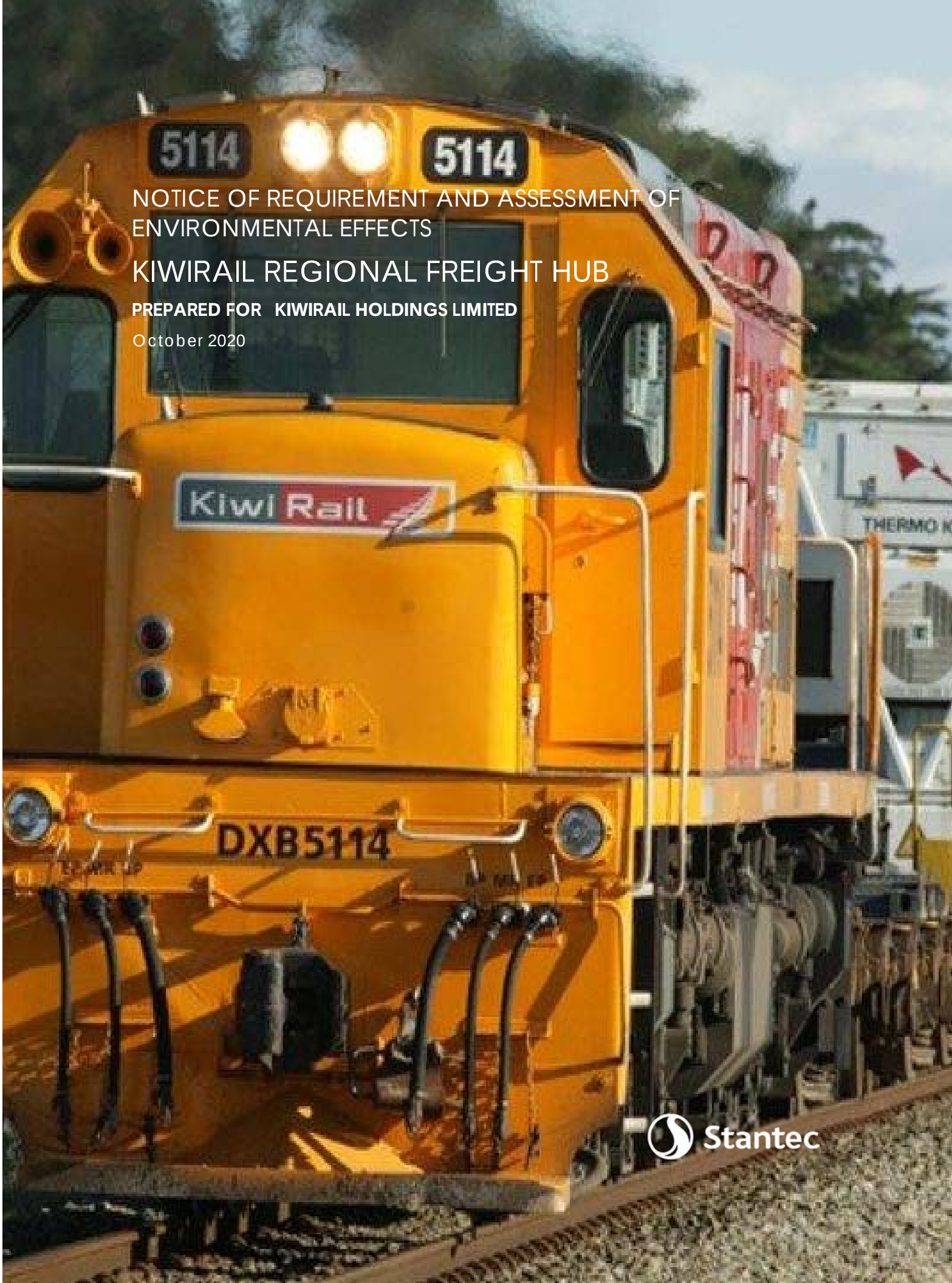

NOTICE OF REQUIREMENT AND ASSESSMENT OF ENVIRONMENTAL EFFECTS

KIWIRAIL REGIONAL FREIGHT HUB

PREPARED FOR KIWIRAIL HOLDINGS LIMITED

October 2020

Stantec

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QUALITY STATEMENT

PROJECT MANAGER	PROJECT TECHNICAL LEAD
Jon England	Karen Bell

PREPARED BY	Karen Bell and Kylie O'Dwyer	 23/10/2020
CHECKED BY	Karen Bell and Kylie O'Dwyer	 23/10/2020
REVIEWED BY	Karen Bell and Kylie O'Dwyer	 23/10/2020
APPROVED FOR ISSUE BY	Jon England	 23/10/2020

AUCKLAND
Level 3 Stantec House, 111 Carlton Gore Road, Newmarket, Auckland 1023
PO Box 13-052, Armagh, Christchurch 8141
TEL +64 9 580 4500

REVISION SCHEDULE

Rev No.	Date	Description	Signature or Typed Name (documentation on file)			
			Prepared by	Checked by	Reviewed by	Approved by

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Executive Summary

Introduction

KiwiRail Holdings Limited (KiwiRail) is seeking to deliver a new Regional Freight Hub (Freight Hub) near Palmerston North and is lodging a Notice of Requirement (NoR) to designate approximately 177.7ha of land (Designation Extent) adjacent to the North Island Main Trunk (NIMT) rail corridor between Bunnythorpe and Palmerston North Airport.

Freight Hub site location looking north from the City

Palmerston North is in a unique location for the Freight Hub. It has main-line rail freight services transiting North – South and East – West and it is well connected to the state highway system. In addition, the wider Manawatu Region is developing as a key production and distribution centre. Recent government policy and funding has seen a shift in emphasis to rail with provision for improvements that will make moving freight by rail a more efficient and attractive option. Moving more freight by rail will result in a reduction in carbon emissions and improve user safety on the road network.

An assessment of the potential for rail freight change was undertaken in 2019. This identified an up to 45% increase in tonnage/business nationally by 2050, with increased container traffic predicted. While train lengths on branch lines including south bound to Wellington are likely to remain restricted to 900m, with increased capacity being managed by increasing train frequency, increased traffic between Auckland/Hamilton and Palmerston North is planned to be accommodated by increasing train lengths by 65% to 1,500m.

The existing freight yard in Palmerston North on Tremaine Avenue (Existing Freight Yard) is surrounded by urban development. It is not able to feasibly accommodate the forecasted growth in rail freight because it is not possible to efficiently operate the yard 24 hours a day and 7 days a week, and work with the 1,500 m long freight trains expected to be travelling north. Given the need to also accommodate the

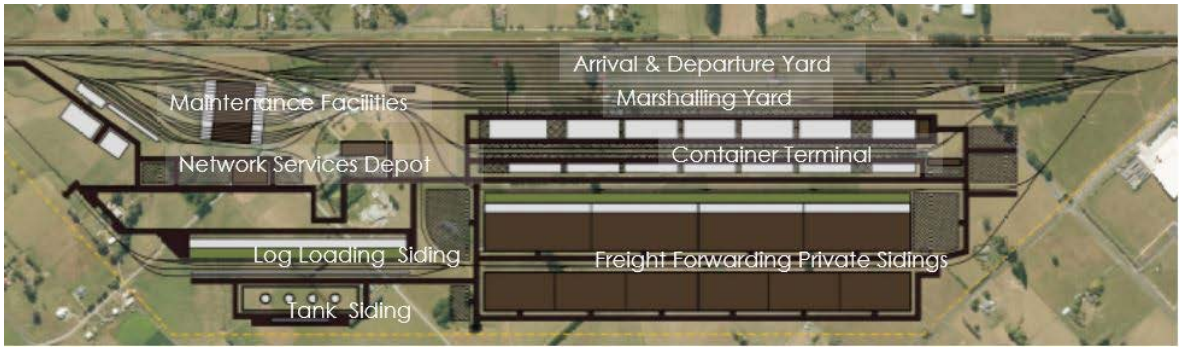
anticipated increase in truck movements accessing Tremaine Avenue, KiwiRail determined that redevelopment of the existing yard was not feasible. KiwiRail therefore obtained funding to look for another location.

Freight Hub Site Selection

In 2019, KiwiRail developed a master plan for intermodal freight hubs that could be applied to site selection in New Zealand. The master plan was used in Palmerston North to assist in identifying a new location for the Freight Hub.

The preferred location was selected following an assessment of alternative locations along the NIMT rail corridor between the Manawatu River (at Longburn) and the Taonui Stream near Fielding. The assessment involved working with stakeholders and a range of independent technical experts (including noise, engineers, transport planners, ecologists, archaeologists) to assess the benefits, impacts and challenges of developing a freight hub in the different locations. Starting with a concept template for a site that was almost 3km long and around 1 km wide, nine locations were assessed using 10 different criteria. Following the review of the nine locations in the long list, three sites located around Bunnythorpe were short listed and a more detailed assessment was undertaken for each site. The preferred site was identified by the technical assessors as being between Bunnythorpe and the Palmerston North Airport on the western side of the North Island Main trunk rail line (NIMT). This location was confirmed by KiwiRail when the location was announced by the Minister on 2 July 2020.

The extent of land needed for the Freight Hub has been determined by adapting the Master Plan to address the local environment and rail related constraints. Key considerations in the development of the Freight Hub's layout was the need to reduce the amount of time freight is in the yard to make rail an attractive alternative mode to moving freight by road, and to ensure that best practice safety and environmental standards are met on the site. This means that the concept layout of the Freight Hub (shown below) has the arrival and departure yard, the marshalling yard, and the container terminal adjacent to each other.



Concept plan showing distribution of key activities

The facilities identified in the figure above occupy an area of approximately 130 ha. In addition, KiwiRail must ensure that there is good roading access and areas to manage environmental effects such as stormwater generated by the increase in impervious area, noise mitigation and planting for visual amenity. The analysis of the site layout identified that the NIMT could be moved westward from its current alignment which would allow the existing NIMT corridor to be used for noise mitigation and planting as well as addressing issues associated with the existing vertical changes along this section of the corridor. Therefore, the total amount of land reasonably required for the Freight Hub is 177.7 ha.

KiwiRail has continued to consult with a range of stakeholders and has communicated with the wider community throughout 2020 using various forms to meet and communicate, given the various Covid -19 alert levels operating through the year.

KiwiRail has engaged with iwi groups since the project was initiated in early 2019. The team will continue discussions with iwi to develop ongoing engagement protocols, and to address and mitigate any identified cultural effects, and to nurture potential benefits.

Notice of Requirement

KiwiRail's objectives in developing a Freight Hub in or near Palmerston North on the NIMT line are to:

- increase its operational capacity to efficiently accommodate projected regional and national freight growth and support wider regional development.
- enable rail to be integrated with, and connected to, other transport modes and networks; and
- improve the resilience of the regional and national freight transport system over time.

To secure the land for the Freight Hub and achieve its objectives, KiwiRail is submitting the NoR under the Resource Management Act 1991 (RMA) to Palmerston North City Council (PNCC) to designate the land for this purpose. This is because:

- a freight hub is not specifically provided for under the PNCC's district plan's zone-based controls or the specific provisions for infrastructure.
- the designation will allow the future use to be shown in the District Plan and provide certainty for the Freight Hub to proceed as the designation process enables the land to be safeguarded from future incompatible industrial and rural-residential development which may hinder or prevent the future work; and
- the use of a designation enables an appropriate degree of flexibility for a project of this scale.

KiwiRail has asked that the NoR is publicly notified.

Other Approvals

Regional resource consents will be sought at the detailed design stage of the Freight Hub. It is anticipated that regional resource consents will be required for:

- bulk earthworks
- discharges from the disturbance of contaminated soil
- stormwater discharged to existing streams from the stormwater management devices; and
- stream works including the diversion of existing watercourses and installation of culverts as existing watercourses will need to be piped.

It is also anticipated that following completion of a detailed site investigation, resource consent will be required pursuant to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health for the change in use and the volume of land disturbed and a resource consent will likely be required under the National Environmental Standard for Freshwater Management 2020 for works in streams.

Given the long history of occupation and development by Maori and Europeans in this area, in addition to the engagement with iwi undertaken, KiwiRail has undertaken an assessment of potential effects on heritage and archaeology. While there are no archaeological sites within the Designation Extent scheduled in the District Plan, KiwiRail will apply to Heritage New Zealand Pouhere Taonga for any required archaeological authorities to undertake the land disturbance works.

Construction and Related Effects

The NoR provides for a range of matters to address aspects of construction. These include:

- KiwiRail continuing to engage with the community through a dedicated community liaison person and implementing a range of processes that include a community liaison forum that will allow KiwiRail to provide information to, and receive feedback from, the community and respond to complaints.
- A largely flat platform needs to be formed across the key operational area for the rail facilities. The level of the platform is largely determined by the arrival and departure tracks that connect at the north and south to the NIMT, as well as the need to meet KiwiRail's operating standards and provide sufficient height to pass overland flows through the site from upstream of the NIMT either by piping or constructed open channels
- Existing watercourses that flow under the NIMT and Railway Road will need to be either piped or diverted. The relocation of the NIMT through the proposed site will allow the current size of culverts to be upsized and this will reduce the potential flooding risk to upstream properties.
- Provision needs to be made for stormwater discharged from the new impervious area to be captured and treated before discharging to the existing watercourses downstream after storm events. This means that the stormwater ponds must be sized to provide storage required for flood attenuation.

The final level of the flat platform is likely to be around 50mRL (the final level may change +/- 0.5m pending more accurate survey information) and as the contours across the area vary, there will be cutting at the high points (such as creating the ponds) and filling at the low points to achieve a consistent level. The initial assessment is that around 1.5 million cubic metres of fill will need to be imported. It is estimated that this will take a little over three years to source, move and consolidate the fill to create the flat platform with works expected to be occurring in different locations at different times. Erosion and sediment control measures will need to be installed and implemented along with dust management measures.

Before earthworks can commence, site investigations will need to be undertaken to confirm the underlying conditions and the nature of the filling required to prevent geotechnical risks such as ground settlement. At the same time soil will be sampled to ensure that there are no harmful contaminants present. If they are, the soil will be removed.

