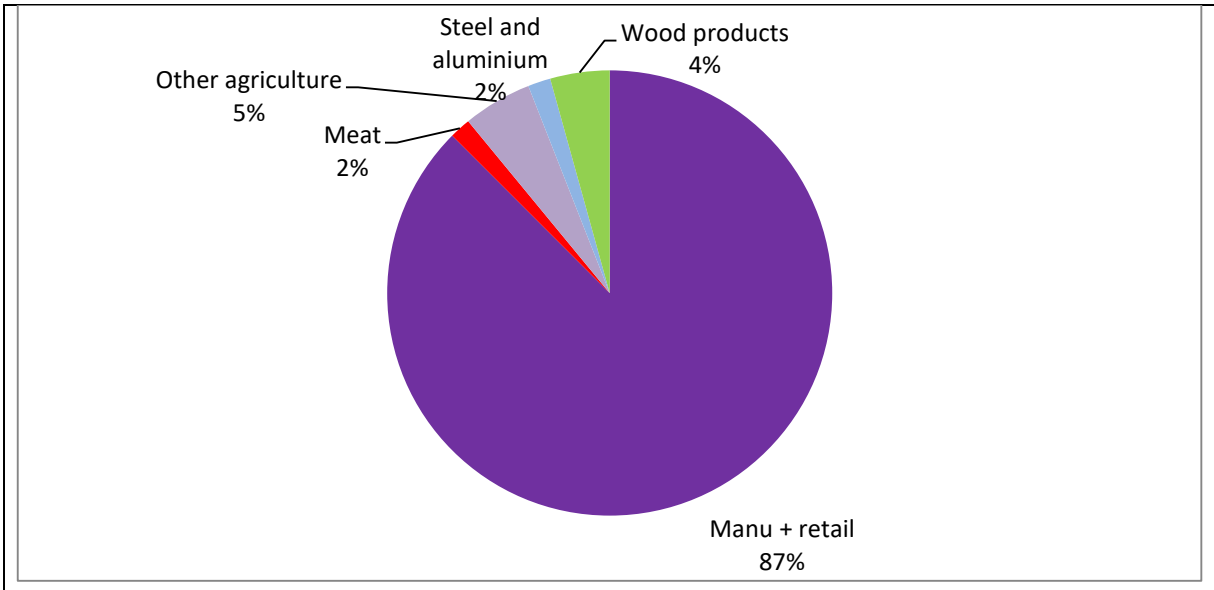

Figure 2.2
Inbound flows to the Palmerston North rail terminal facilities

In total the rail terminals in Palmerston North handle about 0.9 m tonnes of cargo in a year, about 6 per cent of the total volumes transported by rail in the country as a whole. About two thirds of the flows are outbound mainly comprising the movements of logs and milk and dairy products with logs accounting for about 50 per cent of the total. Logs are mainly for export through Wellington or Napier. Other important commodities are milk and dairy products which account for a further 40 per cent of the total, with the milk going to dairy factories in Taranaki and the dairy products travelling to Auckland or Tauranga for export. These are mainly handled at the private sidings located at Longburn.

By contrast inbound flows which account for about a third of the movements through the terminals are dominated by manufactured and retail products, mainly from Auckland, This is the largest of the commodity groupings identified. These account for almost 90 per cent of the total movements inbound reflecting Palmerston North's role as a manufacturing and major distribution centre for the lower North Island with a catchment area stretching as far north as Taranaki and Hawke's Bay.

3 General freight patterns

3.1 Introduction

In addition to the movements through the rail terminal, estimates are available of the total freight movements into and out of the Manawatu-Wanganui region from the forthcoming National Freight Demand Study 2017/18 update. While these are at a regional level and so would have a wider focus than just Palmerston North they do give an indication of the scale of the freight movements and their distribution by type of commodity and by their origin or destination away from the region.

3.2 Movements by commodity

The pattern of movements by commodity is set out in Table 3.1

Table 3.1
Estimated freight flows to or from the Manawatu-Wanganui region by commodity group - Preliminary Estimates
(m tonnes 2017/18)

Commodity	Inbound	Outbound	Total
Milk and dairy	0.65	1.49	2.14
Logs	0.08	1.73	1.81
Timber products	0.12	0.49	0.61
Meat	0.01	0.18	0.19
Livestock	0.19	0.26	0.45
Horticulture	0.19	0.02	0.21
Other agriculture	0.28	0.04	0.32
Petroleum	0.38	0	0.38
Aggregate	0.00	0.23	0.23
Limestone/Cement/Fertiliser	0.30	0.03	0.33
Steel/Aluminium	0.02	0	0.02
Man + Retail	2.06	1.76	3.82
Waste	0	0.03	0.03
Other minerals	0.01	0.01	0.02
Total	**4.28**	**6.24**	**10.52**

Source : NFDS3 Preliminary estimates

Totals may be slightly different to the sum of the components because of rounding.

Flows to the region are dominated by the movement of manufactured and retail goods, which as the previous section indicates also make up a large share of the inbound movements for the rail freight terminal. Flows outbound from the region also include large volumes of manufactured and retail goods reflecting the role of Palmerston North as a distribution hub for the lower North Island. These are almost entirely transported by road. The other major outbound flows from the region include milk and dairy products and logs, shares of both of which are handled by the rail facilities in Palmerston North.

3.3 Origin-destination patterns of inter-regional movements

The estimated flow by origins and destinations to and from the Manawatu-Wanganui region are set out in Table 3.2

Table 3.2
Estimated freight flows to or from the Manawatu-Wanganui region by origin/destination - Preliminary Estimates
(m tonnes 2017/18)

Region	Inbound	Outbound	Total
Northland	0.00	0.01	0.01
Auckland	1.68	0.54	2.22
Waikato	0.10	0.09	0.19
Bay of Plenty	0.21	0.22	0.43
Gisborne	0.06	0.02	0.09
Hawke's Bay	0.55	1.59	2.15
Taranaki	0.46	1.66	2.11
Wellington	1.08	2.06	3.14
TNM	0.03	0.01	0.03
West Coast	0.00	0.00	0.00
Canterbury	0.10	0.05	0.15
Otago	0.00	0.00	0.00
Southland	0.00	0.00	0.00
Total	**4.28**	**6.26**	**10.52**

Source : NFDS3 Preliminary estimates

Totals may be slightly different to the sum of the components because of rounding

Movements from Auckland make up the largest share of the inbound flows reflecting the movements of goods for onward distribution or processing in the region. Other major flows come from the neighbouring regions particularly Wellington and Hawke's Bay to some extent reflecting the flows of goods passing through the ports of Wellington and Napier.

Outbound flows reflect high proportions of movements to the neighbouring regions, reflecting the onward distribution of manufactured goods and also the movements of primary products for export or processing outside the region. The flows of logs and milk and dairy products through the Palmerston North rail terminal would form a component of these flows.

4 Employment patterns in the Palmerston North area

4.1 Current patterns

Current employment patterns in the Palmerston North area as derived from the Statistics NZ Business Demographics Database are set out in Figure 4.1 and Figure 4.2. Figure 4.1 shows employment in all categories while Figure 4.2 shows employment in the main freight generating industries in production and distribution.

