Analysis of the potential economic development and wider economic impacts of the proposed new Regional Freight Hub in Palmerston North

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1 Introduction

1.1 Name and employment

1.1.1 Introduction

My name is Richard Paling, and I am an independent transport and economics consultant with over 40 years experience.

I have been engaged by Stantec to provide advice on the economic development and wider economic effects associated with the proposed rail freight hub to assist in the preparation of the Assessment of Effects on the Environment Report ("**AEE**") and to support the Notice of Requirements lodged by KiwiRail to designate the land to provide for the construction and operation of a new multimodal freight hub (Freight Hub) north of Palmerston North.

As part of this I have participated in the MCA workshops considering the possible development impacts of alternative locations for the hub including the assessment and scoring of the options against the background of the freight position in the area. My other relevant experience includes the below.

Wider economic effects of transport investment

I undertook the development of initial work in New Zealand on understanding the linkages between transport provision and economic development with publications for the Ministry of Economic Development in 2006 and 2007. This 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. The development of the initial framework was followed by a number of studies applying these techniques particularly in Auckland for which 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.

In addition the recent focus of the Provincial Growth Fund in providing finance for transport projects in the more remote parts of the country has required approaches which allow the economic development impacts of these investments to be assessed on a broadly consistent basis. I have developed approaches to be used to assess these impacts on a quantitative manner and have applied these in studies in Tairāwhiti and Northland.

Freight studies

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 2008 and the subsequent two updates in 2014 and 2019 and have also undertaken a range of regional and local freight studies. These include work 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.

1.2 Project Description and review of the relevant project information

The proposed project includes the relocation and upgrade of the existing KiwiRail rail yard lying to the north of Tremaine Avenue (Existing Freight Yard) to a location on the northern edge of the North East Industrial Zone (NEIZ) between the airport and Bunnythorpe lying to the west of Railway Road (Site). It is intended that that the Site will provide improved facilities for the marshalling of through traffic together with enhanced opportunities for the transfer of freight between rail and road. The Site will also provide space for freight forwarders handling traffic into and out of the Palmerston North area with direct rail access into their facilities and other facilities for the handling of intermodal freight and associated activities.

I have reviewed:-

- The plans of the Site
- Central North Island Regional Freight Hub Integrated Transport Assessment
- Concept Design Report - Intermodal Freight Hub
- Social Impact Assessment
- Intermodal Freight Hub Masterplan - Palmerston North Report
- Transport impact assessment

1.3 Purpose and scope of this assessment

The purpose of this assessment is to assess the economic effects resulting from the construction of the new Freight Hub to the north of the city and the relocation to this of the existing activities currently undertaken at the Existing Freight Yard.

2 Factors relevant to assessing the economic effects

2.1 Introduction and Methodology

Economic effects will potentially arise where the new Freight Hub impacts on the level of employment and economic activity in the Palmerston North area and the surrounding area, with effects on the wellbeing of the community. There are also wider economic effects resulting from the increasing provision of rail freight, although these may be challenging to quantify reliably.

The below and section 3 of the report sets out the approach I have undertaken to assess these impacts. It is worthwhile noting that while there is widely perceived to be a linkage between the provision of improved transport services and economic growth, there are no established procedures for quantifying this linkage. In particular, economic development is typically dependent on the actions of third parties which cannot be predicted with absolute certainty. Thus while some quantification is possible in an analysis of the possible effects of the Freight Hub, especially in defining the economic background against which the Freight Hub has been considered, the assessment of the scale of the effects is essentially qualitative. I have undertaken this assessment based on my expertise and experience.

Factors relevant to the assessment of the economic development impacts of the proposed Freight Hub that are assessed below are:

- The general background to the project
- Rail freight
- Location of Palmerston North as a freight hub
- Establishing the current state of the local economy and the way in which it has been evolving over recent years.
- Assessment of the existing pattern of freight flows
- Assessment of the overall freight patterns for the region and the way in which these have been forecast to change over the future

In section 4 of this report I separately assess the economic effects of the project on particular elements within the context of the above.

2.2 Sources of information

- Data on employment statistics published by Statistics New Zealand as part of the Business Demographics Database (BDD)

- National Freight Demand Study (NFDS) 2017/18, available on the Ministry of Transport website and further freight modelling using the approach set out in the MoT Transport Outlook: Future State Model Results
- Information on patterns of rail flows from KiwiRail
- Discussions with logistics and distribution firms August 2019
- Published plans by PNCC and CEDA
- KiwiRail Statement of Corporate Intent 2021-2023
- Draft New Zealand Rail Plan 2019
- EY Report "The Value of Rail in New Zealand – 2016" prepared for NZTA, dated 2 September 2016
- NZ Cabinet Paper – The Future of Rail and Investment to Support a Resilient and Reliable Rail System dated 16 May 2019

2.3 Existing Freight Yard

The Existing Freight Yard was developed in the 1960's before the advent of the movement of freight in containers and other unitised forms. It has subsequently evolved to accommodate the movement of containers and other unitised traffics and also increasing volumes of logs as the forests in the Manawatu-Whanganui region mature. However its age and size have resulted in operational inefficiencies and difficulties in establishing a coordinated working environment.