There are impacts on roads and network utilities that are within the Designation Extent. Railway Road north of Roberts Line will need to be stopped. Changes to the form of intersections at Roberts Line/Railway Road and Roberts Line/Richardson Road are also required. Two public level crossings over the NIMT (at Clevely Line, at Roberts Line) and two private level crossings will also be closed. The wastewater main in Railway Road and the gas transmission pipeline that crosses from west to east will be re-routed. Temporary traffic management measures will be put in place,

Forming the flat platform will result in some visual and noise effects on the occupants of surrounding properties. This is because of the relative height of those properties to the existing NIMT, and their proximity to different activities located in the Freight Hub. Given the extent of the works area and the nature of the works it is not practical to screen the entire site during construction, but construction effects will be appropriately managed.

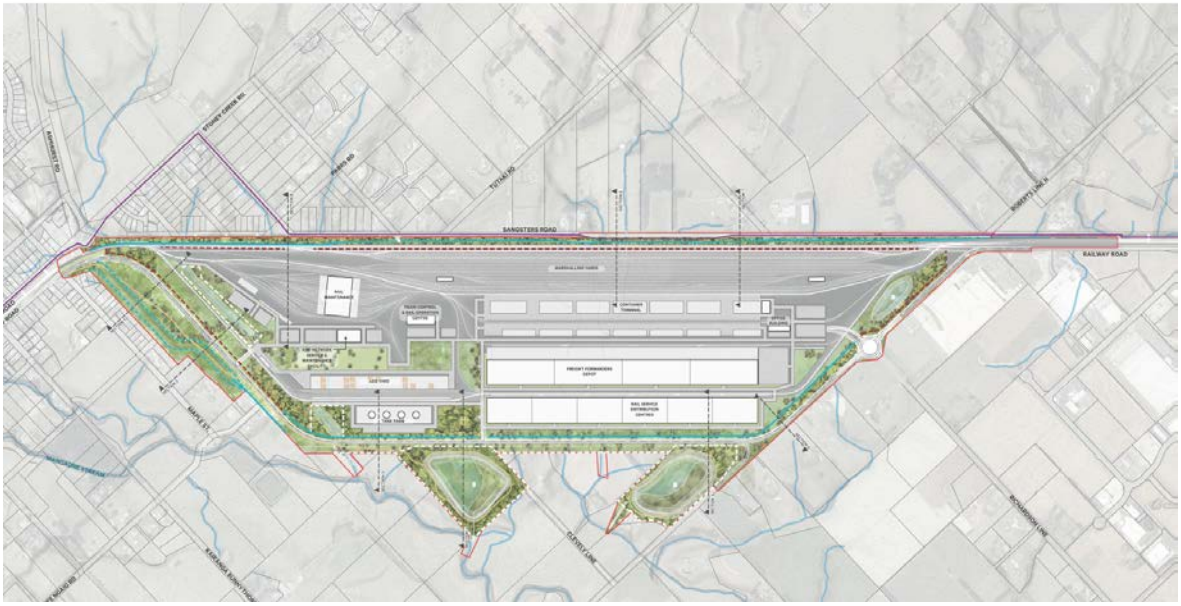
KiwiRail recognises that the local roads directly affected by the Freight Hub are vested in and controlled by PNCC. KiwiRail will work with PNCC to confirm any future changes to ensure that the transport effects of its project are considered and integrated into future works on the wider network. The design of the access roads for the Freight Hub does not preclude future connections to the wider transport network once network decisions have been made about the regional freight routes and the works require to implement these routes.

Operation and Related Effects

KiwiRail anticipates that the Freight Hub will commence operation in approximately six years. The Regional Freight Hub will be fully developed by approximately 2050.

The NoR recognises that the Freight Hub will give rise to social impacts on local residents resulting from a change in the amenity of the environment. While relocating the NIMT west from its current location into the Freight Hub site has the potential to result in localised benefits in terms of noise and vibration, provision has been made for the full operation of the Freight Hub with the proposed installation of noise barriers of specified heights around the Freight Hub to mitigate the noise effects. This includes a noise bund to the north behind properties in Maple Street which. These are not the only noise mitigation measures that are proposed to manage effects on the occupiers of existing houses around the Freight Hub.

An indicative concept landscape plan (shown below) was also developed to show how the visual effects of the Freight Hub will be mitigated. The planting will be undertaken around the stormwater ponds and the open watercourse located on the northern end of the Freight Hub and around the boundary. The proposed planting will improve the level of indigenous biodiversity of the area and result in ecological benefits. The NoR provides for the Freight Hub to operate 24/ 7 when required which will mean lighting will need to be designed to minimise spill.



Indicative landscape plan

Capturing stormwater from the new impervious areas and making sure that it is treated prior to discharge will be an important part of the future operation of the Regional Freight Hub.

There are stormwater management benefits associated with comprehensive development of the land as it will introduce the opportunity to incorporate improved measures for fish passage and opportunities to improve the ecological value of some in-stream habitat through planting and 'decontamination' of stormwater and water passing through the land and ponds prior to discharge.


Bunnythorpe School drop-in session 23 September 2020

Positive Effects

The construction and operation of the Freight Hub will provide employment opportunities and contribute directly to economic growth in Palmerston North and the wider region. Increasing the volume of freight moved by rail because of improving the efficiency of the freight operation in the region will assist in

reducing carbon emissions by reducing reliance on roads for the transport of freight. There will also be improved transport safety benefits related to removing long distance freight movements on roads, as well as changes to intersections and removal of level crossings in the immediate area of the Freight Hub.

Relocation of freight operations from the Existing Freight Yard will also release land along Tremaine Avenue for future development more in line with PNCCs strategic plans, as well as supporting the PNCC's long term plans to encourage rail and industry locating in the north east of the city.

Commonly Used Abbreviations

Abbreviation	Term
AEE	Assessment of Effects
CNIFH	Central North Island Freight Hub
CNVMP	Construction and Vibration Management Plan
CT	Container Terminal
CTMP	Construction Traffic Management Plan
ESCP	Erosion and Sediment Control Plan
HPT	Horsepower per tonne
HRC	Horizons Regional Council
KR	KiwiRail Holdings Ltd
MDC	Manawatu District Council
NEIZ	North Eastern Industrial Zone
NIMT	North Island Main Trunk
NoR	Notice of Requirement
NZTA	Waka Kotahi NZ Transport Agency
OLE	Overhead line equipment
OLFP	Overland Land Flow Path
OPW	Outline Plan of Works
PNCC	Palmerston North City Council
PSR	Precision Scheduled Railroading
PSI	Preliminary Site Investigation
PWA	Public Works Act
RMA	The Resource Management Act 1991
TEU	Twenty-foot equivalent units

Project Glossary

Term	Meaning
Arrival/Departure yard	The tracks used by arriving and departing trains, allowing incoming trains to be held off the mainline until classification takes place. Locomotives are removed/added here.
Ballast	The aggregate 'stones' beneath the rail tracks that form the track bed and supports the track. It also helps with drainage.
Back shunt	Section of track outside the terminal to enable the shunting of trains
Classification	Where wagons are sorted by destination into blocks of wagons that can then be combined in the departure yard to form new trains.
Container	A receptacle or enclosure for holding a product used in storage, packaging, and shipping
Container Terminal yard	Area where containers are transferred from rail to truck and vice versa and includes container storage, rail tracks and truck parking.
Coupler	Mechanism for connecting rolling stock in a train
Horsepower per tonne	Pulling power of a locomotive
Infrastructure	As set out in Section 2 of the RMA
Intermodal hub	Locomotive, cargo handling equipment, and truck activity
Mainline	The principal artery of a railway network
Maintenance Facilities	Where locomotives, wagons and work equipment are maintained and repaired
Manifest Train	Train consisting of a mix of wagons for multiple customers that may go to more than one destination or be split up
Marshalling yard	A train yard where trains are marshalled, generally by shunting as part of breaking down or compiling a train as well as the stabling, light maintenance, inspection, and queuing of trains.
Network Services	The team responsible for the track, structures, signals, power, and other railway infrastructure
North Eastern Industrial Zone	Industrial zoning applied by PNCC to land in close proximity to Palmerston North Airport well-suited to industrial development, readily accessed by road and rail.
North Island Main Trunk	The main railway line running between Wellington and Auckland
Outline Plan of Works	Section 176A of Resource Management Act 1991 requires an outline plan to be developed providing the detailed description (i.e. height, shape and any other matters to avoid, remedy, or mitigate any adverse effects on the environment) of the public work, project, or work to be constructed on designated land. It must be submitted by the requiring authority to the territorial authority to allow the territorial authority to request changes before construction is commenced.

Overhead line equipment	Overhead wires and supporting infrastructure that carry electricity at to power electric train
Precision Scheduled Railroading	A railway operations and management philosophy adopted by the main freight railroad companies in North America
Rail road	Another term for laid rail track – for example the marshalling yard has numerous rail roads
Preliminary Site Investigation	Clause 8(4) of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 requires that Preliminary Site Investigation is undertaken for any subdivision or change in use.
Ruling Grade	Maximum grade on a specific rail line segment, between terminals, which governs the power requirements for a defined trailing load (or the trailing load for defined power)
Run-Around Track	Service track, not used to store wagons or locomotives, which provide a clear, unobstructed route through a yard
Twenty-foot equivalent units	Term used for containers that are usually 40 feet long though originally twenty -foot long boxes were used
Top lifter	Specially designed forklifts that grab containers from the top
Unit train	Train in which all cars carry the same commodity and are shipped from the same origin to the same destination, without being split up or stored en-route.
Zero Harm	An approach to occupational safety with the goal to operate a workplace without exposing an individual to injury through the implementation of safe work systems.

KiwiRail Holdings Limited

KiwiRail Regional Freight Hub

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APPENDICES

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1. Introduction

1.1 Overview

KiwiRail Holdings Limited (KiwiRail) is planning to replace its existing Palmerston North Freight yard with a new future-proofed intermodal freight facility referred to as KiwiRail's Regional Freight Hub (Freight Hub).

KiwiRail's objectives in developing a Freight Hub in or near Palmerston North on the North Island Main Trunk line are to:

increase its operational capacity to efficiently accommodate projected regional and national freight growth and support wider regional development.

enable rail to be integrated with, and connected to, other transport modes and networks; and

improve the resilience of the regional and national freight transport system over time.

The Freight Hub will provide for future demand for freight services in the southern and central North Island. The Freight Hub consists of a centralised hub incorporating tracks, yards, freight handling and storage facilities, provision for stormwater management devices that will be required by a land use of the scale proposed, provision of access to the Freight Hub including road and intersection upgrades where required, and specific mitigation works including noise walls/bunds and landscaping. The Freight Hub also involves the realignment of the North Island Main Trunk (NIMT) line.

1.2 Notice of Requirement and Supporting Information

This report describes the Freight Hub in terms of the requirements of the resource Management Act 1991 (RMA) and has been prepared in accordance with section 171 and the Fourth Schedule of the RMA. The Notice of Requirement (NoR) and supporting information including additional information referred to in this report is detailed in Table 1-1below.

Table 1-1: The Structure of the Documents in this NoR Package

Volume 1	The Notice of Requirement	
	Appendix 1	Designation extent
	Appendix 2	Land Requirement plans and schedule of land included in the designation
	Appendix 3	Proposed Conditions
Volume 2	Assessment of Environmental Effects (this Report)	
	Appendix A	Requiring Authority Gazette Notice
	Appendix B	Concept Plan
	Appendix C	Landscape Plan and Cross Sections
	Appendix D	Master Plan Report
	Appendix E	Community Engagement Report
	Appendix F	Multi Criteria Analysis Report
Volume 2	Technical Report A	Design, Construction and Operation Report
	Technical Report B	Preliminary Geotechnical Assessment

	Technical Report C	Integrated Transport Assessment
	Technical Report D	Acoustics Assessment
	Technical Report E	Landscape and Visual Effects Assessment
	Technical Report F	Assessment of Ecological Values and Effects
	Technical Report G	Stormwater and Flooding Assessment
	Technical Report H	Archaeology Report
	Technical Report I	Contaminated Soil Preliminary Site Investigation Report
	Technical Report J	Social Impact Assessment
	Technical Report K	Economics Assessment

2. KiwiRail's National Rail Freight Network

2.1 KiwiRail's Role

KiwiRail is a State-Owned Enterprise responsible for the construction, maintenance, and operation of New Zealand's rail network. The network extends across New Zealand, connecting primary producers to urban centres and ports. It includes a maritime branch, with three interisland ferries providing transport for passengers, private vehicles, and rail freight between the North and South Islands.

KiwiRail's national rail network shown in Figure 2-1, includes more than 3,700 km of track and 1,300 bridges, with over 200 locomotives available to transport both freight and passengers. KiwiRail employs more than 3,700 New Zealanders[1].

KiwiRail is a requiring authority pursuant to section 167 of the RMA, for its network is a utility operation being the construction, operation, maintenance, replacement, upgrading, improvement, and extension of its railway line having been approved in 2013. The relevant Gazette Notice with the approval is contained in Appendix A.

Figure 2-1: The National Rail Network

[1] Draft New Zealand Rail Plan, KiwiRail, Ministry of Transport 2019, page 10.

2.2 The Benefits and Importance of KiwiRail's National Rail Freight Network

The importance of the rail freight network to New Zealand's economy is demonstrated by the significant volume of freight it carries every year. New Zealand's export volumes are expected to continue to grow over the coming decades, with freight tonnage nationally anticipated to increase up to 55% by 2042 under the Base Case from 237 million tonnes in 2012/13 to 366 million tonnes in 2042/43[2]. Imports are also projected to increase from current levels, with Auckland and Tauranga (relevant to this Freight Hub as sources of many of the freight movements to Palmerston North) showing significant increases through to 2042/43. The movement of freight is expected to play a critical role in New Zealand's economic recovery post Covid -19.

The use of rail for freight services delivers environmental and safety benefits to New Zealand. The environmental benefits include support for a national reduction in greenhouse gas emissions, noting that transporting a tonne of freight by rail generates 66% less emissions than road transport[3]. Rail freight services also support community health and wellbeing goals set by the New Zealand Government, particularly in relation to the reduction in the national road toll. Work by EY Limited in The Value of Rail in New Zealand, EY (for the Waka Kotahi - NZ Transport Agency, 2016) is reported in the Draft Rail Plan as estimating that rail has the potential to eliminate approximately 271 road safety incidents a year because of a reduced dependence on road freight transport[4].