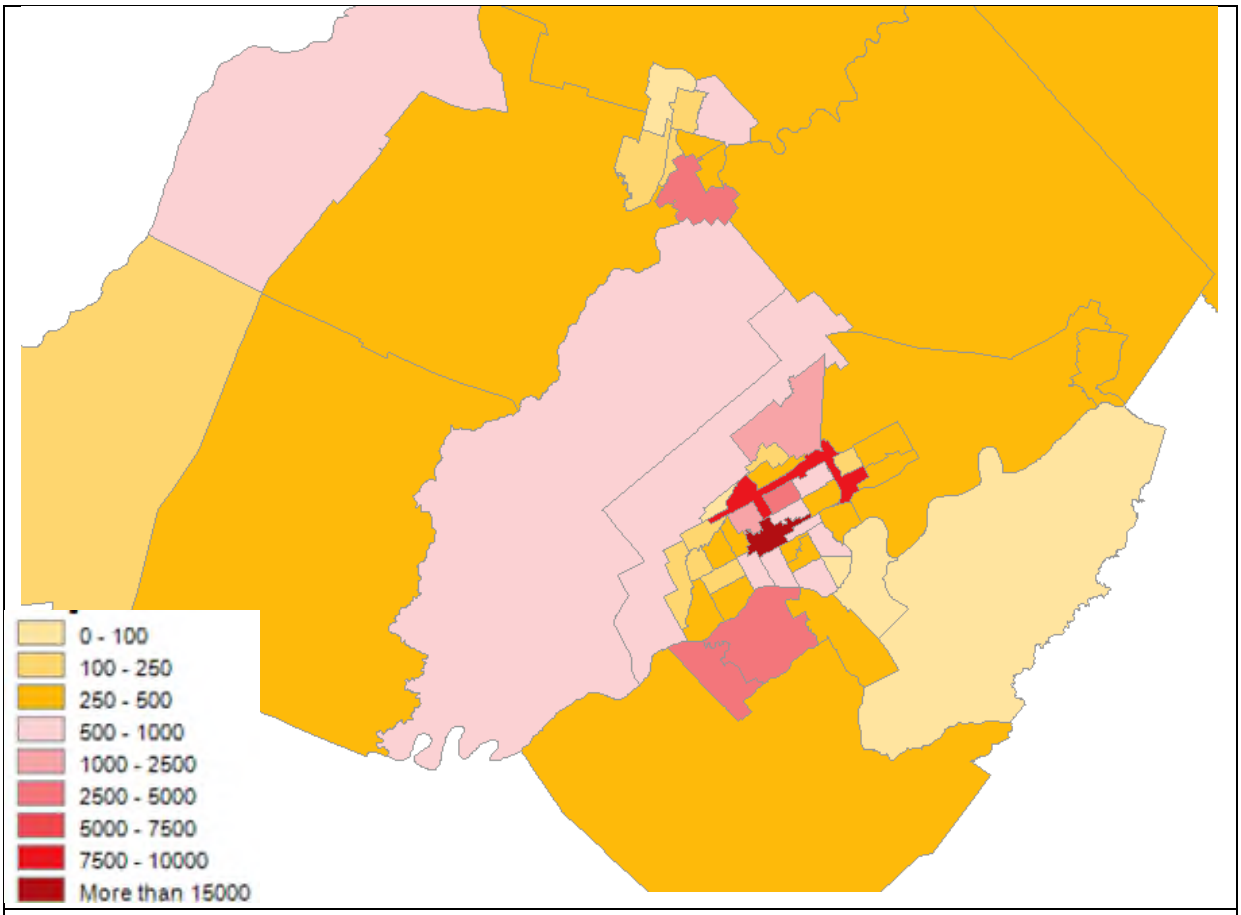

Figure 4.1
Total employment 2018

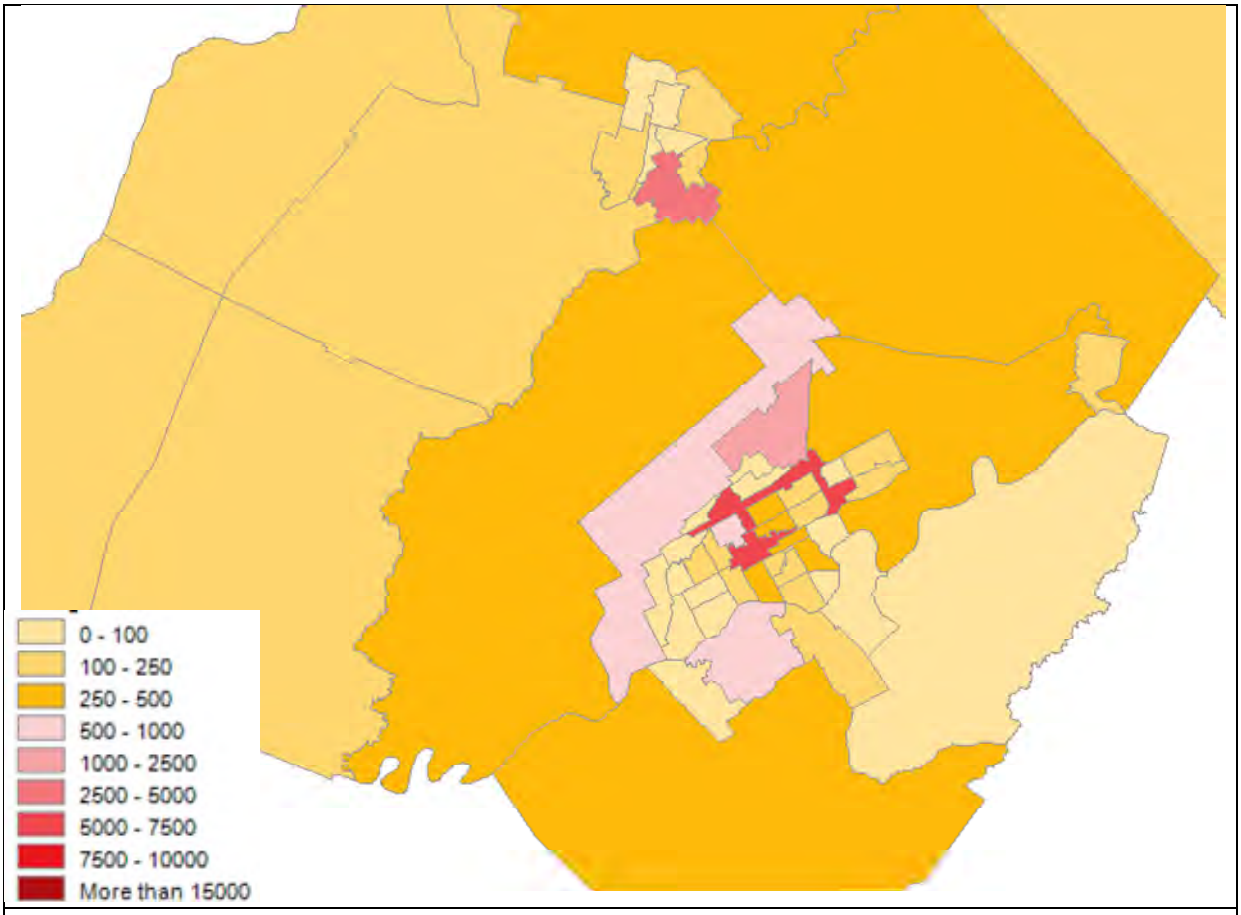

Figure 4.2
Employment in primary and secondary industries 2018

Both of the figures highlight the high level of employment and activity along the Tremaine Road/Kelvin Grove axis both for total employment and employment in freight generating activities.

4.2 Changes in employment patterns

The changes in employment in the Palmerston North area over the past 5 years in all industries are set out in Figure 4.3 and for the primary and secondary industries, the key freight generators, in Figure 4.4.