2.4 Rail Freight

The Draft New Zealand Rail Plan published in late 2019 identifies "Investing in the national rail network to maintain freight rail and provide a platform for future investments for growth" as a Strategic Investment Priority. It recognises that rail is a key part of New Zealand's freight supply chain with strong positive social, economic and environmental benefits and looks to support growth in the regions through completing the rail investments committed through the Provincial Growth Fund for which the proposed investment in Palmerston North is one.

An estimate of the benefits of the existing rail system in New Zealand is set out in the Value of Rail in New Zealand. This identifies quantified benefits in four main categories

- Reduction in emissions
- Reduction in congestion
- Safety savings
- Maintenance savings

In total the report estimates a value of rail in 2015 of about $1.5 bn of which $0.35 bn related to the movement of freight. This was made up as follows:-

Table 2.1
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

The freight benefits of $347 m can be compared with the total freight movements in 2015 of about 4.5bn net tonne-kms (ntkms) giving an average "value of rail" equivalent to about $0.08 per ntkm.

The report also identifies other non-quantified benefits

- Connectivity Benefits
- Land Use and Value Uplifts

- Resilience Benefits

These elements would also add to the value of rail. Rail's general connectivity benefits arise from the ability of rail to connect people to work, activities, and other people. In terms of freight, connection benefits can also arise from business having greater access to freight lines resulting in better connections for imports and export routes.

Land use and value uplifts can arise when land values in close proximity to train lines and trains stations experience 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 as not all business that rent/ own the property will be able to use the rail line productively and generate returns from it.

Resilience benefits can be seen in rail providing an alternative in the event of a challenge (such natural disaster, storm event or industrial disputes) which disrupts travel by road. The Christchurch earthquake is an example of rail providing resilience to the road network for the transport of goods in the event of a natural disaster and in the Kaikōura earthquake rail assisted in the reconstruction of the main north-south highway.

2.5 Palmerston North's strategic role

Palmerston North city has also developed as an important logistics hub with facilities serving the distribution and transport of goods across the lower North Island typically south of a line between Taranaki and Hawke's Bay. This is an area with a current population of 1.03m, about 22 per cent of the population of the country as a whole (2018 Census). Its role as a logistics hub is facilitated by the central location of Palmerston North on the cross-roads between the main rail lines from Taranaki and Hawke's Bay and the main North Island Main Trunk line (NIMT) connecting Auckland with Wellington and the South Island. A similar position exists for the road network where the city lies on SH3 the main east-west highway route connecting Hawke's Bay and Taranaki and is connected to SH1 the main north south route connecting Auckland with Wellington and Christchurch.

In addition to the role of Palmerston North as a logistics hub, the Manawatu-Whanganui region is an important producer of primary products destined for overseas export markets. 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. 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 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.[1] As a consequence reductions in the costs of transport can have a particular benefit 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 in particular the reliability of the service is probably more important, although savings in transport costs would potentially accrue to the producers.

Given its role as a potential link in the distribution chain for goods moving into and out of the 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.

[1] 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/

The provision of the new Freight Hub will have an 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. As indicated above there will also be wider impacts for the New Zealand economy as whole.

2.6 Freight Hub Benefits

2.6.1 Alignment with national, regional and local strategic objectives

The proposals for the new facility in Palmerston North need to be viewed against the background of the Government's objective to improve the performance of the rail system. The enhancement of rail facilities forms one of the key elements in the Draft New Zealand Rail Plan and the KiwiRail Statement of Corporate Intent for 2021-2023. These identify the opportunities for KiwiRail to play a greater role in supporting economic activity in New Zealand. This would come about both as the result of improved services and handling facilities providing an improved and more cost-effective offering to existing freight customers but also by attracting additional traffic to rail. This will provide wider economic benefits set out above in terms of reduced congestion, maintenance and emissions and improved safety and will improve the resilience of the national transport system.

Accordingly, a need has been identified to provide increased capacity for rail freight interchange in the Palmerston North area to serve the needs of the lower North Island. As the Cabinet Paper on the KiwiRail Palmerston North Regional Economic Growth Hub[2] notes:

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:

- *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).*

The Regional Growth Study, commissioned by the Government in consultation with Horizons and the district and city councils in 2015, identified opportunities to help realise the region's economic potential. The action plan, Accelerate 25,[3] is a joint initiative of local and central government, business and iwi that aims to work towards achieving economic growth in the region. One of the enablers identified in the growth study covers distribution and transport and the Action Plan notes that although the region has a mature transport network it does have specific future requirements including:

[2] Provincial Development Unit KiwiRail Palmerston North Regional Economic Growth Hub 5 November 2018

[3] Accelerate 25, The Manawatu-Whanganui Economic Action Plan August 2016

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*.

In particular;

Palmerston North is a major intersection requiring more investment in streamlined transport movement. *Palmerston North is at the centre of rail and road networks which go toward all four points of the compass. This intersection of multi modal and large product and traffic volumes must be as well designed and efficient as possible. Inefficiency makes the cost of moving goods and services bigger than it should be.*

Following on from this, Chapter 12A of the Palmerston North's District Plan[4] states: "*Specific market requirements for large industrial sites of 5ha and above, and sites which can be accessed on a 24-hour basis, are not readily available in the City's urban industrial area. With projected growth, particularly in the distribution and communication industries in the City, building on Palmerston North's strategic geographic location in the centre of the southern North Island, land is required to accommodate these activities, as well as growth in other types of industrial activity.*

The North East Industrial Zone area was identified as the most suitable area in the City for industrial zoning following a detailed analysis of options. Its location and topography are well-suited to industrial development, services can be provided which will meet the needs of most industrial users, and it is unsuitable for alternative urban uses such as residential largely due to the proximity to the Palmerston North Airport. It can readily be accessed by road and rail, and proximity to the City's airport means that synergies with that mode of transport are also possible. At approximately 233 hectares, and allowing for internal roading and landscaping space, it is large enough to provide for the City's industrial expansion needs for the long-term.