2.3 The National Freight Task

Understanding what freight is moved domestically and internationally and how it is moved is critical to understanding the drivers and need for the Freight Hub. As explained in both the National Freight Demand Study 2014 by the Ministry of Transport and the 2017/18 update, the movement of freight plays a vital role in the economy of New Zealand. Freight is moved out of and into New Zealand primarily by sea and to a lesser extent by air. Goods are moved within New Zealand by rail, coastal shipping, road transport and once again to a much smaller extent by air. An important driver of domestic freight movement is international trade.

Road is presently the dominant mode for moving freight within New Zealand. The Ministry of Transport's National Freight Demand Study 2017/18 reported that 93% of the total freight tonnes moved around New Zealand and 75% of the tonne-km are by road. Rail was reported as moving 5.6% of the total freight tonnes and 11.5% of the tonne-km. This difference reflects the greater average distances for goods transported by rail.

The National Freight Demand Study 2017/18 reported a 30% growth in international trade between 2012 and 2017/2018[5], both in terms of tonnes and container movements. The growth is associated with the growth in exporting of primary products such as logs and in part the growth of containerised traffic related to imports. Auckland and Tauranga Seaports are identified in the National Freight Demand Study 2017/18 as the leading export/import destinations.

The movement of freight within New Zealand is reported to be expected to grow by approximately 45% over the period from 2017/18 to 2052/53 as outlined in the Economics Assessment in Technical Report K, with different commodities growing at different rates.

2.4 Focus on Rail Freight

2.4.1 Changes to Land Transport Management Funding

The New Zealand Government Policy Statement on Land Transport (GPS) 2018 noted, as a strategic priority, that investment in new infrastructure may be required to increase the capacity of the transport network. In making such investments there is a focus on including appropriate technology to ensure high quality transport connections.

[2] Transport Outlook Future State, Ministry of Transport, November 2017, page 57.
[3] Draft New Zealand Rail Plan, KiwiRail Ministry of Transport, 2019, page 12.
[4] Ibid. page 12.
[5] National Freight Demand Study 2017/18, Ministry of Transport, page 4.

In addition, it is a priority of the GPS 2018 that the movement of freight, which is critical for the New Zealand economy, should not result in the loss of life or cause serious injury. It also noted that reducing the volume of traffic (for example by supporting the movement of freight through other modes of transport, such as rail and coastal shipping) can also improve road safety.

The focus on rail in the GPS 2018 also relates to improving the resilience of the transport network by considering climate change impacts. It also noted[6] that when compared internationally, New Zealand's use of transport is emissions intensive and it has the ninth highest per capita transport emissions of all countries with populations over 1 million. It was considered that this reflects several factors, with one of the key ones being that New Zealand is more reliant on road freight than Australia, the European Union, and the United States. In the GPS 2018, the New Zealand Government committed to working to reduce greenhouse gas and harmful pollutant emissions from transport and improve public health outcomes by substantially increasing the use of lower emission modes, such as supporting rail and sea freight.

The GPS 2018 also indicated support for investments that are supportive of regional priorities such as the movement of freight and increasing the resilience of the transport network, and indicated that this investment will be complementary to New Zealand's Provincial Growth Fund (PGF)[7].

As a result of the policy change signalled by the GPS 2018 there have been some significant changes in the past few years that relate to rail in New Zealand and how rail is funded.

This shift provides support for a fully functioning rail freight system with a reliable rail network and rolling stock and less freight travelling by road. The expectation is that a fully functioning rail freight system would reduce demand on roading assets and reduce road fatalities and generate an overall reduction in transport emissions with high commercial returns enabled from the services generated.

The GPS 2018 identified the national rail network as a critical component of the nation's wider transport sector, and the funding provided in the Government's 2019 Budget and 2020 Budget as identified below will assist KiwiRail to work on the rail network to meet future growth demands.

Through the Budget 2019, the Government agreed to provide $1.042 billion as the first instalment for rail investments across the next decade. The Government also agreed to $1 million operating funding to support the implementation of the Future of Rail review (see below). Providing the funding through substantial instalments was both signalling the Government's support for long term investment as well as helping to derive commercial efficiency.

The Budget 2020 provided an additional $1.2 billion for KiwiRail for investment in the track and supporting infrastructure, replacement of the inter islander ferries and associated portside infrastructure and for new wagons and locomotives to replace the ageing locomotives and to upgrade KiwiRail's mechanical maintenance facilities.

2.4.2 Planning for Rail

KiwiRail and the Ministry of Transport produced the Draft New Zealand Rail Plan 2019 (Draft Rail Plan) which identified several areas in which investment in rail infrastructure and facilities is required.

As outlined in the Draft Rail Plan, and relevant to the Freight Hub, over the next 10 years KiwiRail proposes to invest in the following:

- a network renewals and maintenance programme, including works to tracks, bridges, tunnels, and signals
- level crossing safety improvements
- replacement of locomotives and wagons with a more modern reliable and efficient fleet
- improving and upgrading mechanical depot upgrades and renewals
- new interisland vessels and docking facility upgrades
- renewal of freight handling equipment, hoists, generators, and enabling technology.

While the Rail Plan is in draft, it provides a clear direction for the future of New Zealand's rail network and will allow rail investment to be aligned.

The Future of Rail is a cross-agency project led by the Ministry of Transport, working alongside KiwiRail, Waka Kotahi the NZ Transport Agency (Waka Kotahi), the Treasury, Auckland Transport, and Greater Wellington to define and develop the Future of Rail in New Zealand. The purpose of this work is to integrate rail into the transport system, so rail is planned, funded, and looked after alongside other transport modes. The Future of Rail review identified a suite of changes to provide a 10-year investment

[6] GPS 2018 , page 20.
[7] GPS 2018, page 38.

programme for rail to rehabilitate the rail network and ensure it is resourced to deliver the transport and wider outcomes the government is seeking.

Further ahead, other potential investments that will result in an increase in freight volumes moving across the network include: ·

- double tracking between Auckland and Hamilton
- re-opening the Stratford to Okahukura line
- increasing axel weights to 20 tonnes plus between Auckland and Tauranga and 18 tonnes plus elsewhere
- completion of rail upgrades in Northland
- increased regional services.

The GPS on Land Transport 2021/2022 (GPS 2021) (released September 2020) notes that "efficient, reliable, safe, mode-neutral and resilient freight transport – within cities, between regions and to ports – is vital for a thriving economy"[8]. It recognises the benefit of reliable and resilient freight routes where travel times are predictable.

The GPS 2021 (released September 2020) reinforces the importance of maintaining an ongoing focus on the work needed to accelerate the transition of moving more freight by rail and coastal shipping. It recognises this transition as helping to reduce greenhouse gas emissions from the transport sector, and that actions (including making more investments in freight hubs) will enable the freight and logistics industry to be as efficient, competitive and sustainable as possible.

2.4.3 Implications for the Freight Hub

These fundamental structural changes in relation to the funding and the reprioritising of rail are significant. They include bringing the movement of freight by rail into the National Land Transport Programme (NLTP), along with KiwiRail's three-year investment programme (the Rail Network Investment Programme (RNIP)) and the funding of rail activities within it.

The RNIP will also include an indication of significant rail network activities expected in the next RNIP and a 10-year forecast. The investment priorities in the Draft Rail Plan, and the funding signals in the GPS, will guide the development of the RNIP. Planning, operating, and maintaining the rail network and the associated freight, tourism and property services remain the core business and responsibility of KiwiRail.

Securing land for an intermodal Freight Hub in Palmerston North and developing plans for a high-tech, multi-modal Freight Hub which will help grow Palmerston North's role as a critical freight distribution centre for the lower North Island is identified as an investment priority in the Draft Rail Plan. The commitment to finance the network improvements and the support of rail through the integration of rail network investment into the NLTP are essential to support the funding of ongoing maintenance and renewal of the rail network that will in turn support the Freight Hub and mean that the local, regional and national benefits of the Freight Hub will be delivered.

2.5 Provincial Growth Fund

The Sixth Labour Government 2017 – 2020 allocated three billion dollars over a three-year term to invest in regional economic development through the Provincial Growth Fund (PGF). While the PGF is administered by the Provincial Development Unit, part of the Ministry of Business, Innovation, and Employment, decisions about $20 million or more were made by Cabinet.

KiwiRail obtained funding from the PGF in 2019 for eight projects as shown in Figure 2 2. One of these was for the selection of a site, master planning and concept design, designation, and land acquisition for a freight hub for the Central North Island, the Freight Hub. As set out in the PGF application, the objectives of the Freight Hub were to:

1. Increase economic benefits for Central New Zealand.
2. Improve national and regional freight efficiency.
3. Accommodate predicted freight growth.
4. Grow intermodal terminals and capability to further leverage freight distribution.
5. Facilitate an integrated region wide transport solution through key stakeholder collaboration.

[8] Page 15, paragraph 46

6. Support and enable Palmerston North's Strategic plans for the city.

The supporting documentation noted that the Freight Hub forms an integral part of a wider transportation package where several interrelated transport initiatives for the region have been designed collaboratively. It works in synergy with Palmerston North's 2018 City 10- year Development Strategy, the Manawatū Gorge Replacement Proposal.

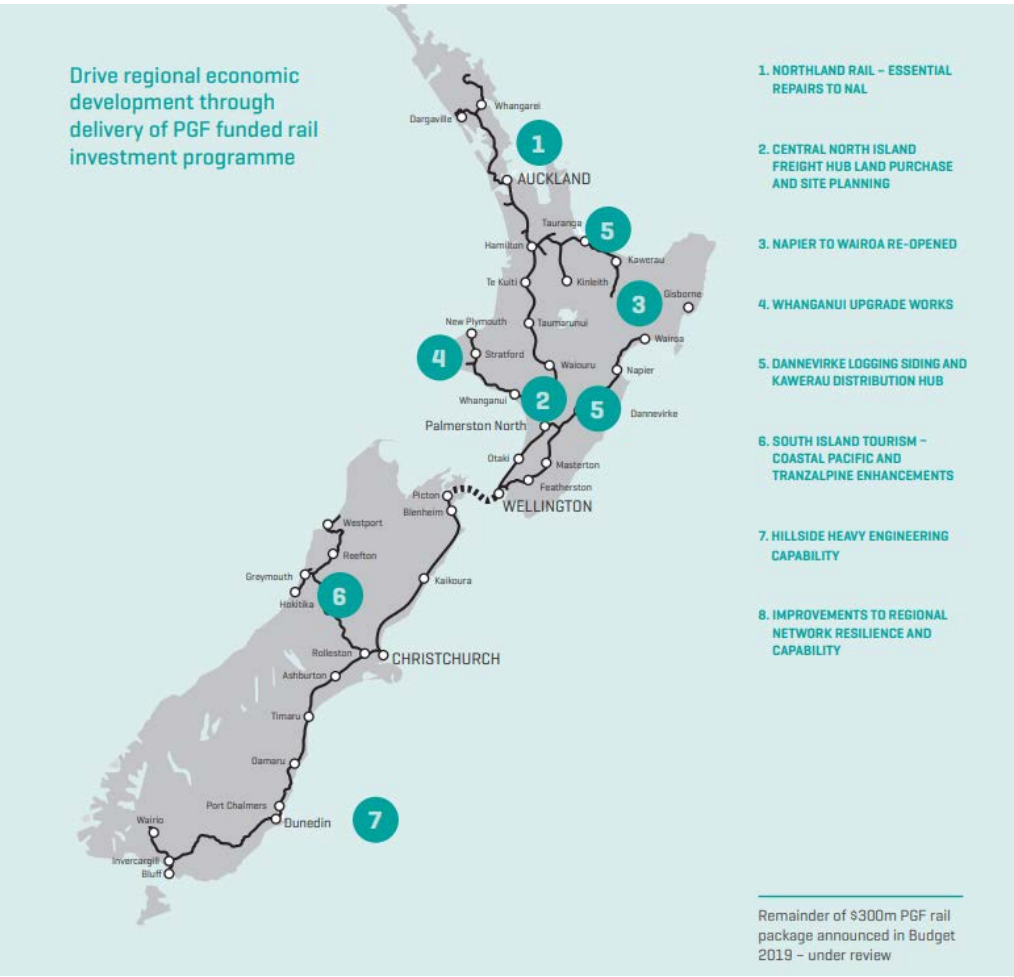


Figure 2-2: PGF Rail Projects 2019 (Source: Draft New Zealand Rail Plan, KiwiRail Ministry Of Transport, 2019)

The PGF application documentation that went to Cabinet noted that:

- The Ministry of Transport supports the proposal stating that 'the aspirations are considered to be consistent with the government's objectives for transport and freight, where the respective contributions of all modes are optimised as part of a mode neutral approach. The facility represents the optimal and most appropriate use of KiwiRail's land assets in Palmerston North'.
- Waka Kotahi has specifically identified the Manawatū-Whanganui region and Palmerston North as being a key enabler for economic growth and a regional surge location for freight distribution in New Zealand.

The PGF application documentation noted the link with fund and government outcomes and outline some of the benefits including:

- The development of the Freight Hub will generate future long-term employment opportunities in the logistics sector together with more temporary construction and land development opportunities relating to construction activity.
- Creating an integrated rail and logistics Freight Hub away from the city centre would spark alternative economic growth opportunities within Palmerston North and support both existing customers and potential new markets currently not connected to rail.

- Moving from the Existing Freight Yard supports various transport strategies seeking to move heavy load bearing vehicles away from urban roads; enabling PNCC's environmental, health and safety and the city's future strategic development plans to be realised.
- KiwiRail would be able to contribute to the future economic success of Māori in the region by way of enabling employment opportunities.
- Improved environmental sustainability outcomes associated with reduced carbon emissions from trains instead of vehicle movements.
- The region's economic success relies heavily on supply chain and logistics due to its significant agriculture and manufacturing industries.

The purchase of land is an enabler infrastructure project that will support predicted national and region-wide growing freight demands through developing modern, expanded, well connected, efficient facilities. This will generate future employment opportunities to the region.

The NoR forms part of the first phase of identifying the site, preparing the designation, and acquiring the land funded under the PGF.