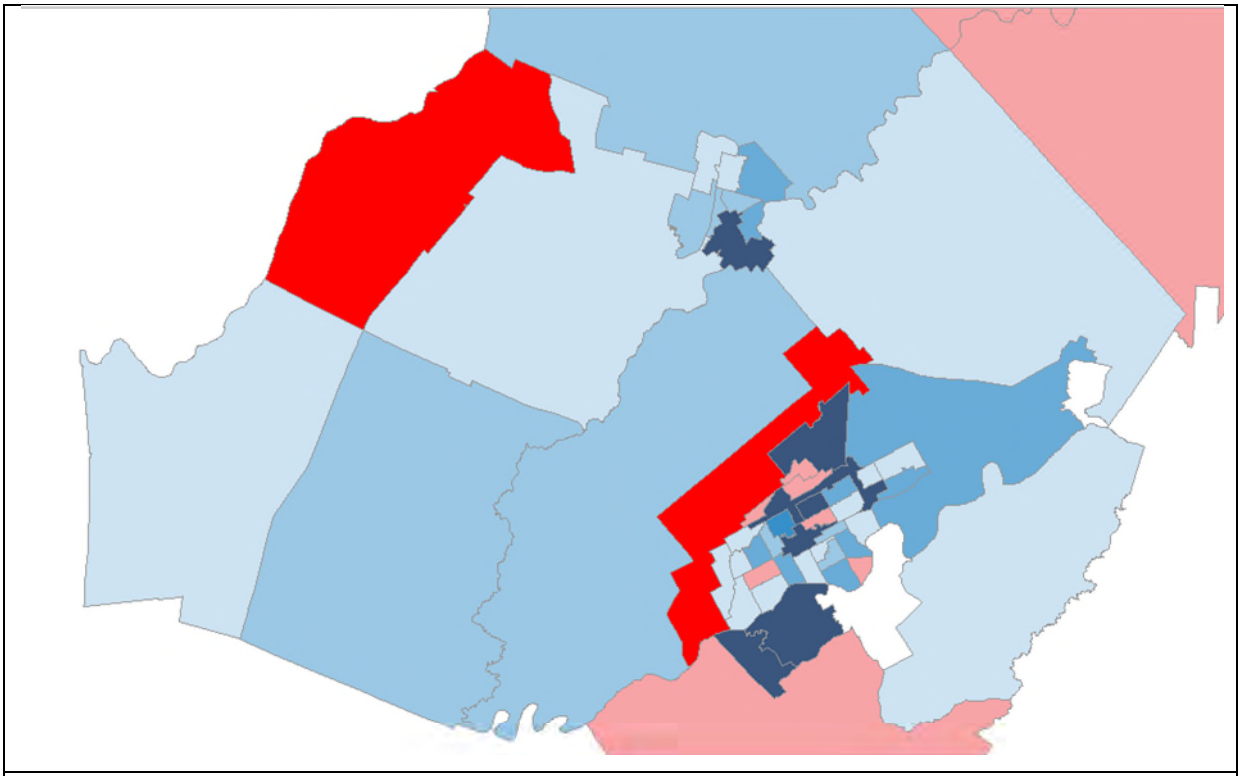

Figure 4.3
Growth in total employment 2013-2018

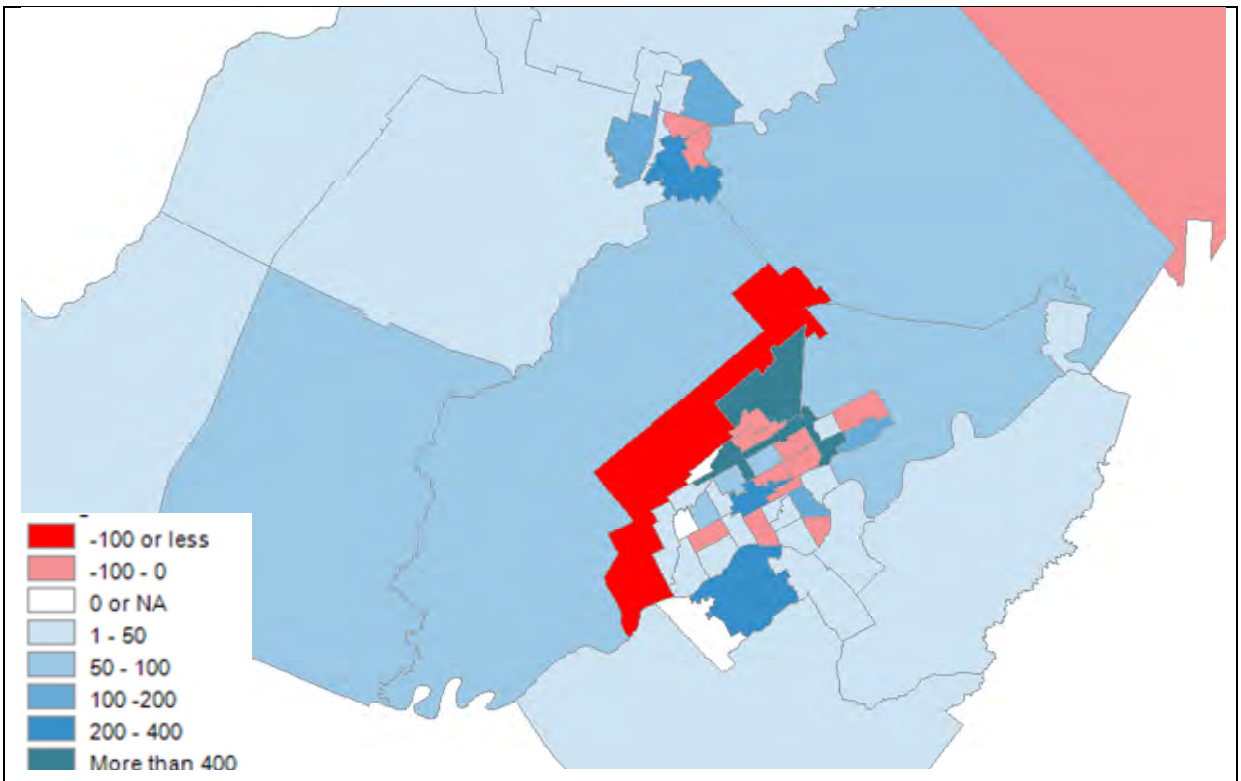

Figure 4.4
Growth in employment in primary and secondary industries 2013-2018

In both cases, the figures highlight the growth in employment and associated economic activity in the Tremaine Avenue/Kelvin Grove axis and in the airport and NEIZ. Growth to the west of the city especially to the north of the Manawatu River is relatively low growth. Possible hub locations located to the north east would therefore potentially be able to tap into and support this growth in activity. As a result they would be better placed to make a larger contribution to the overall economic development of the city.

Hub locations to the west in particular areas 5, 6 and 7 would be located in areas where employment levels have fallen. While there would be some potential to increase the levels of economic activity in these areas, because of the historical decline in activity in these areas the contribution is likely to be much more limited.

Addendum to the Workshop 2 Economic Impact Assessment

Reason for the addendum

During Workshop 2, participants acknowledged that having a specific site to assess within the areas identified could potentially result in changes to the scores presented at Workshop 2.

As a result, after Workshop 2, the masterplan was applied to the area options assessed in Workshop 2, and sites within those areas identified. The rail connection was included on the refined options, and the implications for connecting to the North Island Main Trunk line were identified.

There are two layout options for areas 1 and 2 (Options 1a, 1b, 2a, 2b). Three layouts were originally developed for area 3, however only one layout was taken forward for assessment because the others did not meet the project objectives. Area 4 could only accommodate one layout option. There were significant constraints at the ends of areas 5 and 6, therefore the parts of these two areas without the constraints were combined to create site 5.