The new Freight Hub will also align with local strategic objectives. The importance of the logistics sector has been recognised in the development of economic growth strategies for the area. As an example, the Palmerston North Long Term Plan 2018-2028[5] has identified logistics as one of the six priority sectors for development stating:

Council has identified six priority sectors that will help determine Palmerston North's future economic wellbeing: healthcare and social services; logistics; education; tourism and visitor activity; research (including a focus on agritech); and government administration and defence. These include sectors experiencing strong growth at a national level, as well as sectors where there is faster growth at a city or regional level than experienced nationally. Council's goal is to support these sectors and help them grow. The Council also wants to develop new growth sectors by capitalising on the city's strengths to ensure it is not overly reliant on a few industries.

2.6.2 Increase in cost efficiencies and competitiveness

[4] Palmerston North City District Plan dated May 2018
[5] Palmerston North 2028. 10 Year Plan 2018-2028, dated 25 June 2018

The new Freight Hub with its improved facilities for handling both intermodal traffic transferring to or from rail at the site and for handling longer trains for traffic passing through the Site will allow improvements to the costs and quality of the rail services using this and should therefore encourage a switch of traffic to rail. In achieving this, the Freight Hub would align with national, regional and local objectives and strategies. This alignment is also likely to ensure that complementary measures required to facilitate the development of the Freight Hub and the associated activities will be supported by the authorities in the area. This will help to make sure that the best use is made of the asset supporting its role in regional development.

Other complementary measures to increase the use of rail and enhance the role of the Freight Hub include steps to improve track capacity, for example by the provision of additional capacity to allow the more efficient operation of freight trains in the Auckland area, increasing the lengths of passing loops and increasing axle weights. These would be supplemented by the purchase of new rolling stock to replace and augment the existing fleet. The more efficient train operations which would result would improve the general competitiveness of rail relative to road encouraging a shift of traffic and contributing to the Government's environmental and sustainability objectives.

Efficiency impacts of the new Freight Hub are further discussed in section 4.1 below.

2.6.3 Through traffic improvements

As well as impacting on Palmerston North and the wider Manawatu-Whanganui region, the Freight Hub will also allow the introduction of longer, more cost efficient trains. At present, almost all freight passing through the Existing Freight Yard, including traffic using the lines connecting Taranaki and Hawke's Bay as well as the main north-south route, is marshalled at the site. The constraints of the Existing Freight Yard limit train sizes, which has effects on the costs and efficiency of rail operations. The proposed facilities at the Freight Hub will accommodate the operation of 1500m trains on the key route between Palmerston North and Auckland and improved handling of services on the other lines served by the Freight Hub.

2.7 Importance of logistics in the Palmerston North economy

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 Island. As discussed above, 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:-

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.

At a more detailed level, the importance of distribution and logistics activities in the Palmerston North economy to which the Freight Hub would contribute is highlighted in Table 2.2. This shows the relative shares of employment in the key distribution and logistics sectors of Palmerston North and compares this to the position of the country as a whole.

Table 2.2
Employment in transport and logistics related activities in Palmerston North and New Zealand 2019
(percentage of total employment)

Type of activity	Palmerston North	New Zealand
F Wholesale Trade	6.7%	5.3%
F33 Basic Material Wholesaling	1.0%	1.0%
F34 Machinery and Equipment Wholesaling	1.4%	1.5%
F35 Motor Vehicle and Motor Vehicle Parts Wholesaling	1.1%	0.4%
F36 Grocery, Liquor and Tobacco Product Wholesaling	2.6%	1.1%
I461 Road Freight Transport	1.8%	1.3%
I471 Rail Freight Transport	0.2%	0.1%
I51 Postal and Courier Pick-up and Delivery Services	0.7%	0.6%
I53 Warehousing and Storage Services	0.3%	0.3%
Total logistics related activities	9.7%	7.6%

Source: Statistics New Zealand Business Demographics Database

The activities identified as being associated with logistics contributed almost 10 per cent of the employment in Palmerston North City compared to about 7.6 per cent nationally. This represents a share of local employment that is almost 30 per cent higher than the national position.

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 as can be seen in Table 2.3.

Table 2.3
Growth in employment in logistics related activities 2015-2019

Type of activity	Palmerston North	New Zealand
F Wholesale Trade	13.3%	9.2%
F33 Basic Material Wholesaling	4.2%	10.1%
F34 Machinery and Equipment Wholesaling	-11.3%	3.3%
F35 Motor Vehicle and Motor Vehicle Parts Wholesaling	25.0%	12.8%
F36 Grocery, Liquor and Tobacco Product Wholesaling	30.0%	17.5%
I461 Road Freight Transport	22.7%	11.2%
I471 Rail Freight Transport	0.0%	-7.1%
I51 Postal and Courier Pick-up and Delivery Services	9.7%	50.0%
I53 Warehousing and Storage Services	6.7%	22.1%
Total growth in logistics related activities	**14.1%**	**8.3%**
Total growth in all industries	**8.3%**	**11.2%**

Source: Statistics New Zealand Business Demographics Database

Distribution and logistics activities are clearly important to Palmerston North and their contribution in terms of employment has in general been growing faster in the city than in New Zealand as a whole. Within the city, employment in logistics has also been growing faster than general employment. This has particularly been the case for the movements of goods 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 both national as well as regional markets. National distribution centres have been established by firms like Ezibuy, who at times have also used the facility to distribute to Australian markets, Toyota who have their national parts distribution centre in the city, Steelfort who distribute Miele goods nationally and Norwood who distribute agricultural machinery parts nationally from their Palmerston North warehouse.