3. Regional Context

3.1 Rail Network

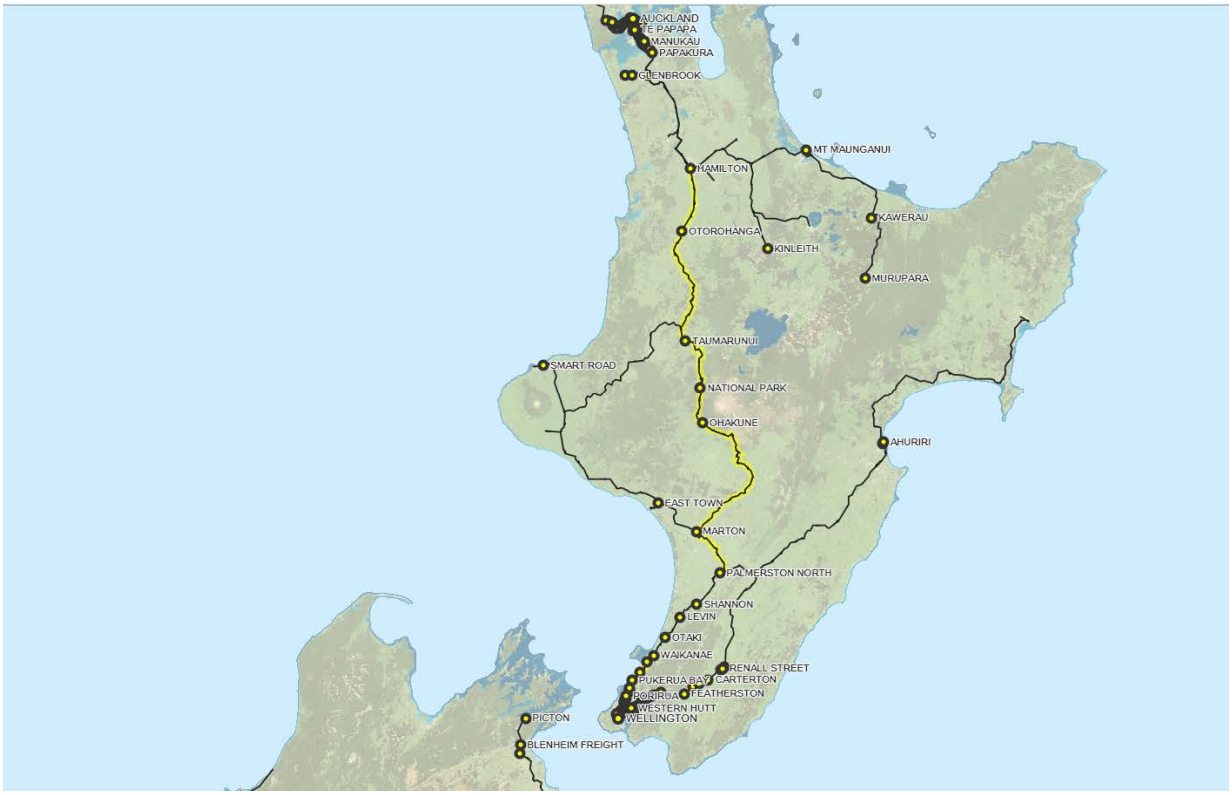


Figure 3-1: KiwiRail Network in the North Island

Figure 3-1shows the location of Palmerston North in relation to KiwiRail's rail network as well as the links to the key ports including, at Mt Maunganui (Tauranga) and Auckland. It shows the significance of Palmerston North as a key point on the rail network, located at the intersection point of the NIMT, the Palmerston North - Gisborne Line (PNGL) and the Marton – New Plymouth Line. Palmerston North is at the southern end of the electrified section of the NIMT that runs from Hamilton. This makes it a logical place to stop trains travelling south east and west to change locomotives.

3.2 Existing Palmerston North Yard

KiwiRail has an existing freight yard on the NIMT at Tremaine Avenue in Palmerston North (Existing Freight Yard). The Existing Freight Yard developed in the late 1960's (refer Figure 3-2) is located over two sites that are separated by Rangitikei Street (State Highway 3). At the time it was constructed it was on the outskirts of the city.

The western site includes the passenger terminal, the Network Services team and their associated administration and storage facilities. The eastern site has two main vehicle accesses off Tremaine Avenue. One that serves the Container Terminal and three commercial freight forwarder and a second that serves the Log Handling facility, the Marshalling Yard, Arrivals and Departures Yard, the Maintenance Facility and the administration and support facilities. The land occupied by the Existing Freight Yard is zoned industrial and designated by KiwiRail for railway purposes.

Figure 3-2: Existing Yard

The NIMT corridor is located immediately to the north of the Existing Freight Yard partly below the bulk of the yard. The yard is long and skinny as it is approximately 1,750 metres in length and 180 metres wide. The PNGL is located to the north east of the yard. Tremaine Avenue the key access to the yard is classified as an arterial, carrying over 12,500 vehicles per day with 10% of traffic consisting of heavy vehicles[9]. As can be seen in Figure 3-3 the land between the Existing Freight Yard and Tremaine Avenue is zoned industrial, except for Coronation Park which is zoned recreation, and land on the corner of Tremaine Avenue and Milson Line zoned residential. The land use on the industrial land is a mix of car sales, trade type retail, semi industrial and offices located in one and two storey buildings.

Figure 3-3: Extract from Planning Map showing Existing Freight Yard

To the north of the NIMT, there is both residential and industrial zoned land. Most of the residential land is occupied by single storey dwellings. There is an area of land to the north between the residential land and the industrial designated for stormwater purposes. The Existing Rail Yard and surrounding industrial land use is essentially confined between residential areas, potentially contributing to reduced amenity and severance effects for residents.

[9] Section 5.1 of Technical Report C Integrated Transport Assessment (ITA) prepared by Stantec

The proximity of the residential development to the Existing Freight Yard has proven problematic at times for the operation of the yard due to complaints from residents about noise at night. The need to meet seasonal peaks and maintain overall network service efficiencies means that KiwiRail needs to have the ability to operate 24/7. However, doing this, will result in a corresponding increase in effects (not all of which can be fully internalised) generated by the Existing Freight Yard's operation on the amenity of the surrounding urban area.

The size of the Existing Freight Yard is small. This means that opportunities to reconfigure the operation of the yard to meet future freight demands are limited. The layout of the yard is fragmented, and the existing buildings are nearing the end of their useful life. Significant investment would be required to improve their efficiency, to create modern fit for purpose facilities and to upgrade the overall environment to today's standards. In addition, as the city grows, and freight and traffic volumes increase. Further, PNCC, through zoning changes based on the city's Development Strategy, has encouraged industrial development to locate in areas around the airport in the north east, and near Longburn in the south west. Growth in these two areas has the potential to increase road traffic passing through the centre of the city, bound for the Existing Freight Yard. It is anticipated that road congestion along Tremaine Avenue and the other key arterial roads will increasingly impact on the efficiency of freight movements to and from the Existing Freight Yard and the efficiency and function of Tremaine Avenue.

3.3 The Importance of Palmerston North

There are a range of factors that have led to the need to locate the Freight Hub in or near Palmerston North including:

- Recognition (NLTP 2018-21) that the Manawatū/Whanganui region is a transport 'crossroads', a key freight and transport hub where critical road and rail corridors important for regional and national economic prosperity intersect. Palmerston North is unique in that it is the only rail freight terminal that has mainline freight services transit if from North – South and East – West directions. The presence of the main north/south and east/west rail lines and that State Highway 1 and State Highway 3 intersect in the region and the State Highway 3 project highway Te Ahu a Turanga: Manawatū Gorge to connect the Manawatū, Tararua District, Hawke's Bay and northern Wairarapa highlight the strategic value the Manawatū/ Whanganui region has for the whole of New Zealand.
- The NLTP 2018 identified in a Case Study[10] that along with addressing the need for resilience in key Manawatū/Whanganui road corridors, improving safety and increasing efficiency in the roading network could be achieved by further enabling the role of the region as a hub for freight distribution. The Case Study goes on to note that work on the Palmerston North Integrated Transport Improvements project was looking at the roading initiatives required to unlock the freight hub and distribution potential of the region. It also noted that Waka Kotahi was looking for further opportunities to move freight by rail and improving multi-modal freight connections[11]. In this regard the Economic Assessment in Technical Report K states that 2018 census data shows that the lower North Island served directly from Palmerston North (comprising Taranaki, Hawkes Bay, Manawatu – Wanganui and Wellington) accounts for almost 22% of New Zealand's population.
- 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. The Manawatū/Whanganui Economic Action Plan prepared by Accelerate 25 recognised that the region needed 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. It also noted that Palmerston North is a major intersection requiring more investment in streamlined transport movement as it is at the centre of the rail and road networks. This intersection of multi modal and large product and traffic volumes must be well designed and as efficient as possible.

[10] Page 79
[11] Page 78

- The Government made a decision in 2018 to overturn an earlier 2016 decision to replace the 15 electric locomotives with diesel locomotives and fund the refurbishment of 15 locomotives to enable electric haulage of freight trains on the 410 km NIMT between Palmerston North and Hamilton. That decision in tandem with locating the Freight Hub on the NIMT, north of Palmerston North is key to ensuring the reduction in greenhouse gas emissions and associated environmental benefits of moving more freight by rail powered by renewable energy.
- Work undertaken for KiwiRail in 2019 by Stantec[12] confirms that the primary function of the Existing Freight Yard is the marshalling of trains as part of distributing freight across the national rail network. This is due to Palmerston North's location on the NIMT with access north and south and east via the PNGL and west via the Marton – New Plymouth Line. The nature of the rail network means that goods moving by rail to and from the South Island travel through Palmerston North. Similarly, exports heading by rail to and from the Manawatu, Wanganui, Taranaki and Wairarapa travel to and from Auckland and Tauranga through Palmerston North.

KiwiRail has identified the need to locate the Freight Hub on the NIMT close to Palmerston North to deliver freight to (and through) the region, sustain its own capacity to meet increasing freight demands, and ensure that rail remains an integral part of central New Zealand freight flows.

[12] Appendix D Master Plan, page 7

4. Identifying the Requirements for the Freight Hub

4.1 Best Practice

Rail terminals and yards are important parts of the railway network because of their function to ensure the distribution and mobility of freight. Their main function is to uncouple wagons from trains that have arrived and include new freight from the local area and reassemble new trains according to their common destinations. The performance of a rail yard influences the quality of railway freight network operations.

KiwiRail is seeking to improve the quality, location and layout of its freight terminals and yards, creating a more efficient and dependable network for the future. Larger freight facilities at key locations on the network developed using efficient modern designs are required to achieve improved speed, connectivity, capacity, and efficiency.

Work was undertaken for KiwiRail in 2019/2020 by Stantec to determine the operational requirements for future intermodal freight hubs. A master planning process was used to define and quantify KiwiRail's requirements by identifying the key components of intermodal freight hubs, their size, and their layout requirements. From this, a preferred concept for an intermodal freight hub was developed in accordance with KiwiRail's requirements. At a high level the concept must:

- Achieve the best long-term economic results for well-connected freight flow.
- Form part of a multimodal transport strategy to support and drive economic growth.
- Create increased business opportunities.
- Accommodate current and future train service demand.
- Optimise KiwiRail's operations.

The concept needs to anticipate the full range of facilities that KiwiRail, and KiwiRail's freight partners, are typically expected to require at regional hubs, such as:

- Marshalling of inbound and outbound trains.
- Container terminal operation.
- Log loading transload operations.
- Liquid transloading operations.
- Servicing freight partners.
- Network Services.
- Rolling Stock Asset Services.
- Integrated freight yard operations.
- Existing and new technologies.

Railway yard operations must be focused on keeping things moving to be efficient. Idle assets take up more space, create the demand for more assets, increase costs, and cause delays. This requires operations to be consolidated at strategic nodes to reduce costs and optimise fleet management, using fewer locomotives to reduce space and maintenance, the use of longer trains and longer yard tracks, and running trains daily on a 7 day per week cycle (and operating 24 hours a day if needed) to keep assets moving and create consistent terminal workflow. The operations also need to ensure operators are in a safe and sustainable environment and where appropriate international best practices are incorporated.

A freight yard in or near Palmerston North due to its central location and the volume of freight moving through it, performs a critical function for the whole network and needs to assist in improving the efficiency of the rail network to help to make rail a more attractive mode for moving freight.

4.2 Master Plan

KiwiRail developed a master plan of a new intermodal freight hub based on future operational requirements using specialist rail input from Stantec's North American team. This work included reviewing the existing rail network and its current freight movements, considering the improvements required and scoping the high-level components of a regional freight hub.

The exercise undertaken utilised the Existing Freight Yard as the case example and involved a review of the operations at the yard; the wider network and KiwiRail's existing freight locomotives and wagons and planned changes.

The master plan was developed on the basis that it could be adapted to match regional freight variations across the country and tailored to meet the requirements of a project in a specified location. A copy of the Master Plan report is attached as Appendix F.

The key components of the master plan were sized to accommodate forecasted freight growth based on Palmerston North's role in the network. The key components are set out in Table 4-1 below:

Table 4-1: Key Components of the Master Plan

Key Physical Components	Area (m2)
Terminal Operations	204,000
Arrival and Departure Yard	83,100
Marshalling yard	106,500
Wagon Storage	14,400
Kiwi Rail Facilities	173,000
Equipment Maintenance	130,000
Network Services (roadway maintenance)	43,000
Container Terminal	176,000
Commercial Services	302,500
Freight Forwarding	215,000
Log Handling	87,500

4.3 Overview of Site Selection Process

Having confirmed what was needed to deliver a new intermodal Freight Hub through the Master Plan, KiwiRail undertook a process to select a location in or near Palmerston North for a new freight hub. The site selection process is set out in more detail in 10.2.1 of this report. In summary, it involved three stages:

- Stage 1: Site location selection based on a Multi Criteria Assessment (MCA) process. A more detailed summary of the MCA process, and the technical assessments relied on for the MCA are attached as Appendix F. As a result of this process, a preferred site from a technical perspective was identified between Bunnythorpe and Palmerston North Airport.
- Stage 2: consideration of the layout of the Freight Hub on the preferred site location selected through the MCA.
- Stage 3: consideration of the additional operational requirements for the site based on a high-level concept design.

Following completion of stages 1-3, KiwiRail developed its designation footprint for the Freight Hub.

5. Locality and Environmental Context

5.1 Locality

The Freight Hub is located (refer Figure 5-1) in the northern extent of Palmerston North City's jurisdictional area, between the Palmerston North Airport and the town of Bunnythorpe between the NIMT and the Mangaone Stream.