Sites in areas 7, 8 and 9 were not identified as these areas were fatally flawed at Workshop 2.

Assessments

The following table sets out the Economic Impact assessment and scoring for each of the site options

Site Option	Score	Assessment
Option 1a	4 Same for both sub-options	Reasonable location relative to existing and planned transport networks which could help encourage development in the NE industrial area and provide a reasonable location for existing users
Option 1b		
Option 2a	3 Same for both sub-options	Similar to Option 1 but benefits from closer location to the city
Option 2b		
Option 3	2	Well located in relation to existing hub users, provides good connectivity into the city and provides focus for development in the NE industrial area. This would be in line with PNCC proposals and the location would link well with current and proposed transport network
Option 4	2	Well located in relation to existing hub users, provides good connectivity into the city, and provides focus for development in the NE industrial area. This would be in line with PNCC proposals and the location would link well with current and proposed transport network
Option 5	4	Less well located to potential growth areas and existing users

Conclusion

On economic development grounds Options 3 and 4 appear to provide the best results

Workshop 3 Assessment Template Economics

1. Introduction

Date: 10/11/2019

Author(s) Richard Paling Economist and freight specialist
Murray King Freight and rail specialist

The following is a comparative assessment of the possible impacts on economic development and levels of economic activity of the three short list site options in order to inform the MCA workshop for KiwiRail's future Palmerston North Rail and Freight Hub.

This assessment has relied on the following information:

- Current patterns of activity through the rail freight terminal and other facilities in the PN area.
- Assessment of current general freight patterns from the updated National Freight Demand Study (NFDS) and from stakeholder interviews undertaken in the course of the parallel PNCC Ring Road Project
- Preliminary future forecasts of freight activity
- Current and future heavy vehicle patterns in the PNCC area
- Employment patterns in PNCC area
- A general understanding of the development plans for the PNCC area
- The potential location of the sections of the PN Freight ring road.

The following information was not available for this assessment

Detailed proposals for commercial and industrial development in the PNCC area

Purpose of the assessment

A comparative assessment of options to inform an MCA workshop.

Supplementary material

Additional material looking in more detail at the current pattern of flows through the rail terminal, freight patterns in the region in general, and the distribution of employment and employment growth is included in Appendix A

2. Constraints identified in each area

Area for Investigation	Constraints - what they are and where they are in the area
Option 2 Option 3 Option 4	The general constraint that would be relevant to the assessment of the different options would be the availability of land for different industrial and commercial uses at the various locations identified. For this appraisal, this is assumed not to be a constraint except possibly for Area 9 but this position may need to be revisited as the appraisal is developed.

Option 2 is a site to the north of Bunnythorpe, Option 3 is a site between Palmerston North and Bunnythorp to the west of Railway Road and Option 4 is also between Palmerston North and Bunnythorp but to the east of Railway Road

3. Approach to the assessment

The assessment has been based on a subjective scale reflecting the extent to which alternative sites link in with key objectives outlined below

The score developed provides an assessment of the relative ranking of the economic impacts of the alternative locations for the proposed rail terminal

The assessment takes into account the details of the proposed layouts of the rail terminals and the impact that these will have on the adjacent properties and road layouts in the area. This is additional to the earlier assessments where the site details were not considered.

The assessment has been based on ratings against a number of criteria. These have then been averaged to provide a final overall score, rounded to integers.

4. Criteria being assessed

The economic component of the assessment relates to the extent to which the different locations for the rail hub will generate and support increases in economic activity particularly in the forms of increased employment or output in the Palmerston North area. At this stage, the economic responses to the different hub locations have been assessed subjectively taking into account the possible impacts on economic activity in the area. This assessment has been carried out individually for a number of criteria the scores from which have then been added and averaged to give an overall score against the economic objective.

The criteria against which the different locations have been assessed comprise:-

- Support for existing hub users for inbound and outbound flows
- Potential for new activity in vicinity of hub
- Proximity to key complementary employment sites in area
- Accessibility benefits provided by strategic transport modes

    - Proposed ring road
    - Existing key highways
    - Airport
- Conformance with planning objectives
- Potential impact on activities located near to hub

With the exception of the final criterion, each of these elements has been assessed using the following scoring approach

Score	Description
1	High Benefits
2	Medium High Benefits
3	Medium Benefits
4	Medium Low Benefits
5	Low Benefits

The final element has been evaluated using the following scoring approach

Score	Description
1	Low impact
2	Medium Low
3	Medium
4	Medium high impact Benefits
5	High impact

These scores have been combined and averaged to give the overall scores for the options. The overall scores have then been reviewed to ensure that the outcomes are consistent with the descriptions set out above.

While it is appreciated that conformance with planning objectives and issues associated with the direct connectivity to the transport network are also being considered elsewhere in the MCA appraisal, for this element of the appraisal these are being considered at a strategic level as opportunities supporting economic development rather than as a constraint on the development of the site options.

5. Comparative assessment

In order to help identify how the overall scores have been developed the details of the assessment against the different criteria are set out below. Some limited weighting of the individual scores reflecting the perceived importance of the individual components has been undertaken to produce the overall results. These gave a lower weighting to the integration the flows from the Longburn area which are likely to be considered to be served by the facilities there and a lower weighting to proximity to the airport reflecting the nature of the freight anticipated to be transported through the terminal typically lower value and not time sensitive, which does not form the main market for transport by air.

The weighting developed in the main reflect the proximity of the terminal options to either the markets for the goods moving inbound or the sources of supply and accessibility to the main transport links moving outbound, workforces in the city or the relatively levels of accessibility to the main transport links in the area.
Because of better definitions of the options and some revisions to the detailed layouts and the way in which they would link to the transport network in the area, the scoring in some instances is different to that for Workshop 2.

The results can be summarised as follows:-

Detailed assessment of location options					
Criteria for assessment		**2**	**3**	**4**	**Weight**
1 Integration with existing economic activities					
Inbound movements	Primarily movements to DCs. Key DC locations Kelvin Grove, North East Industrial Zone (NEIZ) Tremaine Ave (for Toll, Mainfreight and Peter Baker Transport -PBT)	3	1	1	1
	Logs	2	2	2	1
Outbound movements	Food products from Longburn area	5	4	4	0.5
2 Potential for new development in vicinity of hub		3	2	2	1
3 Proximity to workforces in city		4	2	2	1
4 Accessibility provided by strategic transport modes					
	Linkages with proposed ring road	3	2	2	1
	Linkages with other components of the road network	3	3	2	1
	Linkages with the airport	3	2	2	0.5
5 Conformance with PNCC planning aspirations		4	3	1	1
6 Impact on economic activities in vicinity of hub		4	4	1	1
Combined score		**4**	**3**	**2**	

6. Summary

Assessment of location options by economic performance		
Location for Investigation	**Assessment of the option**	**Av score all criteria**
Option 2	Reasonable location relative to existing and planned transport networks which could help encourage development in NE industrial area and provide a reasonable location for existing key users . More remote from city centre activities than Options 3 and 4 and would impact severely on Fielding Aerodrome and associated commercial activities	4
Option 3	Well located in relation to existing hub users, provides good connectivity into the city and provides something of a focus for development in the NE industrial area. This would be in line with PNCC proposals and the location would link well with current and proposed transport network. However benefits offset by possible land take for new facility in or just beyond existing boundary of NEIZ and need to put main north-south access road through the middle of the zone providing potential conflicts between zone and through traffic and possibly making the area less attractive for development.	3
Option 4	Well located in relation to existing hub users, provides good connectivity into the city, and provides focus for development in the NE industrial area. This would be in line with PNCC proposals and the location would link well with current and proposed transport network, especially the proposed ring road. Does not have the negative impacts associated with Option 3 since terminal separate from while still being close to the NEIZ.	2

Although these results have been built up from the consideration of individual components, they are consistent with the overall rating scale proposed.