Firms distributing to regional markets in many cases covering much of the lower North Island including Taranaki and Hawke's Bay include:

- Countdown
- Foodstuffs
- Bidfood
- Americold
- Steel and Tube

These firms are concentrated in three main areas:

- Kelvin Grove
- NEIZ
- Milson

2.8 Importance of logistics to the wider regional economy

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 area. The districts surrounding the city are important producers of manufactured food products, particularly meat and dairy products. Employment in these sectors account 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. 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. The Existing Freight Yard plays an important role in the movement of these and improved services would have benefits for the exporters.

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 the Government's broader climate change objectives.

2.9 Existing pattern of movements through the Existing Freight Yard

2.9.1 Introduction

The Existing Freight Yard is an important part of the logistics chain in the area providing an important interface between the longer distance movement of freight by rail and either its onward distribution to the local area for goods carried by rail into the region or as a collection point for goods moved by road for outward movement by rail. In this latter role it primarily supports the movement of primary products generated in the region. The inbound movement of goods supports the role of Palmerston North as a major distribution centre for the lower North Island.

Within the broader area, 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.

2.9.2 Goods movements through the Existing Freight Yard

The volumes of goods handled at the Existing Freight Yard in 2019 are set out in Table 2.4.

Table 2.4
Main freight flows through the Palmerston North Existing Freight Yard 2018/9 (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	0.00	6.1	6.1
Total*	**355.5**	**313,1**	**668.6**

Source: KiwiRail *Note that the table uses rounded figures

The distribution of commodities by type for inbound and outbound flows is set out in Figure 2.1 and Figure 2.2.

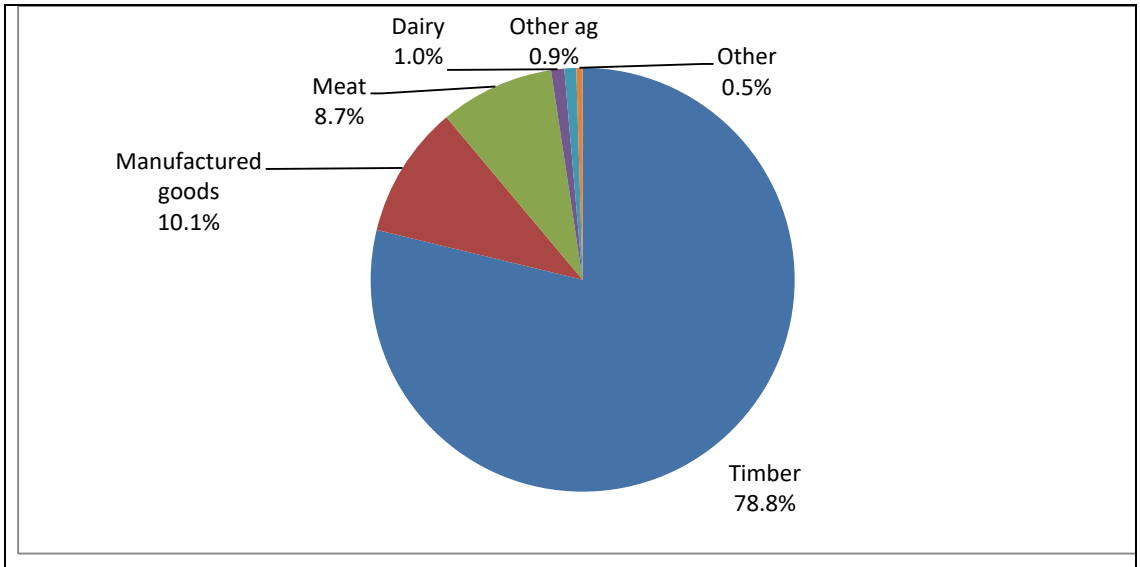

Figure 2.1
Outbound flows from the Existing Freight Yard 2018/19 (m tonnes)