Figure 5-1: Location of the Freight Hub relative to Bunnythorpe and the Airport

5.1.1 Bunnythorpe

Bunnythorpe is located between Fielding and Palmerston North to the north of the Freight Hub and is bisected by the NIMT. Bunnythorpe became part of Palmerston North City in 2012 through a boundary change adjustment with Manawatū District Council (MDC). The predominant land use in Bunnythorpe is smaller residential zoned sites occupied with dwellings. The closest residential zoned sites to the Freight Hub are located on Maple Street, Railway Road, Kairanga - Bunnythorpe Road, Stoney Creek Road and on Nathan Place. Other sites in Bunnythorpe are zoned Industrial, Local Business, and Recreation.

Local facilities in Bunnythorpe include a tavern, dairy, rugby club, and school. The school (being a 2.4 ha designated site between Baring Road Dixons Line and Raymond Street) caters for years 0-8. The Bunnythorpe Cemetery (also a designated site) is located immediately to the north of the Freight Hub site as is the designated wastewater treatment pond (accessed from Te Ngaio Road).

Bunnythorpe has had a history of industrial activity as it was the birthplace of the Glaxo company. As noted in Section 5.2.7 the Glaxo's factory was located between Campbell Road, Dutton Street and Ashhurst Road was subsequently used as a manufacturing plant for its BMX bikes and is currently zoned Industrial. Transpower's main switching point for the lower-central North Island is located on the north eastern side of Bunnythorpe on a designated 16 ha block of land zoned rural.

The main and most direct access between Bunnythorpe and Palmerston North is via Railway Road.

5.1.2 Palmerston North Airport

The Palmerston North Airport, the second largest regional airport in New Zealand [13] is located to the south of the Freight Hub. Palmerston North Airport is identified as a significant regional resource and enabler of regional economic activity. The Airport is recognised as being a significant maintenance airport maintaining helicopters and heavy freight aircraft on a 24hr basis when required and there is also the potential for late night or early morning air services.

Given the presence of the Airport and the rules in the District Plan to ensure that any activity does not detrimentally impact on the safety of planes landing and taking off, the Freight Hub needed to be outside the Airport's Climb and Approach Surfaces at each end of the runway. The Airport Protection Surfaces overlay the Freight Hub as shown in Figure 5-2 below and as shown the Freight Hub is in the area subject to the Horizontal surface control.

[13] RLTP 2015-25, Section 2.6.

As explained in the District Plan, the Horizontal surface control is contained in a horizontal plane above the runway strip and has its outer limits at a locus of 4,000 metres measured from the periphery of the runway strip. The inner horizontal surface is at 90 metres above mean sea level. Even with the change in RL level across the Freight Hub to approx. 50m RL no structure will impinge into the transitional side surface.

Figure 5-2: Freight Hub location in relation to the Airports Height restrictions (Yellow shows the area subject to the Horizontal surface control in R13.4.7.1)

5.1.3 Transport Network

5.1.3.1 Road Network

Palmerston North and the Freight Hub as shown in Figure 5-3 and Figure 5-4 is well positioned in terms of connectivity to the state highway network and Palmerston North's existing main road network.

State Highway 1 crosses the region north to south and State Highway 3 connects to the west. Completion of the State Highway 3 project highway Te Ahu a Turanga: Manawatū Gorge project will better connect the region to State Highway 2 and the Manawatū, Tararua District, Hawke's Bay and northern Wairarapa.

When KiwiRail commenced work on the Freight Hub, Waka Kotahi was leading the Palmerston North Integrated Transport Improvements (PNITI) work to complete a detailed business case for further roading initiatives required to support the Freight Hub and distribution potential of the region. This project is sometimes referred to as the Regional Freight ring road project and is understood to involve the identification of freight routes and required roading improvements.

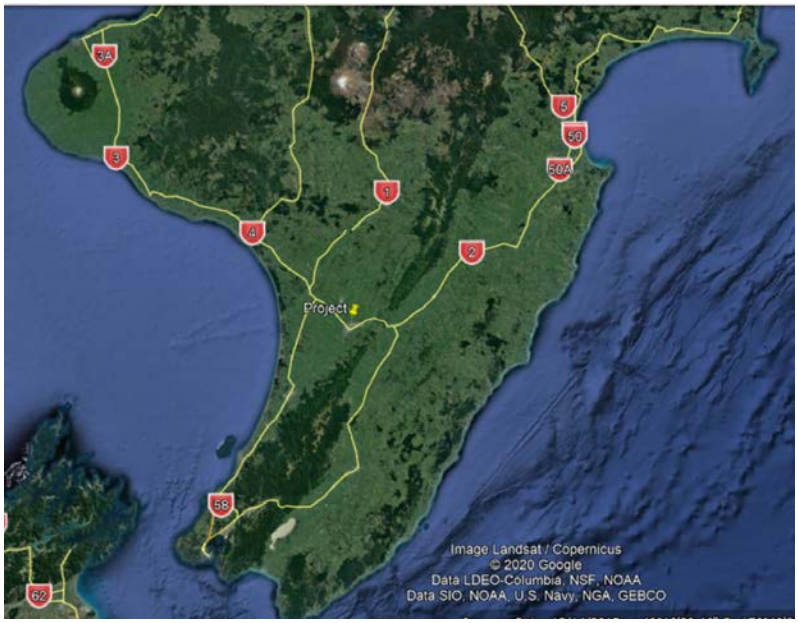


Figure 5-3: State Highway Network

Within the Freight Hub area, Railway Road is one of the main connections between Bunnythorpe (and Fielding) and Palmerston North City centre while Kairanga -Bunnythorpe Road to the north of the Freight Hub area also connects Bunnythorpe to SH 54 (Milsons Line) and from there to SH 3. Roberts Line located at the southern end of the Freight Hub runs from Kelvin Grove Road through Railway Road and across the NIMT to Kairanga -Bunnythorpe Road.

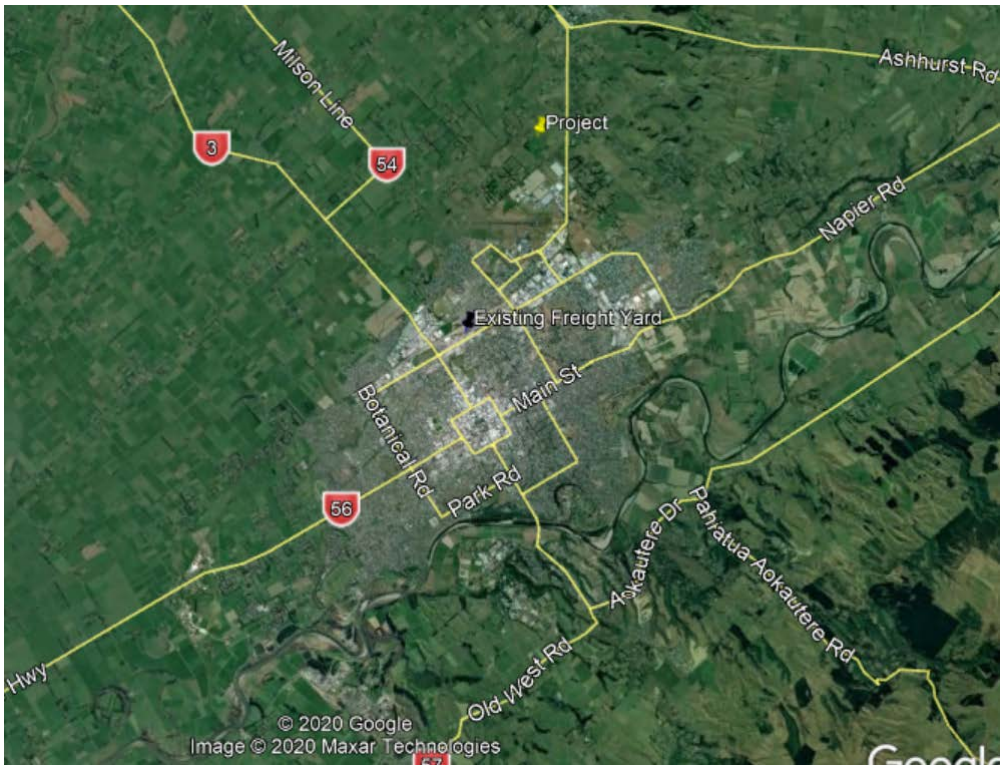


Figure 5-4: Palmerston North Main Road Network

There are unformed legal roads ('paper roads') in the wider area including a number between the Freight Hub and Bunnythorpe and some to the east of the Freight Hub. Some of these paper roads are farmed by

adjacent landowners. The unformed roads are laid out in a grid pattern and reflect the historic development plans for Bunnythorpe and the immediate area.

5.1.3.2 Cycle and Walking Network

Te Araroa Trail is the 3000km route stretching from Cape Reinga in the North of New Zealand to Bluff. The walk attracts hundreds of "through walkers" every year, and its publicity helps to attract thousands of walkers to complete different sections of the track throughout New Zealand. The route forms part of the potential Walking and Cycling Routes between Palmerton North and Fielding that have been evaluated by PNCC and MDC. Both PNCC and MDC are understood to be keen to promote this route, on the basis that if more walkers can be encouraged to complete the sections in the Manawatu region, there are likely to be regional economic benefits[14].

Sangsters Road is partly formed with a single lane in one section and is part of the route of the Te Araroa Trail.

5.2 Environmental Context

5.2.1 Landscape

The existing landscape is described in the Landscape and Visual Effects Assessment prepared by Isthmus and attached to this report as Technical Report E. The assessment describes the landscape of the area as being in three scales, the wider area of the Manawatu Plains, the Bunnythorpe – Palmerston North environs which immediately surround the site, and the site itself.

The Manawatu Plains is described as having a range of topography dominated by the river plains created by tributaries of the Manawatu River flowing through this area from the Ruahine Ranges near Pohangina to Awapuni. These river plains have influenced the present patterns of settlement, landuse and transport which have sought to avoid the low-lying floodplain areas and have created an important junction point for road and rail connections.

The Bunnythorpe – Palmerston North landscape lies within an area contained by Kairanga Bunnythorpe Road and the Mangaone Stream in the west, the Sangsters Road slopes to the east, industrial zoned land to the south (North East Industrial Zone – (NEIZ)) and the interface with the regional airport and the Bunnythorpe township to the north. In the west is recent subdivision of land to create rural-residential lifestyle blocks. In the east is a finer grain of established rural-residential properties and the Te Araroa Trail (described above). The NIMT also runs alongside the east of the site, though land of varying contour resulting in a 7.79m level change over a length of 2.7km. To the north is the township of Bunnythorpe and to the south is the industrial land zoning, which is largely undeveloped and remaining as rural-residential land.

As outlined in the Landscape and Visual Effects Assessment the landscape of the Freight Hub area is characterised by:

- Relatively open, rolling contour with rural and recent rural-residential landuse.
- Unmodified landforms of the Mangaone Stream catchment with contours varying across the site by approximately 5m.
- The tributaries of the Mangaone Stream as described above.
- Predominant pasture landcover with minor pattens of vegetation.
- The existing NIMT.
- The arterial routes connecting Palmerston North, Bunnythorpe, Fielding and the links to SH54 and SH3.
- The grid pattern of connecting streets and cadastral boundaries off Railway Road.

5.2.2 Zoning and Land Use

The land around the Freight Hub is subject to the Rural zone and the North East Industrial Zone (NEIZ).

The Rural zone is described in the Palmerston North District Plan (District Plan) to protect rural land from the adverse effects of unnecessary and unplanned urban expansion and to protect rural land that has been identified in Council strategies as potentially suitable for future urban growth. The zone seeks to encourage the maintenance of sustainable land-uses in the rural area and avoid, remedy, or mitigate the adverse effects of aircraft noise on noise

[14] Active Mode Connectivity Palmerston North to Feilding Single Stage Business Case Report, Prepared for Palmerston North City Council and Manawatu District Council Prepared by Beca Limited 15 August 2019.

sensitive activities in the vicinity of the Palmerston North Airport, while protecting the Palmerston North Airport from the potential adverse effects of noise sensitive activities on efficient airport operations. This is relevant as the Freight Hub is subject to the provisions of the Palmerston North Airport zone (Rule 13.4.7) as it is in the Airport Protection Surface as depicted in Figure 13.1 of Section 13. It is also noted that there are noise performance standards in the Rural Zone that require new habitable rooms (including any addition of a new habitable room to an existing building) for noise sensitive activities constructed within 100m of the nearest edge of a railway track to be designed, constructed and maintained to (Rule 9.11.3) to achieve compliance with an internal noise level of 40 dB Aeg(1hr) (except for bedrooms, where the design as proposed will achieve compliance with an internal noise level of 35 dB Aeg(1hr). This means that some of the dwellings close to the Freight Hub constructed since the standard was introduced should already have a level of noise protection.

The land subject to the Rural zone is a mix of both lifestyle sites with some accessory activities occurring on them such as firewood storage and pastoral activities with grazing such as for sheep and cattle.

The NEIZ is described in the District Plan as being designed to provide for large industrial sites (5ha and above) which can be accessed on a 24-hour basis. Its location and topography are well-suited to industrial development and due to the proximity to the Palmerston North Airport it is unsuitable for alternative urban uses such as residential. 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. Permitted activities in the zone include industrial activities, warehousing, storage, and depots.

A review undertaken of the history of the NEIZ as part of the MCA process identified that industrial growth and expansion in this north eastern area has been occurring since 2004. The history is set out in Table 5-1 below:

Table 5-1: History of Planned Expansion into the Rural Area

2004	94ha rural land zoned North East Industrial
2010	10ha zoned North East Industrial
2012	boundary change when part of MDC including Bunnythorpe was included in PNCC.
2016	126ha zoned North East Industrial

Because the zoning has been applied over a period of 16 years, the area subject to the NEIZ is in transition with many of the sites closer to the Airport already developed and those further away less developed. The nearest developed site to the Freight Hub is the site directly opposite the Freight Hub at the Railway Road/ Roberts Line intersection. This site is the Foodstuffs dry goods distribution centre that caters for the needs of the Lower North Island region. The site is a 35,000m², state-of-the-art facility with a fully automated storage and retrieval system for handling split case requirements. It holds the equivalent of 30,000 pallets, operates predominantly 24 hours per day, and distributes more than 600,000 pallets per annum[15].