Appendix A

Background material

Palmerston North Regional Freight Hub

Background material for MCA workshop

25 September 2019

Revised 30/03/20

1 Introduction

This note provides some of the detailed background behind the Economic evaluation criteria being developed for the MCA workshop on 25 September 2019. This covers:-

- The current pattern of movements of commodities through the rail terminals in Palmerston North
- Patterns of longer distance freight traffic into the Manawatu-Wanganui region
- The distribution and growth of population in the Palmerston North area, particularly that in the major freight generating sectors

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The volumes of goods handled at the Palmerston North rail terminal (including the facilities at Longburn) in 2017/18 are set out in Table 2.1

Table 2.1
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	Outbound	Inbound	Total
Dairy	0.13	0.00	0.13
Logs	0.27	0.00	0.27
Manufactured and retail items	0.03	0.28	0.31
Meat	0.04	0.00	0.05
Milk	0.10	0.00	0.10
Other Agriculture	0.00	0.02	0.02
Steel and aluminium	0.00	0.01	0.01
Wood products	0.00	0.01	0.01
Total	**0.56**	**0.32**	**0.88**

Note The totals may not match the sum of the individual components because of rounding.

The distribution of commodities by type for inbound and outbound flows is set out in Figure 2.1 and Figure 2.2. It should be noted that the shares in the figures are based on unrounded numbers so may be slightly different to proportions derived from the rounded numbers in Table 2.1.

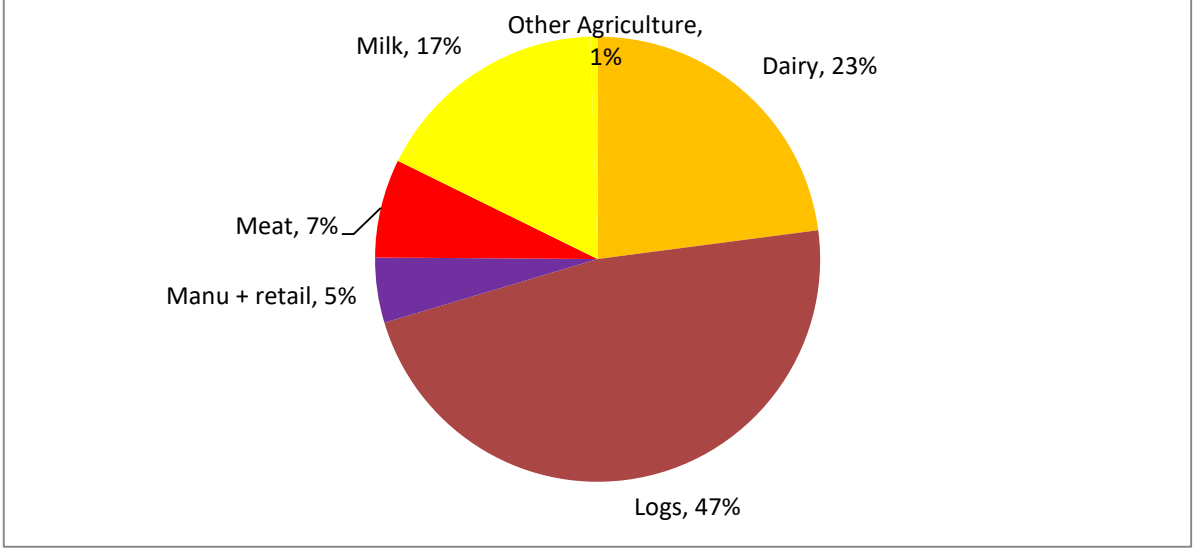

Figure 2.1
Outbound flows from the PN rail terminal facilities

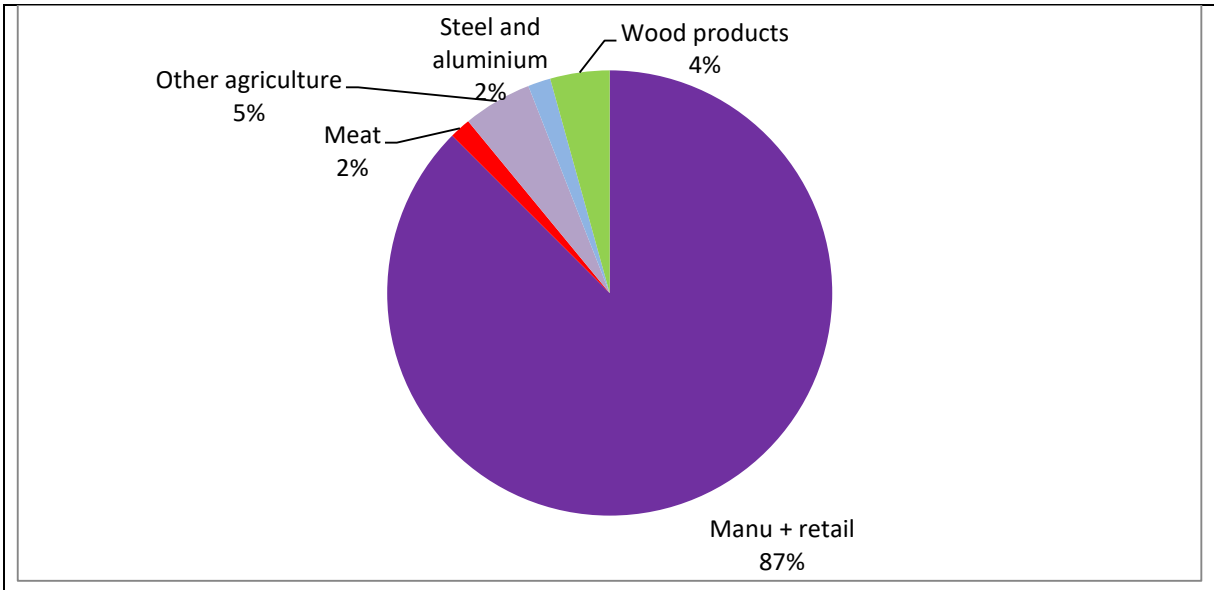

Figure 2.2
Inbound flows to the Palmerston North rail terminal facilities

In total the rail terminals in Palmerston North handle about 0.9 m tonnes of cargo in a year, about 6 per cent of the total volumes transported by rail in the country as a whole. About two thirds of the flows are outbound mainly comprising the movements of logs and milk and dairy products with logs accounting for about 50 per cent of the total. Logs are mainly for export through Wellington or Napier. Other important commodities are milk and dairy products which account for a further 40 per cent of the total, with the milk going to dairy factories in Taranaki and the dairy products travelling to Auckland or Tauranga for export. These are mainly handled at the private sidings located at Longburn.

By contrast inbound flows which account for about a third of the movements through the terminals are dominated by manufactured and retail products, mainly from Auckland, This is the largest of the commodity groupings identified. These account for almost 90 per cent of the total movements inbound reflecting Palmerston North's role as a manufacturing and major distribution centre for the lower North Island with a catchment area stretching as far north as Taranaki and Hawke's Bay.