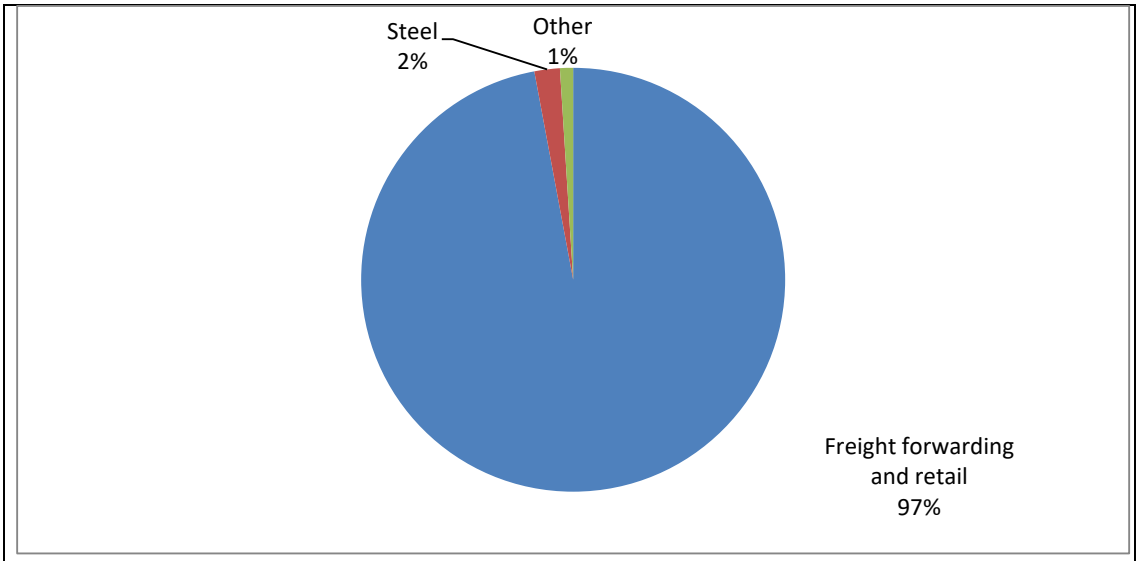

Figure 2.2
Inbound flows to the Existing Freight Yard 2018/19 (m tonnes)

In total, the Existing Freight Yard handles about 0.7 m tonnes of cargo in a year, about 3-4 per cent of the total volumes transported by rail in the country as a whole. Just over half of the flows are outbound, mainly comprising the movements of logs for export through Wellington or Napier. Other important commodities moving outbound are manufactured goods to a wide range of destinations but with about a third for export, and meat mainly for export through Wellington and Napier.

Inbound flows are almost entirely freight forwarding and retail goods mainly from Auckland (73 per cent), Wellington (10 per cent) and Hamilton (6 per cent). 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.

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.

2.9.3 Through traffic

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 facility serves a number of rail traffic flows including:

- Auckland to Wellington and the SI (and return)
- Whareroa to Auckland, dairy
- Whanganui to Wellington and north
- Other traffic to and from New Plymouth
- Gathering traffic from nearby stations to ship onwards, especially to the north (Pahiatua, Longburn, Marton)
- Karioi to Napier (pulp)
- Other traffic to and from Napier

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 m tonnes in 2019, about 13 per cent of the total freight carried by rail. 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 an upgraded freight hub would therefore have a widespread impact over the rail network and its customers across the country.

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

The number of train movements through the Existing Freight Yard amounted 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 Section 3.2.

2.10 Freight patterns and forecasts

2.10.1 Introduction

The movement of goods through the Existing Freight Yard can be seen in the context of the overall movements of freight both nationally and into and out of the 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 these commodities.

2.10.2 National freight patterns

The revised National Freight Demand Study (NFDS)[6] and use of the associated Ministry of Transport freight modelling gives a total growth in national domestic freight movements of about 45 per cent over the period from 2017/18 to 2052/53. These forecasts have been produced recently and would therefore replace earlier estimates that are included in the Masterplan. The Masterplan forecasts assumed a total freight demand of 393m tonnes in 2050, compared to the revised NFDS which has forecast of 404m tonnes in 2052/53.

However although the total forecast future freight demand has remained broadly unchanged from that forecast in the Masterplan (393n tonnes in 2050 for the Masterplan and 404m tonnes with the revised forecasts, there are differences in the growth patterns for the different commodities. The details of the national position identified for 2017/18 and the forecast growth to 2052/53 are set out in Table 2.5.

[6] "National Freight Demand Study 2017/18" Ministry of Transport September 2019

Table 2.5 National Freight Demand Study estimates and forecasts for New Zealand 2017/18 and 2052/53 (m tonnes)				
Commodity	**2017/18**	**2052/53**	**Growth (m tonnes)**	**Growth (per cent)**
Liquid Milk	22.8	22.9	0.1	0.5%
Manufactured Dairy	6.6	6.7	0.1	0.4%
Logs	36.5	34.9	-1.6	-4.4%
Processed Timber	10.0	11.6	1.6	16.5%
Meat	1.3	1.3	0.0	0.0%
Livestock	5.6	5.6	0.0	0.0%
Horticulture	5.9	7.7	1.8	31.4%
Wool	0.3	0.3	0.0	0.0%
Other Agriculture	5.5	5.5	0.0	0.0%
Fish	0.4	0.4	0.0	0.0%
Coal	3.5	0.0	-3.5	-100.0%
Petroleum	9.1	11.2	2.1	22.4%
Building materials	60.5	127.5	67.0	110.8%
Steel and Aluminium	3.6	4.5	0.9	24.3%
Manufacturing & Retail	96.7	145.3	48.6	50.2%
Waste	9.4	16.0	6.6	70.5%
Other Minerals	1.0	1.9	0.9	98.0%
Total	**278.7**	**403.4**	**124.7**	**45%**

Source: NFDS 2018 and Consultants estimates using the Ministry of Transport freight model

Substantial growth is expected in the movements of building materials and manufactured goods reflecting the increased demands arising from increasing GDP and population in New Zealand. These are forecast to grow by over 100 per cent and 50 per cent respectively to 2052/53.