1/3 or 50 ha of the Freight Hub extent is in the NEIZ and the remaining 126 ha is zoned Rural, noting that the zoning is also applied to the numerous sections of legal roads, some formed and some unformed that the Freight Hub overlays in accordance with Rule R24.3.1[16]. The roads that partially fall within the Freight Hub area and are therefore subject to the NoR include the following:

- Railway Road
- Roberts Line
- Te Ngaio Road
- Richardsons Line
- Clevely Line
- Sangsters Road (partially unformed)
- Unformed roads between Te Ngaio Road, Clevely Road, Railway Road and Maple Street

All the roads located within the Designation Extent whether formed or unformed are owned by PNCC. It is noted that the roads other than the intersection of Railway Road and Roberts Line are not lit.

Figure 5-5 below shows the zoning of the Freight Hub and surrounding area.

[15] https://www.foodstuffs.co.nz/about-foodstuffs/our-operations/

[16] All roads identified on the planning maps whether constructed or not, have an underlying zoning of the adjoining property. The centre line of the road is the zone boundary where two different zones adjoin each other.

Figure 5-5: Site Zoning (Source: Palmerston North City District Plan)

Within the Freight Hub area, only the NIMT is shown in the planning maps as being designated (designation 3 – Railway Purposes). However, Rule R24.3.1 states that roads constitute a designation for roading purposes.

The Freight Hub extent generally comprises land that has been classified using the New Zealand Land Resource Inventory Land Use Capability (LUC) Classification system, as versatile land being largely Class 2 land with some Class 3 land. Figure 5-6 shows that Class 3 land extends through the middle of the Freight Hub and across the northern end of the Freight Hub. There is a small area of Class 6 land at the very northern end. It is noted that Class 1 is treated as the most versatile soil with versatility decreasing down the sale to Class 8 land.

Versatile land is extremely important to New Zealand's economy, because, unlike urban development, certain rural land use activities, such as outdoor vegetable production, are limited to versatile land.

Figure 5-6: NZLRI Land Use Capability classes related to the Freight Hub (purple is Class 2, pink is Class 3 and brown Class 6)

Land use within the Freight Hub area consists of small to medium (less than 1ha to 60ha approximately) rural land and lifestyle holdings. Even where land is zoned NEIZ it remains largely undeveloped for this purpose although there are some existing dwellings located in the NEIZ area

5.2.3 Geology and Geomorphology

The soil types on the site are described in the Preliminary Geotechnical Assessment prepared by Stantec and attached as Technical Report B. Soil types consist of Q1a recent alluvium and Q3a alluvial terrace deposits. Q1a recent alluvium is geologically very recent and currently deposited alluvium in the base of gullies and on low lying ground west of the site likely to consist of sand silt and clay, possibly with peat. These ground conditions are soft/loose and prone to liquefaction and settlement. Q3a alluvial terrace deposits which cover most of the site consist of a mix of granular and cohesive soils including sand, silt and clay and forming terraces above the Q1a material. These soils have low liquefaction potential and moderate bearing capacity/strength.

There is also fill likely to be present on the site. Where fill is under the NIMT and Railway Road it is likely to have relatively good engineering properties and low settlement potential due to age and position. Rock is not likely to be encountered within 20m of the ground surface.

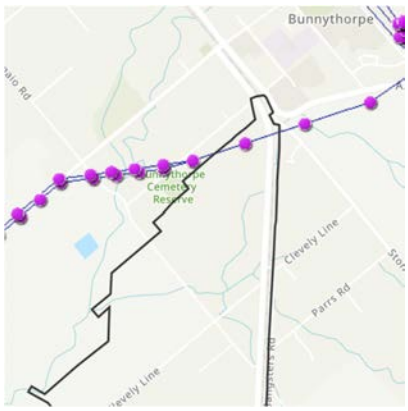
The Freight Hub is predominantly located on an alluvial terrace which is dissected by streams as described above. The larger watercourses in the northern part of the site are between RL42 and RL45 while the terraces rise to RL53. The base of the two largest watercourses are generally within broad, flat gullies between approximately 100m and 400m in width. South facing gully slopes are generally steeper than north facing slopes at up to approximately 15 degrees. The western boundary of the site opens out to the gully floodplain and the Mangaone Stream.

Further details on the Freight Hub Geology and Geomorphology can be found in the Preliminary Geotechnical Assessment attached as Technical Report B.

5.2.4 Network Utilities

There are assets of other network utilities present in or adjacent to the Freight Hub area. These are set out in Table 5-2 below.

Table 5-2 Network Utilities

Asset Type	Impact
Water supply bore 	One of PNCC's four water supply bore sites is located on the north western corner of Roberts Line and Railway Road. The site is not designated. The Designation Extent for the Freight Hub does not include the area where the existing infrastructure is located.
Wastewater sewer	The wastewater sewer from Bunnythorpe runs along Railway Road.
First Gas High Pressure Pipeline	The pipeline crosses the Freight Hub Designation Extent from Roberts Line in the vicinity of the Richardson Road alignment.
Transpower Transmission Line 	The Transmission Line is elevated as it runs across the northern end of the Freight Hub with a single pylon located inside the Designation Extent but outside the main operational area of the Freight Hub.

5.2.5 Hydrology

5.2.5.1 Catchment

The site for the Freight Hub is within the wider Mangaone Stream catchment. Catchments in the order of 1,200Ha in total drain through the Freight Hub site from east of Railway Road and the NIMT, to the Mangaone Stream to the west of the Freight Hub.

Stormwater from the upstream catchments (northern and central catchments) is conveyed through the Freight Hub site in two main unnamed watercourses and a smaller unnamed watercourse to the south (southern catchment). Figure 5-7 below shows the existing catchments and streams.

The northern catchment comprises around 623Ha (6.23km^2) and drains through the Freight Hub via a wide flat, generally poorly drained area and watercourse. The watercourse is part of a wide shallow floodplain on the Freight Hub site which occupies in the order of 23Ha of the site, based on the 200year flood maps available from the PNCC.

The central catchment comprises around 596Ha (5.96km2) and drains through the Freight Hub site predominantly via a single modified watercourse and culvert under the NIMT and Railway Road around 489 Railway Road. This watercourse is well defined through the Freight Hub and is also within a shallow floodplain. The area occupied by this floodplain within the Freight Hub site is in the order of 10ha, based on the 200year flood maps available from the Horizons Regional Council (HRC).

The southernmost catchment draining through the site is a small catchment of around 20Ha (0.2km2) which drains onto the Freight Hub site, just to the north of the Roberts Line / Railway Road intersection. It drains away from the Freight Hub site to the west, around the Roberts Line / Richardson Line intersection, to then turn to drain to the northwest and eventually to the Mangaone Stream below 815 Roberts Line.

The total catchment area of the Mangaone Stream to the downstream connection point from the Freight Hub site (via the central and southern watercourses) is around 15,000Ha. It is the existing receiving system for stormwater flows from, through and adjacent to the Freight Hub site.

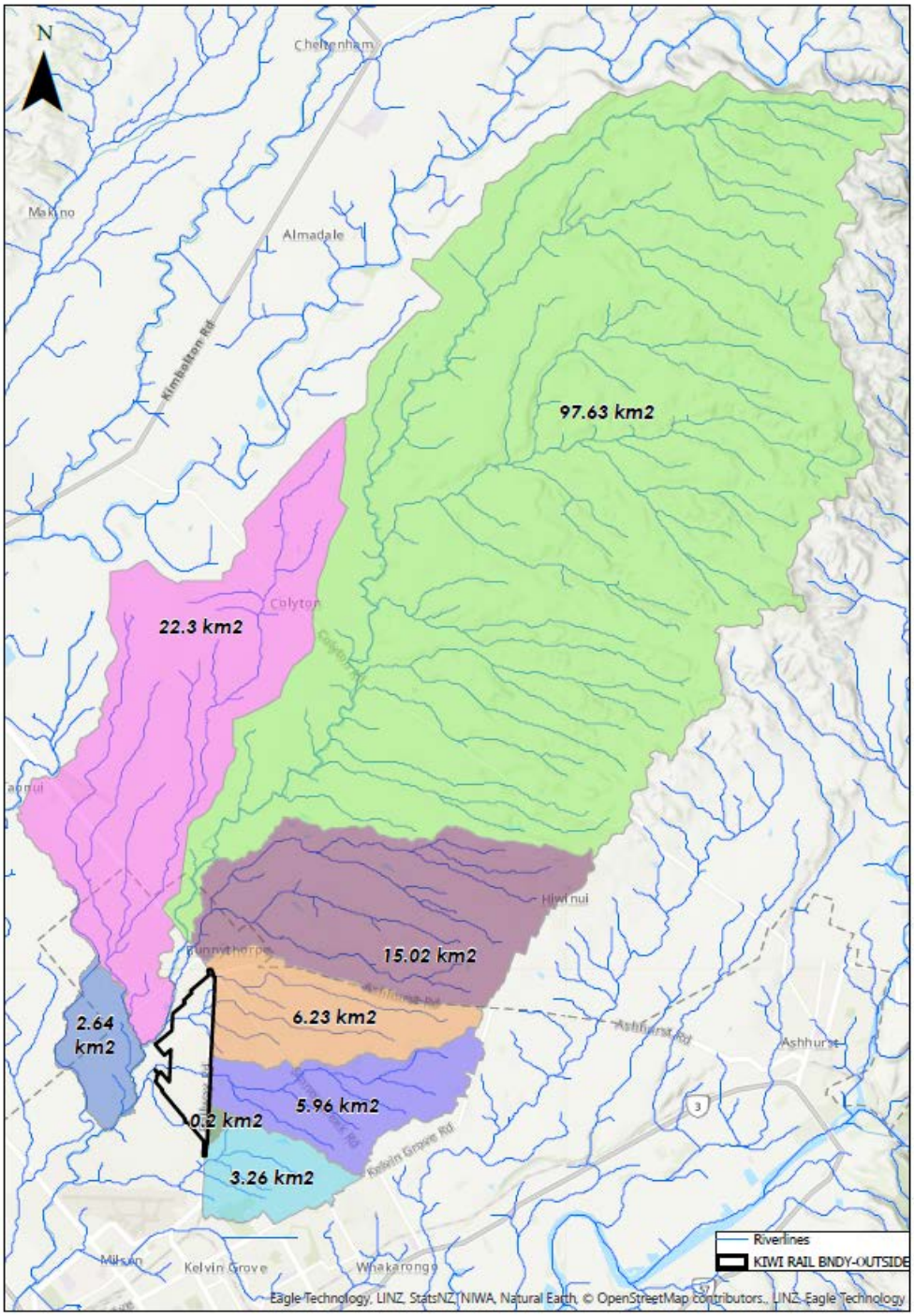


Figure 5-7: Mangaone Stream Catchment

Further catchment information is contained in the Stantec Stormwater and Flooding Assessment attached to this report as Technical Report G.

Flood prone areas as shown in the Freight Hub area in the District Plan are shown in Figure 5-7 below.

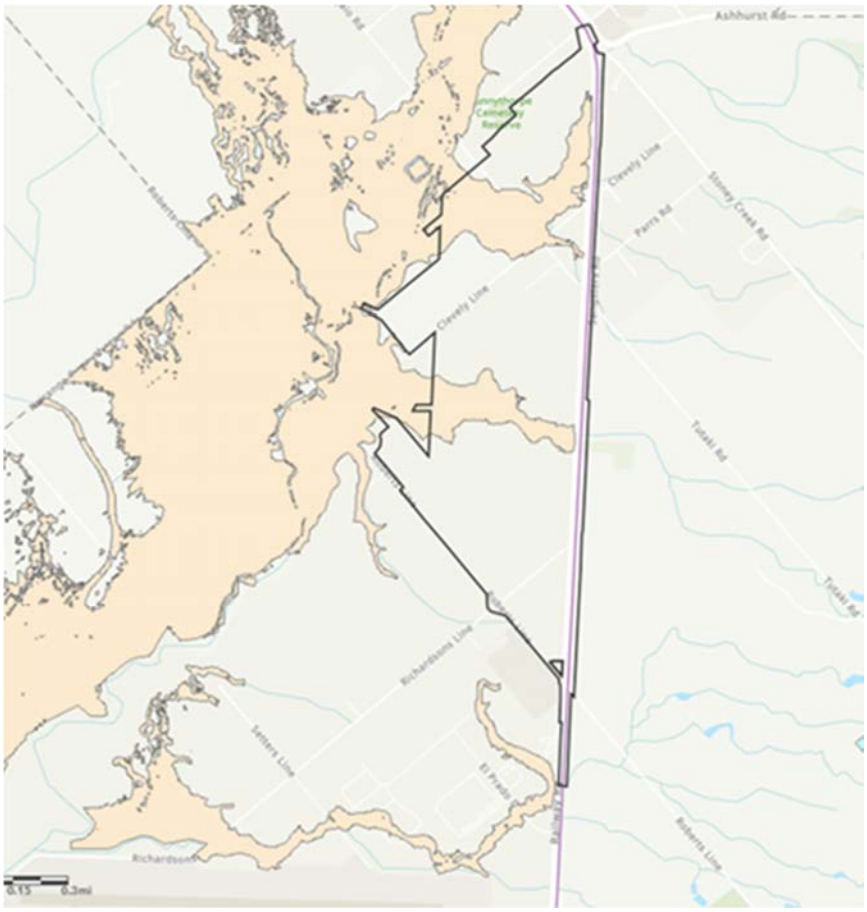


Figure 5-8: Flood Prone areas identified in District Plan in Freight Hub area

5.2.5.2 Watercourses

The Mangaone Stream is the only named stream close to the Freight Hub. The stream is a modified watercourse that originates north of Bunnythorpe and discharges into the Manawatu River main stem just south of Palmerston North.

There are two unnamed stream systems that flow through the proposed Freight Hub site as shown in Figure 5 5 below. These stream systems typically flow in an east-west direction before draining into the Mangaone Stream. Where the streams pass under the NIMT and Railway Road they are culverted.

Stream system 1 comprises ephemeral flow path branches which have no active beds or defined channels/banks and a central shallow modified channel. Terrestrial pasture grasses are common within the channel and there is evidence of historical stock access, although some sections have newly installed stock exclusion fences.

Stream system 2 comprises a single channel with a width of 0.5-1m. The stream is largely unfenced and unvegetated, with some small isolated patches of vegetation (mainly flax). This stream has a northern tributary upstream of the Freight Hub location which resembles an incised and straightened channel with some riparian vegetation consisting of planted pines groves and scattered juncus and sedge. The southern tributary of Stream 2, also upstream of the Freight Hub location is a shallow ephemeral flow path with pasture grasses throughout.