3 General freight patterns

3.1 Introduction

In addition to the movements through the rail terminal, estimates are available of the total freight movements into and out of the Manawatu-Wanganui region from the forthcoming National Freight Demand Study 2017/18 update. While these are at a regional level and so would have a wider focus than just Palmerston North they do give an indication of the scale of the freight movements and their distribution by type of commodity and by their origin or destination away from the region.

3.2 Movements by commodity

The pattern of movements by commodity is set out in Table 3.1

Table 3.1
Estimated freight flows to or from the Manawatu-Wanganui region by commodity group - Preliminary Estimates
(m tonnes 2017/18)

Commodity	Inbound	Outbound	Total
Milk and dairy	0.65	1.49	2.14
Logs	0.08	1.73	1.81
Timber products	0.12	0.49	0.61
Meat	0.01	0.18	0.19
Livestock	0.19	0.26	0.45
Horticulture	0.19	0.02	0.21
Other agriculture	0.28	0.04	0.32
Petroleum	0.38	0	0.38
Aggregate	0.00	0.23	0.23
Limestone/Cement/Fertiliser	0.30	0.03	0.33
Steel/Aluminium	0.02	0	0.02
Man + Retail	2.06	1.76	3.82
Waste	0	0.03	0.03
Other minerals	0.01	0.01	0.02
Total	**4.28**	**6.24**	**10.52**

Source : NFDS3 Preliminary estimates

Totals may be slightly different to the sum of the components because of rounding.

Flows to the region are dominated by the movement of manufactured and retail goods, which as the previous section indicates also make up a large share of the inbound movements for the rail freight terminal. Flows outbound from the region also include large volumes of manufactured and retail goods reflecting the role of Palmerston North as a distribution hub for the lower North Island. These are almost entirely transported by road. The other major outbound flows from the region include milk and dairy products and logs, shares of both of which are handled by the rail facilities in Palmerston North.

3.3 Origin-destination patterns of inter-regional movements

The estimated flow by origins and destinations to and from the Manawatu-Wanganui region are set out in Table 3.2

Table 3.2
Estimated freight flows to or from the Manawatu-Wanganui region by origin/destination - Preliminary Estimates
(m tonnes 2017/18)

Region	Inbound	Outbound	Total
Northland	0.00	0.01	0.01
Auckland	1.68	0.54	2.22
Waikato	0.10	0.09	0.19
Bay of Plenty	0.21	0.22	0.43
Gisborne	0.06	0.02	0.09
Hawke's Bay	0.55	1.59	2.15
Taranaki	0.46	1.66	2.11
Wellington	1.08	2.06	3.14
TNM	0.03	0.01	0.03
West Coast	0.00	0.00	0.00
Canterbury	0.10	0.05	0.15
Otago	0.00	0.00	0.00
Southland	0.00	0.00	0.00
Total	**4.28**	**6.26**	**10.52**

Source : NFDS3 Preliminary estimates

Totals may be slightly different to the sum of the components because of rounding

Movements from Auckland make up the largest share of the inbound flows reflecting the movements of goods for onward distribution or processing in the region. Other major flows come from the neighbouring regions particularly Wellington and Hawke's Bay to some extent reflecting the flows of goods passing through the ports of Wellington and Napier.

Outbound flows reflect high proportions of movements to the neighbouring regions, reflecting the onward distribution of manufactured goods and also the movements of primary products for export or processing outside the region. The flows of logs and milk and dairy products through the Palmerston North rail terminal would form a component of these flows.

4 Employment patterns in the Palmerston North area

4.1 Current patterns

Current employment patterns in the Palmerston North area as derived from the Statistics NZ Business Demographics Database are set out in Figure 4.1 and Figure 4.2. Figure 4.1 shows employment in all categories while Figure 4.2 shows employment in the main freight generating industries in production and distribution.