Growth is anticipated to be only limited for many primary products. The flows of milk and dairy products are expected to plateau as the production of milk stabilises, with a greater focus on higher value products. Similarly the volumes of meat products are expected to continue to remain broadly constant again with a greater focus on higher value products. Both of these reflect emerging trends in these industries and will mean the flows of these products outbound from Manawatu are likely to remain the same – this is described in section 2.10.3 below. There is also anticipated to be growth in horticulture, but the volumes involved are smaller and would have a minor impact on Manawatu.

While the flows of milk and dairy products are likely to remain broadly constant in volume terms, a major feature of the forecasts is however the scale of the log harvest and the extent to which this will be utilised for domestic production. The flows of logs are very volatile and fluctuate 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. 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 2040's. 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 2052/53 are below the levels currently being harvested and transported. Given the volatility of production it must be stressed however that there is considerable uncertainty attached to these forecasts and the levels of output that would arise beyond the forecasting period.

2.10.3 Freight patterns in the Manawatu-Whanganui region

Considering the position at a more local level, the forecasts for the movements into and out of Manawatu-Whanganui region are set out in Table 2.6. Because of the uncertainty associated with the log forecasts, the totals have been provided both excluding and including logs.

Table 2.6
Forecasts of freight movements into and out of the Manawatu-Whanganui region 2017/18 and 2052/53 (m tonnes pa)

Commodity group	Inbound			Outbound		
	2017/18	2052/53	Forecast growth	2017/18	2052/53	Forecast growth
Logs	0.1	0.0	-71%	1.73	0.50	-71%
Timber products	0.1	0.1	-4%	0.49	0.48	-1%
Milk and dairy	0.7	0.6	-3%	1.49	1.46	-2%
Meat	0.0	0.0	0%	0.18	0.18	0%
Livestock	0.2	0.2	-3%	0.26	0.26	-2%
Horticulture	0.2	0.2	4%	0.02	0.02	17%
Other agriculture	0.3	0.3	1%	0.04	0.04	6%
Petroleum	0.4	0.4	-1%	0	0.00	0%
Building materials	0.3	0.5	43%	0.3	0.5	72%
Steel/Aluminium	0.0	0.0	0%	0	0.00	0%
Manufacturing & retail	2.1	2.7	33%	1.76	2.09	19%
Waste	0.0	0.0	0%	0.03	0.04	17%
Total excluding logs	4.2	5.1	21%	4.51	5.06	12%
Total including logs	4.3	5.1	18%	6.24	5.56	-11%

Source: NFDS 2018 and Consultants estimates using the Ministry of Transport freight model

To a large extent, the position for the Manawatu-Whanganui region mirrors that for the country as a whole with substantial growth in building materials and manufactured and retail goods, commodities which are linked to the level of economic and population growth.

The volumes of primary products are mainly expected to largely remain broadly stable at current levels, with the exception of horticulture where a small increase in flows is predicted.

In the case of logs there are forecast to be substantial changes in the movements into and out of the region, reflecting the MPIs forecasts discussed earlier. As indicated earlier, the output of logs tends to go in cycles and while forecasts for 2052/53 are below those for the 2017/18, they would be increasing from a low point predicted for the 2040s. Over the long term beyond the position is likely to be affected by the Billion Trees programme[7] which could increase the numbers of logs harvested in the catchment area of the Freight Hub.

Other factors that may affect the volumes of logs transported through the Freight Hub at Palmerston North include the potential development of additional sites for loading logs onto the rail network (which may offer a more economic means of transport if the distances travelled by road can be reduced) and the possibility of the development of a new major timber processing facility at Marton. Although this would reduce the volume of logs available for export, it may lead to increases in the volumes of processed timber for export handled at the hub.

The implications of these regional growth figures for the Freight Hub are set out in Table 2.7

[7] CAB-18-MIN-0379.01The One Billion Trees Programme: Actions and Decisions for Implementation September 2018

Table 2.7
Forecast growth in the main freight flows through the main Palmerston North Freight Hub 2017/8 - 2052-53
(000 net tonnes)

	Outbound			Inbound			Total		
	Flow in 2018/19	Growth from 2017/18	Flow in 2052/53	Flow in 2018/19	Growth from 2017/18	Flow in 2052/53	Flow in 2018/19	Growth from 2017/18	Flow in 2052/53
Dairy	3.5	-2%	3.4	0	-3%	0.0	3.5	-2%	3.4
Manufactured and retail items	35.9	19%	42.6	303.8	33%	403.6	339.7	31%	446.2
Meat	31	0%	31.0	0	0%	0.0	31	0%	31.0
Other agriculture	3.2	6%	3.4	0	6%	0.0	3.2	6%	3.4
Other	1.7	19%	2.0	3.1	33%	4.1	4.8	28%	6.1
Steel and aluminium	0	79%	0.0	6.1	43%	8.7	6.1	43%	8.7
Total exc logs	75.4	9%	**82.4**	313.1	33%	**416.4**	388.5	28%	498.8
Logs	280.1	-71%	81.3	0	-71%	0.0	280.1	-71%	81.3
Total	**355.5**	-55%	**163.7**	**313.1**	33%	**416.4**	**668.6**	-13%	580.1

For the core unitised traffic flows particularly of manufactured and retail goods transported to the distribution centres in Palmerston North, the traffic through the Freight Hub is forecast to grow fairly substantially by 2052/53, driven to a large part by the increases in GDP forecast for the city and the region.