All streams have limited flows with long slow runs and contain fine sediments.

Further details of these watercourses are contained in the Boffa Miskell Assessment of Ecological Values and Effects attached to this report as Technical Report F.

5.2.5.3 Groundwater

Recorded groundwater levels within the area vary which is likely to reflect short-term conditions in the terrace deposits and seasonal variations. Pockets of high groundwater (2m below ground level) may

represent "perched" or elevated pockets of groundwater. The main groundwater table is expected to be below this depth.

It is noted that there are many ground water bores located in the Freight Hub area and around it as shown in Figure 5-9. A review of HRC's records indicate that only two of the bores have 'current' permits to take water and these are shown in the figure below.

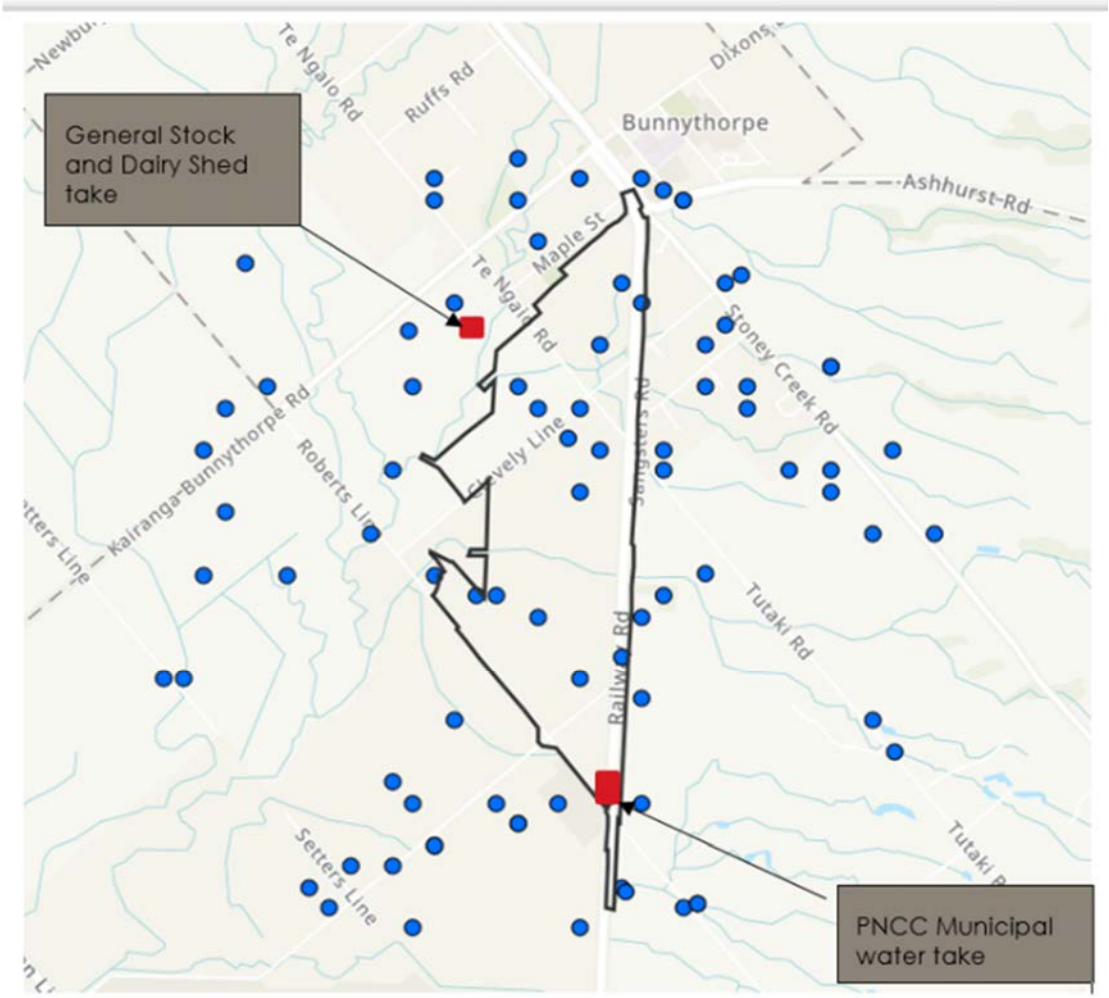


Figure 5-9: Location of Bore Wells from data sourced from the Horizons Regional Council (Blue Circles) July 2020 and location of consented water takes (Red Squares) sourced from the Horizons Regional Council August 2020.

5.2.6 Flora and Fauna

The site falls within the Manawatu Plains Ecological District which is highly modified and dominated by pasture and pockets of exotic vegetation. Given the lack of suitable habitat within the area, avifauna (bird species) are likely to be those common to highly modified agricultural landscapes (such as magpie, sparrow, blackbird) with native silver eye, pukeko and king fisher likely to be present.

The ephemeral nature and/or poor stream quality makes it unlikely that indigenous fish species are present in the streams within the Freight Hub site. However, there is the potential that eels may utilise Stream 1 during wet periods for foraging purposes, and eels and common bully may reside in the lower third of Stream 2. The upper two-thirds of Stream 2 is likely only used as a (poor quality) passageway for better habitat upstream. Upstream of the proposed Freight Hub site, Stream 2 does however provide fish habitat and stream cover with habitat suitable for eels, common bully, inanga and banded kokopu. Macroinvertebrates are limited to those tolerant of poor-fair water quality and pollution such as snails and worms.

Further details of the flora and fauna present is contained in the Boffa Miskell Assessment of Ecological Values and Effects attached to this report in Technical Report F.

5.2.7 Historic and Cultural Heritage

The following is a summary of the historic and cultural heritage of the area as outlined in the Archaeology Report prepared for the Freight Hub by inSite Archaeology Limited and attached to this report as Technical Report H.

5.2.7.1 Pre-1864 – The Māori Landscape

Radiocarbon (C14) determinations from coastal sites indicate that Māori have occupied the Manawatū region for more than 700 years. Prior to 1864 the patterns of Māori occupation within the area were synchronised with a natural environment characterised as predominantly a dense podocarp forest, with a small number of tributaries flowing into one or two low order streams and occasional wetlands. For centuries, this environment supported cycles of low intensity, seasonal occupation with a focus on freshwater fisheries, hunting, trapping and the collection of other forest resources. The major settlements and occupation sites of the various iwi were predominantly located along the coastal dune belt and within clearings adjacent to the Manawatū and Oroua rivers, streams, swamps, lagoons, and inland lakes.

Between 1820 and 1840 there was a renewed period of Māori migration into the area as iwi from the Waikato and northern Taranaki were forced south by the pressure of northern iwi who had obtained European firearms and were using these to expand their territory or settle old grievances.

5.2.7.2 1864-1900 - The Colonial Landscape

European settlement in the Manawatū experienced a gradual expansion during the middle decades of the nineteenth century. Vast tracts of land were made available for settlement following the Crown purchase of the Ahuaturanga (250,000 acres) and Rangitikei-Manawatū (241,000 acres) blocks during the 1860s.

1864 marks a turning point in the environmental, land tenure, and occupation history of the Freight Hub landscape. After the sale of the Ahuaturanga Block to the Crown in 1864, the physical character of the natural environment and the cultural patterns of occupation radically changed. Forests and wetlands were rapidly cleared and drained as the incoming settlers sought to meet contractual obligations to 'improve' the land before they could permanently acquire a title.

Bunnythorpe was envisaged as a large town at what was hoped to be the junction of the West and East Coast railways. However, township growth was slow due to land speculation resulting in absentee ownership which slowed civic development, while surrounding settlements grew. Eventually, in response to effective lobbying by a more populous voter base, the government agreed to shift the future railways junction to Palmerston North. It seems likely that had the shift not been made, Bunnythorpe would have grown to become the principal settlement of the district,

Bunnythorpe however continued to grow throughout the 1880s and into the 1890s due to the rich, fertile land and by 1899 the Palmerston electoral roll listed 270 eligible voters residing at Bunnythorpe. By the turn of the century, most of the once verdant forest had been cleared and farming was the main industry of the land that was serviced and supported by a small urban community.

It was with a product of the land that Bunnythorpe's most notable historic achievement was closely associated with the origins of the milk powder industry in New Zealand started by Joseph Nathan and Co. which became Glaxo Laboratories that continues into the present day as a part of the multi-national pharmaceutical giant, GlaxoSmithKline.

5.2.7.3 Archaeological and Historical Sites

At the present time there are no recorded or known archaeological sites located within the Designation Extent. The Freight Hub is entirely located within the historic town and suburban limits of Bunnythorpe, with 128 town sections and 26 suburban sections of historic Bunnythorpe within the proposed designation boundary. Of these sections, there are 61 named individual purchasers and 6 parcels with no named purchaser. Of the 61, 25 sections are known to have been occupied.

There are nine houses, houses sites and buildings of known or potential nineteenth century origin located within the proposed designation boundary which may have associated archaeological potential. Two of these sites have confirmed associations with the pioneer families of Bunnythorpe and two more are potentially associated with another early family. The former Glaxo Laboratories Factory, at 4 Campbell Road, Bunnythorpe, is located directly opposite the Freight Hub site and is listed in the PNDP as a category 2 scheduled building. The Glaxo building is a physical monument to an important story of technological and commercial development that transcends New Zealand's borders.

The NIMT is a living archaeological site in the sense that the track was first formed in the nineteenth century as an extension of the Wellington and Manawatu Railway, becoming the Wellington to New Plymouth Railway, but through use and maintenance little if anything is expected remain of the original track and structures. However, there is the potential for archaeological sites associated with railway construction to be encountered alongside the existing track.

Additional sites of historical interest within the Designation Extent are expected to be identified as further research into later landowners, local road board and county council records is undertaken when the Freight Hub proceeds to more detailed investigations.

Further details can be found within the Archaeology Report (attached as Technical Report H).

6. Proposed Designation

6.1 Purpose and Objectives

The purpose of the designation is:

- To develop, operate and maintain railways, railway lines, railway infrastructure, and railway premises as defined in the Railways Act 2005, and activities and infrastructure required to enable the transportation of goods by rail and road.

The designation will provide for the construction and operation of the Freight Hub on the NIMT, together with the supporting infrastructure which includes realignment of the NIMT and upgrades of the surrounding roads and intersections.

The objectives for the Freight Hub are derived from the aspirations and issues associated with the national and regional freight task that the Freight Hub is designed to address, and the broad locational and operational requirements.

KiwiRail's objectives in developing a Freight Hub in or near Palmerston North on the NIMT to:

- increase its operational capacity to efficiently accommodate projected regional and national freight growth and support wider regional development.
- enable rail to be integrated with, and connected to, other transport modes and networks; and
- improve the resilience of the regional and national freight transport system over time.

These objectives were used to inform the assessment of alternatives discussed in section 9, as well as to support the development of the Freight Hub's design and environmental mitigation/management measures.

6.2 Extent

The land subject to the NoR comprises approximately 177.7 ha and is located as shown in Figure 6-1 below.

The land subject to the NoR excluding the NIMT and sections of road owned by PNCC is held within 66 different titles and 41 different land ownerships with several landowners having more than one title affected.

Appendix 2 to the NOR contains the legal descriptions and property ownership details.

A copy of the land requirement plans displaying the extent of the land subject to the NoR is also provided in Appendix 2 to the NOR.

Figure 6-1: Designation Extent

6.3 Proposed Works

6.3.1 The Freight Hub

The main body of the Freight Hub needs to be immediately adjacent to the NIMT to enable ready access. The tracks in the Marshalling Yard and associated other rail facilities need to be laid out and spaced in the manner required by KiwiRail's operating standards.

The Freight Hub has been developed to a concept design stage. An indicative site layout for the Freight Hub is shown on the concept plan (Figure 6-2 below).

The design will be further developed. The Freight Hub has been designed to accommodate freight and future rail needs out to 2050 (and beyond). The level of development at, and timing for, each stage may change due to detailed design and various external factors.

The indicative information provided about the Freight Hub's site development outlines KiwiRail's anticipated operational requirements in terms of the location, length and area occupied by rail tracks, specific operational areas and buildings and associated accesses and parking. Based on these requirements an indicative layout has been developed to enable the likely location and extent of areas required for noise mitigation, roading and stormwater management and flood risk to be identified.