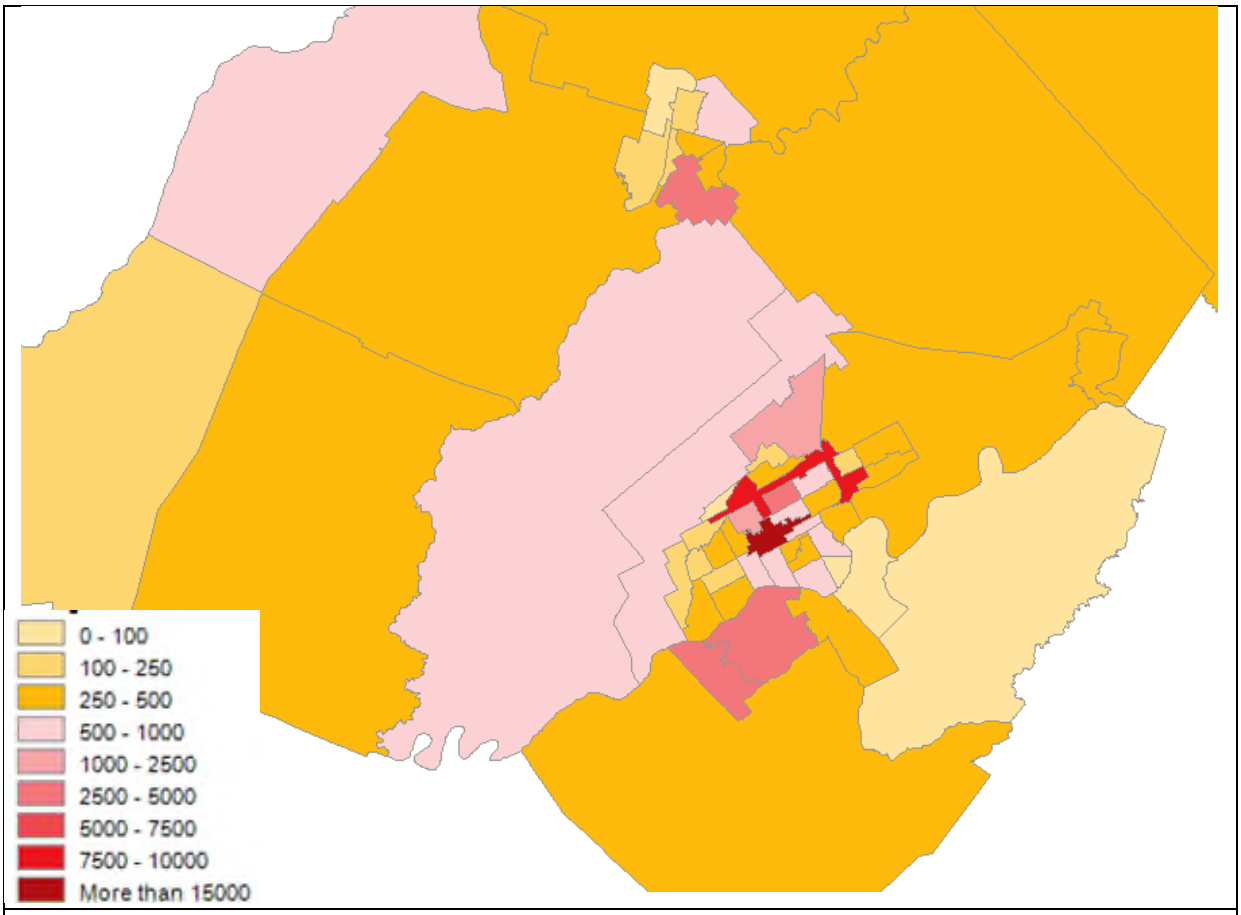

Figure 4.1
Total employment 2018

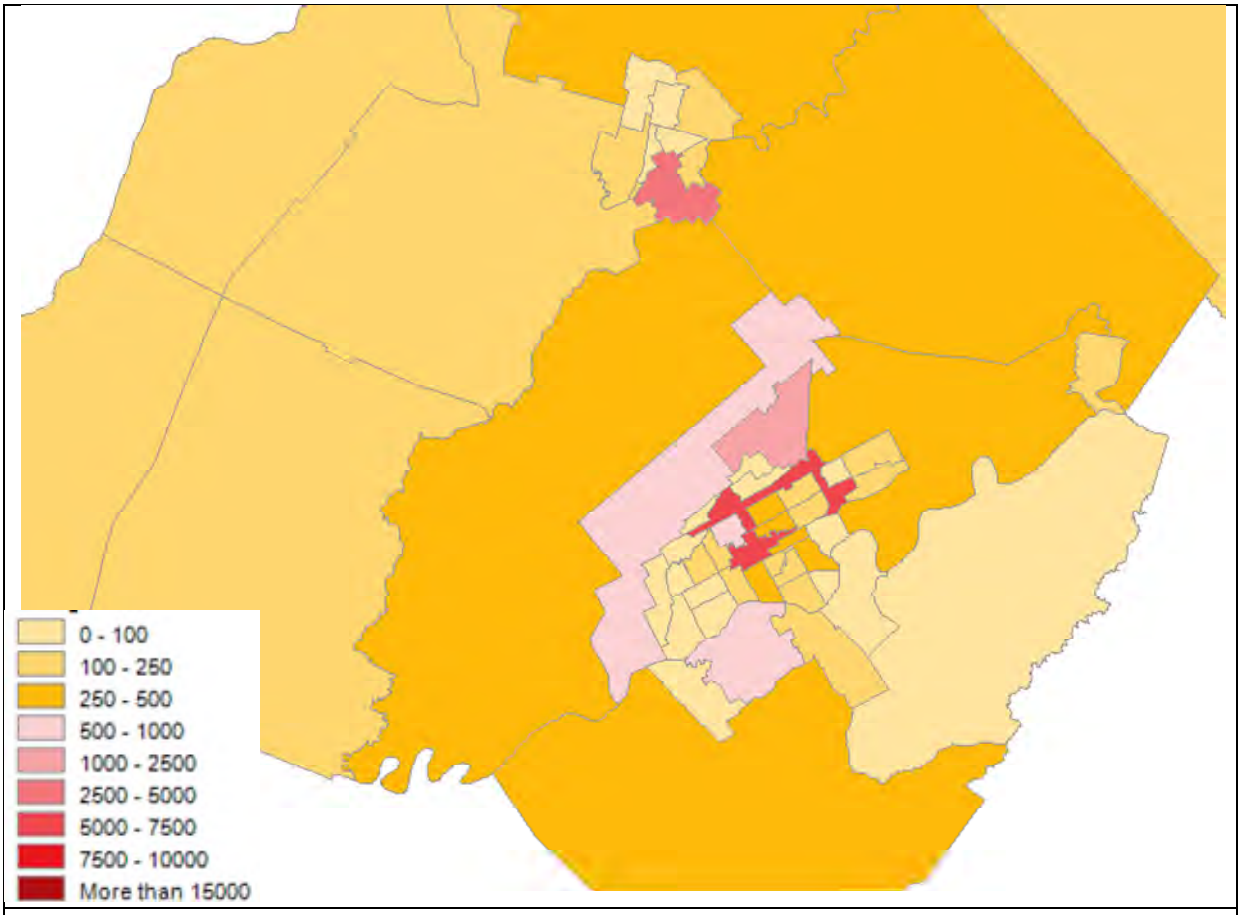

Figure 4.2
Employment in primary and secondary industries 2018

Both of the figures highlight the high level of employment and activity along the Tremaine Road/Kelvin Grove axis both for total employment and employment in freight generating activities.

4.2 Changes in employment patterns

The changes in employment in the Palmerston North area over the past 5 years in all industries are set out in Figure 4.3 and for the primary and secondary industries, the key freight generators, in Figure 4.4.