It should be noted that these forecasts both for the region as a whole and for the Freight Hub assume distribution patterns and modal shares similar to those currently in operation. They 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, especially with an improved facility. Thus rail could participate in markets that are growing strongly particularly in the movement of manufactured and retail goods into the region. In addition, the provision of improved intermodal logistics provided by the new Freight Hub could provide an opportunity for increasing the share of rail in the markets it is already serving and also possibly expanding into new markets. These would increase the volumes of commodities travelling by rail through Palmerston North and help in the achievement of both KiwiRail and the Government's objectives for the development of a sustainable transport system.

3 Methodology for assessing effects

3.1 Introduction

Economic effects on the community arise where the new Freight Hub would affect the level of employment and activity in the Palmerston North area. This assessment incorporates a number of the criteria that were used to assess the **relative** impacts of alternative site locations as the planning for the Freight Hub developed and then expanded to include factors which would affect the total impact of the new Freight Hub.

As set out above, there are also wider national economic impacts that would arise from the provision of the improved rail service facilitated by the construction of the new Freight Hub. While these are challenging to quantify for the new facility, they are generally positive and show wider benefits to the country as a whole. While recognising that these broad impacts would exist, the next section focuses on the particular economic development effects in the Palmerston North area.

3.2 Categories of impacts

I was involved in the workshops in Palmerston North in 2019 undertaking a multi criteria assessment of alternative sites for the new Freight Hub. The categories used for the assessment of the potential economic development impacts of the relocation of the hub were developed to cover the range of effects that might be expected and initially used to identify the relative attractiveness of different hub locations in the Palmerston North area. As this stage, this is an assessment of the effects of the particular Freight Hub Site, not an assessment of alternatives, the list of categories have been amended to focus on factors which relate to the absolute benefits for the scheme rather than the relative attractiveness of alternative locations.

The list of factors considered in assessing the economic development impacts of the new Freight Hub therefore comprises:-

- Improved freight handling and reduced costs for existing users in the Palmerston North and surrounding area.
- Potential for new development in the vicinity of the Freight Hub
- Access to the workforce
- Impact on existing firms in the vicinity of the Freight Hub
- Provision of development space within the Existing Freight Yard for new activities
- Impacts during construction

3.3 Scale of assessment

- High positive
- Moderate positive
- Negligible
- Moderate negative
- High negative

Each of the categories defined was given a rating based on this scale.

4 Assessment of effects

4.1 Impacts for existing users in the Palmerston North area

In terms of its economic development impacts, the new Freight Hub on its larger Site will provide benefits arising from:-

- Improved facilities for marshalling trains allowing the introduction of trains of up to 1500m in length for the route between Palmerston North and Auckland compared to the current maximum of 900m.
- Improved handling facilities for goods transferring between road and rail both for unitised cargos (either in standard export containers or in lighter intermodal units for the domestic market) and other products particularly logs.

As a result of these improved handling facilities and the longer trains, the efficiency of the supply chain for goods moved into and out of Palmerston North will be improved, potentially reducing the costs of transport and improving the reliability of the service provided to users in the area. This would provide opportunities and benefits to those sending goods through or for handling at the Site and would 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 industry 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.

Increasing the role of the Freight Hub could 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 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 would grow.

In the course of interviews[8], one of the major freight forwarding companies has indicated that they would probably relocate to the Site to gain the advantage of direct rail access into their premises and it is likely that others would follow suit. 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 Site would also be reasonably accessible to the other distribution centres located along Tremaine Avenue and in Kelvin Grove and the presence of the Freight Hub is likely to attract other users to the NEIZ.

The improvements in freight services and more efficient supply chains for firms located in the catchment area of the Freight Hub would also support local producing industries with a focus on export markets particularly those in the manufacture of food products reflecting the emphasis in the economies of Palmerston North and surrounding areas.

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. Traffic evidence 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 hub itself or to a site adjacent to the Freight Hub.

The impact of this overall is expected to be **moderate positive**.

4.2 Potential for new development in the vicinity of the Freight Hub

There is little quantitative evidence on the scale of the potential for new freight hubs to generate increased economic activity, and it is therefore challenging to assess the scale for this impact

However the qualitative assessment would suggest 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 supply opportunities to accommodate any new or relocated activities, allowing these to gain the benefits from the expanded Freight Hub.

[8] 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.

The use of the Freight Hub Site within the NEIZ for the Freight Hub means that space could not be completely used by other firms wishing to relocate to the area. However, the evidence suggests that there has been only a limited take up of land in the NEIZ to date. The Freight Hub may also provide the opportunity for some of the firms that would have otherwise located in the NEIZ outside the hub to take up opportunities within the Freight Hub itself.

The impact of this overall is expected to be **moderate positive**.

4.3 Access to the workforce

The proposed Freight Hub Site lies at a greater distance from the residential centres of the workforce in Palmerston North. This will potentially increase the commuting costs of workers travelling to the Site from the major urban area.

The new location 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 new Freight Hub Site 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 on the Site, as to the scale of the impact on the efficiency of operations.

In practice this effect is likely to be limited and would also probably diminish over time as workers relocated to be closer to their places of work.

The impact of this overall is expected to be **small negative**.