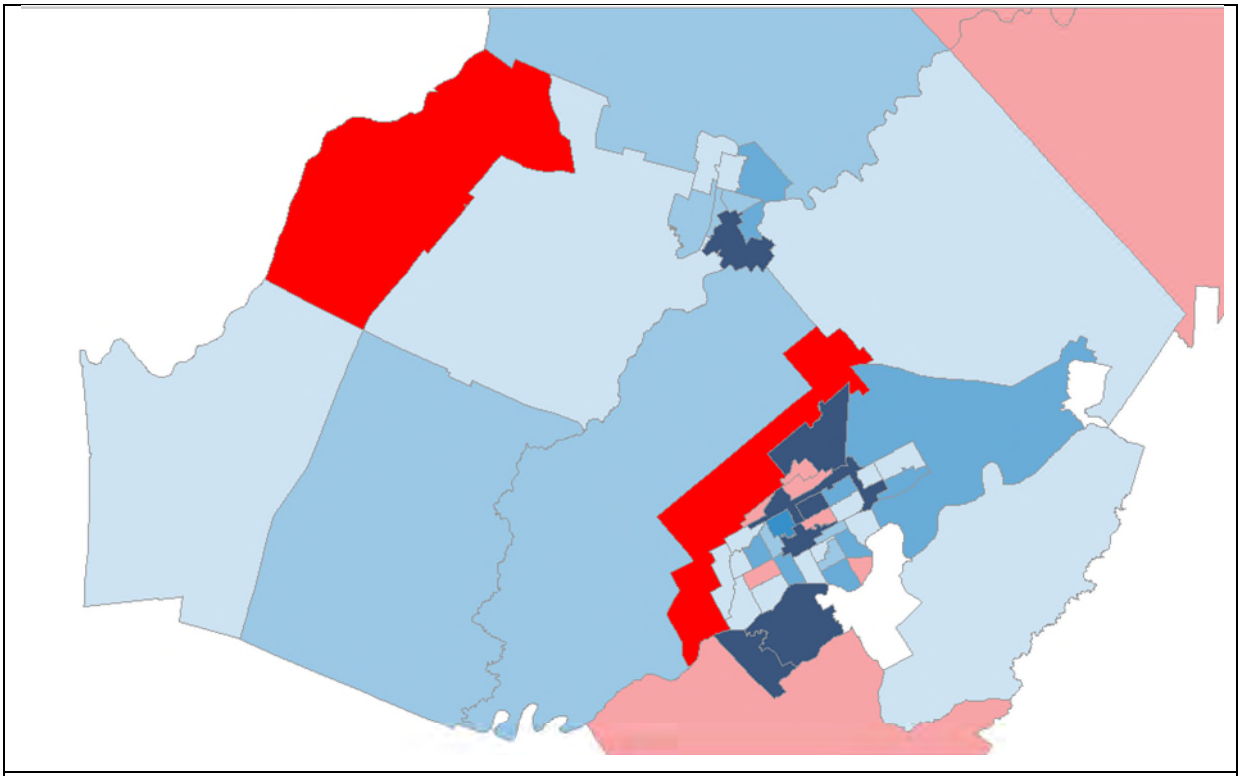

Figure 4.3
Growth in total employment 2013-2018

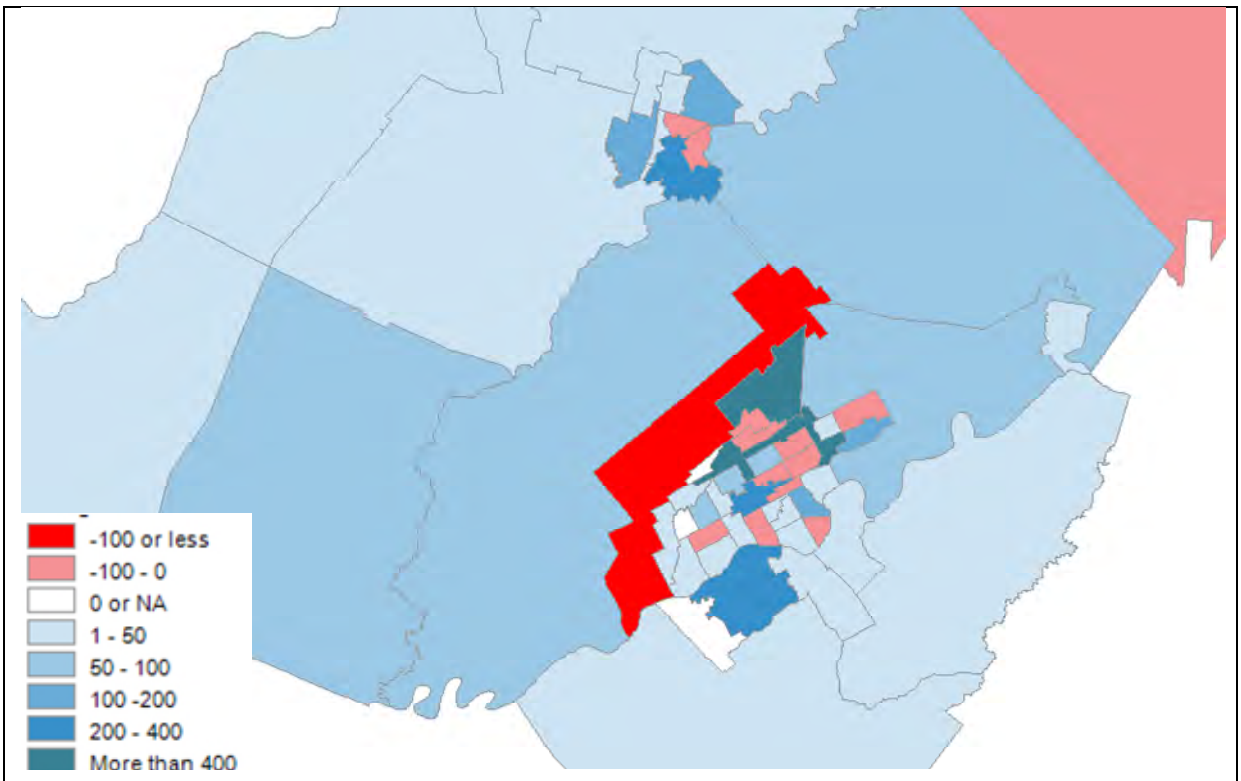

Figure 4.4
Growth in employment in primary and secondary industries 2013-2018

In both cases, the figures highlight the growth in employment and associated economic activity in the Tremaine Avenue/Kelvin Grove axis and in the airport and NEIZ. Growth to the west of the city especially to the north of the Manawatu River is relatively low growth. Possible hub locations located to the north east would therefore potentially be able to tap into and support this growth in activity. As a result they would be better placed to make a larger contribution to the overall economic development of the city.

Hub locations to the west in particular areas 5, 6 and 7 would be located in areas where employment levels have fallen. While there would be some potential to increase the levels of economic activity in these areas, because of the historical decline in activity in these areas the contribution is likely to be much more limited.

Assessment Template - Economics Addendum 1

This addendum reflects changes to the scores following the discussion at the MCA workshop in Palmerston North on 20 November 2019. As discussed at the workshop, the scores depend critically on assumptions about the way in which the road network associated with the new hub would connect to the possible ring road at Bunnythorpe and the precise layout of the terminal and its impact on existing activities and functionality of the NEIZ.
Following the workshop , two assessments have therefore been made, the first being based on the existing detailed proposals for the new rail hub in Option 3, and the second assuming that it can be modified to reduce the impacts on the existing NEIZ. In both cases it is assumed that a satisfactory connection can be made to any ring road proposals in the Bunnythorpe area since these are in the process of development and should be capable of being modified to accommodate the requirements imposed by the two terminal location options. As a result the connectivity to this would be similar for both hub options 3 and 4..

The initial proposals for hub Option 3 considered at Workshop 3 assumed that Railway Road would be diverted and this route would serve both the longer distance flows between Bunnythorpe and Palmerston North and the access needs of the hub with the potential for conflict with movements associated with the existing firms in the North East Industrial Zone (NEIZ. This was scored accordingly. For Option 4 these two functions would be separated, providing a similar level of service to firms located in the NEIZ to that currently provided.

During the workshop discussions it was agreed that the ratings for Option 3 with Railway Road relocated in respect of the "Impact on economic activities in the vicinity of the hub" should be changed from 4 to 3, and that the score for the conformity of Option 4 with the PNCC planning aspirations should be changed from 1 to 2 . These revised figures are included in the highlighted entries in Table 1 below

Subsequent to the discussion in Workshop 3, potential mitigation measures were identified and are currently being investigated. In these, the different roading functions could be separated in a way that did not reduce the level of service and accessibility for firms in the NEIZ below that currently offered, so reducing the conflict with other users. On the basis that these would be implemented in some form, the second assessment was undertaken. In the course of this, the assessment for Option 3 was revised, further improving the score related to the "Impact on economic activity in vicinity of hub" from 3 to 2 . In addition the revised layout with the mitigation of the impacts on the existing activities in the NEIZ created an improved conformance with PNCC planning objectives. These changes are highlighted in Table 2.

Table 1
Addendum 1 - Detailed assessment of location options : Option 3 as currently proposed

Criteria for assessment		2	3	4	Weight
1 Integration with existing economic activities					
Inbound movements	Primarily movements to DCs. Key DC locations Kelvin Grove, North East Industrial Zone (NEIZ) Tremaine Ave (for Toll, Mainfreight and Peter Baker Transport -PBT)	3	1	1	1
	Logs	2	2	2	1
Outbound movements	Food products from Longburn area	5	4	4	0.5
2 Potential for new development in vicinity of hub		3	2	2	1
3 Proximity to workforces in city		4	2	2	1
4 Accessibility provided by strategic transport modes					
	Linkages with proposed ring road	3	2	2	1
	Linkages with other components of the road network	3	3	2	1
	Linkages with the airport	3	2	2	0.5
5 Conformance with PNCC planning aspirations		4	3	2	1
6 Impact on economic activities in vicinity of hub		4	3	1	1
Combined score		**3**	**2**	**2**	

Table 2
Addendum 1 - Detailed assessment of location options : Option 3 redesigned to reduce impact on NEIZ

Criteria for assessment		2	3	4	Weight
1 Integration with existing economic activities					
Inbound movements	Primarily movements to DCs. Key DC locations Kelvin Grove , NEIZ, Tremaine Ave (for Toll Mainfreight and PBT)	3	1	1	1
	Logs	2	2	2	1
Outbound movements	Food products from Longburn area	5	4	4	0.5
2 Potential for new development in vicinity of hub		3	2	2	1
3 Proximity to workforces in city		4	2	2	1
4 Accessibility provided by strategic transport modes					
	Linkages with proposed ring road	3	2	2	1
	Linkages with other components of the road network	3	3	2	1
	Linkages with the airport	3	2	2	0.5
5 Conformance with PNCC planning aspirations		4	2	2	1
6 Impact on economic activities in vicinity of hub		4	2	1	1
Combined score		**3**	**2**	**2**	

The changes would have the effect of producing similar average scores for Options 3 and 4 with a rating of 2 in both cases.