4.4 Impact on existing firms in the vicinity of the Freight Hub

While in general as discussed earlier 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 the relocation of the transport function of Railway Road around the hub as the link between the east of Palmerston North and Bunnythorpe, Feilding and areas to the north would impact on the activities currently located along Roberts Line, increasing the traffic flows along the road. To the extent that access into the sites on Roberts Line is made more difficult as a result, this may have the effect of making these businesses less attractive locations. While the evidence for this is limited, firms located along Tremaine Avenue have complained about the difficulties of accessing their sites from a busy main road and this may also become the case for firms located along Roberts Line without mitigation.

In this case, the impact of this overall is expected to be **small negative**.

There is however the potential to develop measures which would mitigate these access issues. With these the impact on the existing firms in the vicinity of the Freight Hub is expected to be **negligible**.

4.5 Provision of sites for redevelopment within the existing urban area

By moving away from the location on Tremaine Avenue, the relocation of the Freight Hub including associated operations like freight forwarders handling goods by rail will free up space for activities that are suited to the area vacated. The Existing Freight Yard location has good proximity to the central area of the city and other commercial activities along Tremaine Avenue, with these commercial activities remaining after the relocation of Existing Freight Yard.

It is not certain at present what would be the potential use for this area, noting that the land has been used for an operational rail site for 50 years and would be bordered by a busy operational rail line and a heavily trafficked road. In its present state it may not be suitable for a range of sensitive uses. Any redevelopment of the site would need to comply with planning requirements, including national environmental standards. However it is likely that the site would be suitable for activities which would benefit from proximity to the city centre or the surrounding residential areas, and could play a role in encouraging economic development in the city.

The work involved in the redevelopment of the site in whatever form would also add to the levels of economic activity in the city although this effect would diminish as the works were completed.

The impact of this overall is expected to be **moderate/high positive**.

4.6 Impacts during construction

While not yet currently finalised, the scale of investment in the Freight Hub would be substantial. The economic and employment effects of this would be beneficial to the extent that it employed local resources and there is expenditure on goods and services from the local region. At this stage it is not possible to quantify the impacts of this.

The impact of this overall is expected to be **moderate/high positive,** although the effects would only be experienced in the construction period.

5 Wider area impacts

As indicated above, the Freight Hub will form part of more efficient and cost effective rail freight operations in New Zealand, with the potential to attract a greater share of the growing freight task from road haulage. This outcome would be in line with the objectives of the Government to allow rail to play a more significant role in New Zealand's transport system and realise the potential congestion, safety and emissions benefits compared to road transport. While these are of benefit to the nation they are again hard to quantify particularly in terms of their impacts on economic development. While noting these benefits, these have simply been scored as positive but with no attempt to provide a more nuanced assessment.

6 Summary of impacts

Overall, the construction of Freight Hub on Railway Road to the north of Palmerston North is likely to impact positively on the level of economic activity in Palmerston North and the surrounding area.

A summary of specific impacts is set out in the table below.

Table 6.1
Economic effects - Summary

Item	Description	Impact	Temporary or permanent	Timescale
Improved freight handling and reduced costs for existing users	Positive impacts from the redevelopment of the freight hub leading to improved efficiency and reduced costs for customers. The proposed freight hub would be located close to many of its potential customers in the NEIZ, Kelvin Grove and Tremaine Avenue areas who would benefit from the improved facilities	Moderate positive	Permanent	Immediate and continuing over time
Potential for new development in the vicinity of the hub	The scale of activities in the hub and the areas immediately surrounding could provide a critical mass for specialist suppliers in handling and logistics encouraging the relocation or new development of facilities to support these activities, with consequent increases in employment	Moderate positive	Permanent	Medium - long term
Access to the workforce	The relocation of the freight hub further away from the main residential areas would increase the commuting costs for workers although provide opportunities for workers in Bunnythorpe and Feilding	Minor negative	Permanent but probably reducing over time	Impact largest in short term reducing over time
Impact on existing firms in the vicinity of the hub	While most effects are positive some adverse impacts from the increase in traffic flows along Roberts line	Mixed largely positive but with some minor negative effects. Potential for mitigation to reduce this to negligible	Permanent but probably reducing over time	Immediate
Provision of development space within the existing urban area	Would allow redevelopment of Existing Freight Yard for alternative uses. In addition firms relocating to the NEIZ would also free up space for development	Moderate/high positive	Permanent	Medium-long term
Impacts during construction	The economic impacts of the construction of the new hub would be largely positive with the injection of additional funding into the local economy	Moderate/high positive	Temporary	Temporary and very short term only

Overall the combined rating of the economic development impacts assessed is **moderate positive.**

In addition to the local and regional impacts supporting Palmerston North as a strategic logistics centre and providing opportunities for primary producers, the scheme would have a number of other wider impacts. These include supporting the development of a more efficient and cost effective rail system in line with the objectives of the Government and its desire for a more sustainable transport system for New Zealand. In particular the scheme would:-

- improve the capacity of the rail system between Auckland and Palmerston North, providing better resilience on this part of the key transport route between Auckland and Wellington and the South Island;
- create cost efficiencies and increase reliability for customers; and
- provide more attractive services, support a shift of freight from road transport with a consequent reduction in emissions, congestion, safety issues and road maintenance requirements.

While these are real benefits it is not possible to attach a scale to these. The rating for these impacts is therefore **an undifferentiated positive**.