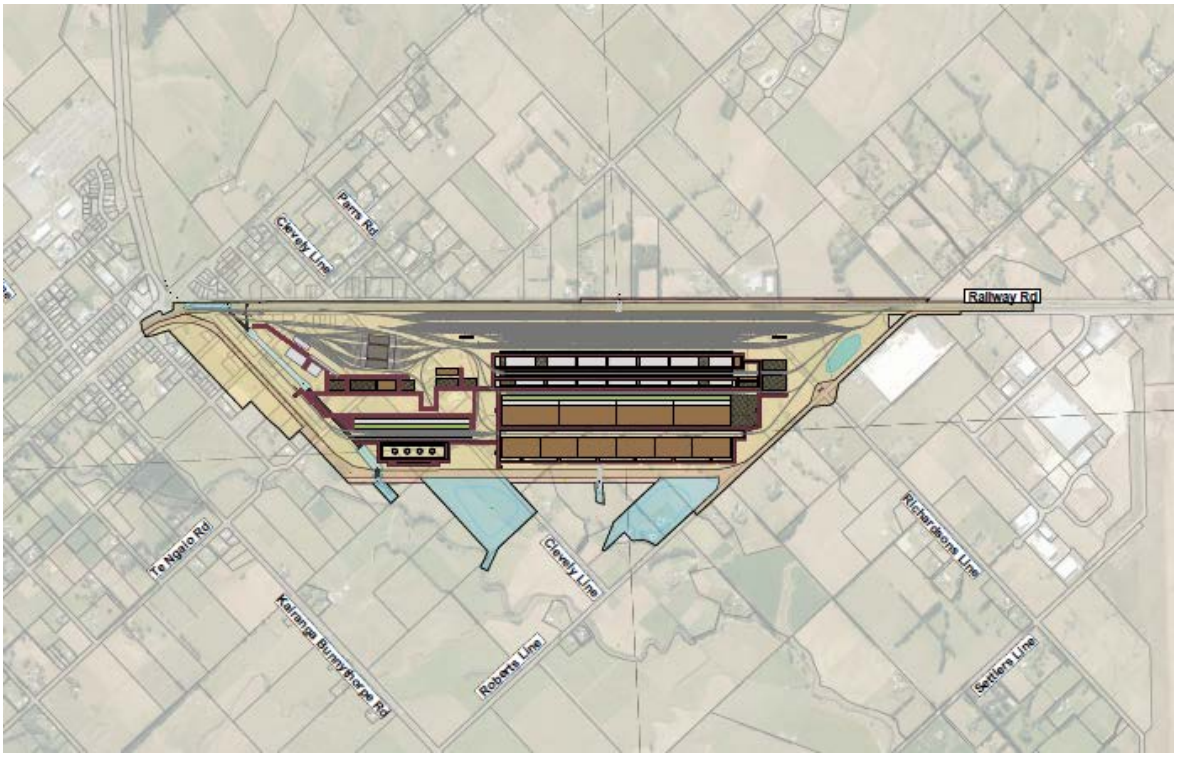


Figure 6-2: Concept Plan (refer Appendix B)

Once fully developed, the Freight Hub will include the following key elements:

- marshalling yards including arrivals and departure tracks to accommodate trains up to 1,500m in length, signals, overhead line equipment and other associated track assets including safety lighting (low level, street, and tower)
- container terminal
- wagon storage
- maintenance and network services facilities
- freight forwarding facilities
- log handling
- bulk liquid storage
- train control and rail operation centre and administrative office buildings and associated carparking
- staff facilities including car parking
- stormwater management areas with associated planting
- noise management areas with associated planting
- access roads
- buildings and other activities ancillary to the Freight Hub

The Freight Hub includes the land currently designated for the existing NIMT. The existing NIMT track adjacent to Railway Road is not evenly graded and contains rolling features (known as "the Bunnythorpe dips") with low points where the NIMT drops to cross two watercourses. The Freight Hub must sit immediately adjacent to the NIMT to allow track access to and from the yard for mainline trains, shunts, and other train movements. The Concept Plan provides for the NIMT to be relocated into the Hub's designation footprint. Realigning the NIMT will provide room for future double tracking of the NIMT and increasing the separation to adjoining properties as well as providing more space for noise mitigation and landscape planting.

The Freight Hub is expected to operate 24 hours a day and seven days a week. Lighting will be installed within the rail operational areas of the Freight Hub. The details of the lighting design are attached to the Design, Construction and Operation Report (Technical Report A).

6.3.2 Roading and Access

As part of the construction of the Freight Hub it will be necessary to construct a new perimeter road 4km long road around the western boundary of the Freight Hub. This new road is needed as it will provide access to the Freight Hub facilities on the western side such as the log loading facility and Network and Maintenance Services and mean that there are fewer vehicle movements within the Freight Hub where

there is the potential for conflict with rail services. In addition, the Freight Hub will result in the closing and stopping of existing Railway Road between Maple Street and Roberts Line. Once this is closed, the perimeter road will provide an alternative for the public to travelling along Roberts Line and Kairanga – Bunnythorpe Road.

The NoR was prepared during a period when there has been uncertainty about the future changes to the roading pattern in relation to the wider regional freight routes. KiwiRail will work with PNCC, HRC and Waka Kotahi the NZ Transport Agency once the future changes are confirmed to ensure that the transport effects of the Freight Hub are considered in light of these wider roading plans. KiwiRail must however in the interim make provision for the Freight Hub to access directly onto the roading network to allow the development to be progressed.

Included in the NoR are roading changes required to both enable freight vehicles to link directly to the to the existing road network. It is recognised that there are local roads included within the Freight Hub that are vested in and controlled by PNCC. The specific details related to these indicative road changes and the potential changes to network utility assets located in roads (such as the wastewater main in Railway Road) must be worked through in conjunction with the relevant parties prior to the Outline Plan of Works (OPW) stage.

The following physical changes to existing roads are anticipated:

- Change to the Railway Road/ Roberts Line intersection with removal of right turns into Roberts Line
- New T-Intersection of Roberts Line with the perimeter road
- Richardsons Line north-east of the Roberts Line/Richardsons Line intersection converted to a Freight Hub access, with two additional Freight Hub accesses via the perimeter road on the northern and western boundaries

In addition, the following road closures are anticipated:

- Closure of Richardsons Line north-east of the Roberts Line
- Closure of Roberts Line east of current Railway Road
- Closure of Clevely Line approximately 450m from the Roberts Line/Clevely Line intersection
- Closure of Te Ngaio Road approximately 250m from the Clevely Line/ Te Ngaio Road intersection

It is noted that any permanent road closure will need to be subject to separate road -stopping procedures. KiwiRail will work with PNCC to determine the most appropriate process to follow in relation to the closure and/or stopping of any road.

The following level crossings will also be removed because of the Freight Hub on the eastern side of Railway Road:

- Clevely Line
- Roberts Line
- the unformed section of Richardson Road
- Railway Road.

The crossing to the unformed section of Richardson Road is the only formed access to the road network for two properties on the unformed section of Sangsters Road. KiwiRail will work with these landowners to provide an alternative access, expected to be to Roberts Line.

Te Araroa Trail follows Sangsters Road. The culvert being installed in the middle of the site is currently a grassed area and those following the Te Araroa Trail will be able to travel over the formation area. In the section where the access for the properties on Sangsters Road is provided, the Trail follows the same alignment currently and the intention is that the formed driveway access provided for those properties would be used by those using the Te Araroa Trail. Moving south from Roberts Line, a noise wall will affect the ability for the Trail users to cross Railway Road to the path on the western side of Railway Road and KiwiRail will work with PNCC to investigate the 'opportunity for the Trail to continue along the eastern side of Railway Road towards the city centre. The works are expected to improve the Te Araroa route for users.

6.3.3 Stormwater Infrastructure

The Freight Hub includes land for the construction of attenuation and detention wetland ponds. The principle purpose of the ponds is to allow for the reduction of peak flows from the developed site, to avoid increased flood levels downstream. The ponds will also work to treat the stormwater collected prior to it being discharged.

The existing watercourses running under the NIMT, Railway Road or through the Site will be either piped or, in the case of the watercourses at the northern end of the Site, diverted to a new watercourse in the Freight Hub. It is intended that this watercourse will be largely open to daylight as per the recommendation of the Stormwater and Flooding Assessment (Technical Report G).

A large culvert will be installed within the centre of the Freight Hub running from Sangsters Road to discharge to a stream on the eastern side of Clevely Line. The installation of this culvert will require earthworks in the unformed section of Sangsters Road which will raise the level of the land in that location.

6.3.4 Noise Barriers and Landscaping

A mix of noise barriers in the form of earth bunds (such as between Maple Street and the perimeter road and Freight Hub) and 3-5m high walls will be installed around the Freight Hub's boundaries.

Planting with a mix of shrubs and trees will be used in association with the noise barriers and further landscaping and planting will be installed outside key working areas to assist with stormwater management.

Due to the difference in contour and the presence of the Perimeter Road, an earth bund will be formed at the rear of properties on Maple Street. Between the bund and the perimeter road the area is proposed to be landscaped.

Provision is made for the relocation of the NIMT westwards at its current alignment. Among other things, this allows for a noise wall to be constructed on the eastern side of the Freight Hub in an area currently occupied by the NIMT. The noise wall will be accompanied by extensive landscaping. At the southern end of the Freight Hub, this noise wall extends over the closed eastern end of Roberts Line and along the eastern boundary of the NIMT.

Appendix C to the AEE contains an indicative landscape plan and sections showing the potential location of the noise walls and the associated planting.

6.3.5 Construction

The Design, Construction and Operation report (Technical Report A) sets out the possible development sequence and timing for construction of the Freight Hub and related Freight Hub works. The report indicates the long lead in time of 3 and a half years is expected to be required to undertake the required site investigations to inform the detailed design and prepare and lodge the regional consent applications and the detail required for the establishment OPW to initially open the Freight Hub for operation. The Design, Construction and Operation Report also indicates that that the bulk earthworks required to get the Freight Hub site to subgrade level are likely to take another three years and that construction of the key elements required so that the Existing Freight Yard could be demobilized could take a further three years.

The Design, Construction and Operation report outlines the reasons for this programme which include the need to achieve a level that ensures that the grade for the Mainline to Arrival/Departure Yard is no more than 1:200 (0.5%). This means that the vertical elevation of the Freight Hub site is constrained by the current level of the NIMT and the need to achieve sufficient height to pass overland flows through the site either by piping or constructed open channels and achieve a grade that will work with the NIMT bridge to the north of Bunnythorpe.

The current NIMT alignment at the southern end is at 51.5RL and at the northern tie in is at 50 RL with other points along the NIMT ranging from 45.6 – 53.5. Across the site the contours vary with high ground located between water courses and flood plans. Generally, landforms fall away from the NIMT in a south westerly direction.

RL 50m has been selected for the floor level of the main operational area (130 Ha) of the Freight Hub for the purpose of developing an indicative layout and finished ground level and this is set based on the Lidar data initially available from PNCC.

The final level for the Freight Hub site will be achieved by cutting the high points and filling the low points across the site, with up to 5-6m of fill expected in some locations. Total fill required for the Freight Hub is in the order of 2,340,000 m3. Subject to the results of the site's geotechnical investigations it is assumed that a significant portion of the cut material from the high points is suitable for reuse in the low points. However, site earthworks are not expected to be balanced, and approximately 1,500,000m^3 of imported fill will potentially be required to build up to the sub grade level at around RL 49.3m. The final 700mm will be made up of various foundation elements which will need to be imported from sources that are still to be confirmed either around the region or further afield. Other materials- such as ballast, rails and box culvert units will also need to be brought to site as part of the Freight Hub floor formation.

The construction periods indicated above will depend on finding sources for the materials and the size of the workforce working at any one time. The programme has assumed that there will be periods each year when bulk earthworks are not able to occur. This needs to be investigated further with HRC as part of the regional consenting process, as it may be possible to undertake works on parts of the site. The Design, Construction and Operation report notes that bulk earthworks are likely to be staged west to east from the

perimeter road towards Railway Road, but earthworks may occur around the site in different sequences subject to contractors work planning and overall programme.

Some works such as constructing the detention ponds will need to occur early as they are expected to form part of the erosion and sediment control measures that will need to be in place first. The area around the ponds is likely to be planted to stabilise the worked areas. In addition, the northern noise mitigation bund is expected to be constructed early and this will also be planted. The perimeter road formation and perimeter of Freight Hub site will also need to be constructed along with the installation of fencing and planting around the western and southern perimeter as the road needs to be open before Railway Road is closed and works can commence to relocate the NIMT.

6.4 Lapse Period

Section 184 of the RMA provides that a designation lapses, unless given effect to, on the expiry of 5 years after the date on which it is included in the district plan unless the designation specifies a different period when it is incorporated into the district plan.

KiwiRail seeks a lapse period of 15 years for the designation. This lapse period is sought due to the scale and complexity of the works required to enable the construction and operation of the Freight Hub. With development required across approximately 177.7 ha of land, this is a Freight Hub of regional significance.

Adequate time is required to enable the acquisition of land. The Freight Hub Project requires the acquisition of land from approximately 42 different landowners (41 private landowners and PNCC). As explained in the Design, Construction and Operation Report, reasonably long lead times are also expected to be required in order to undertake the required site investigations to inform the detailed design and prepare applications for, and obtain, the relevant regional consents. In addition, in order for the Freight Hub to operate, access roads need to be constructed and upgrades to existing local roads are required in addition to the closure and stopping of various formed and unformed roads. Adequate time is needed to undertake these works and processes. A longer lapse period will also enable adequate time for engagement with other road controlling authorities in relation to alignment and integration with upgrades to the wider regional transport network.

6.5 Outline Plan of Works

The NoR is based on a concept design that includes details about how the Freight Hub will be developed, along with indicative locations of Freight Hub access roads, noise mitigation structures, stormwater ponds and landscaping. This information and a reasonably likely construction methodology have enabled an "envelope" of actual and potential effects of the Freight Hub to be identified.

Before construction commences, KiwiRail will undertake site investigations and prepare details to submit as an OPW to PNCC to reflect the physical works required for the Freight Hub. The OPW will contain the information required by section 176A of the RMA and any other information required by the conditions of the designation associated with the construction of the Freight Hub.

The OPW is expected to be accompanied by a series of management plans that outline details related to construction and the management of construction related effects. These plans are to ensure that KiwiRail appropriately manages the effects of the Freight Hub and to keep the community and the Council informed as the detailed design progresses. Proposed conditions for the designation require that an OPW is to include the relevant management plan for the particular design or construction matters being addressed in that OPW.

6.6 Resource Consents

6.6.1 National Environmental Standards

The change in land use and the scale of land disturbance is such that resource consent under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) is expected to be required. The resource consent will be sought in the future as detailed design progresses.

It is expected that resource consent will be required under the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 for works in streams.

6.7 Regional Plan Rules

At this stage, and prior to detailed design work, the following regional resource consents are expected to be required for the Freight Hub:

- The bulk earthworks associated with the movement of over 2 million cubic metres of earth across the 177.7ha site.
- Discharges from the disturbance of contaminated soil.
- Stormwater discharged to existing streams from the ponds.
- Stream works including the diversion of existing watercourses and installation of culverts as existing watercourses will need to be piped.

The regional resource consents will be sought in the future as detailed design progresses.

7. Consultation and Engagement

7.1 Process

The Engagement Report in Appendix E outlines the external process followed between 2019 and lodgement of the NoR and the tools used.

7.2 Community

Details of the sessions undertaken in 2020 in the community are set out in the Engagement Report. The initial round of engagement was undertaken in February 2020 (after the Minister's announcement of the Freight Hub) when community meetings were held in Bunnythorpe to explain the project and the process in terms of site selection and the notice of requirement.

The Covid- 19 constraints-imposed delays in responding to the community after the initial sessions in February. The project team worked creatively within the Covid -19 constraints to develop a range of virtual tools to engage with the Community. These included:

- Social Pinpoint an interactive tool that used an interactive map for online consultation so that the community could provide comments.
- Freight Hub Zoom presentations
- Story Map which was used at the end of the engagement period to provide information about the Freight Hub to date, including the refined Designation Extent and recorded interviews with experts.

As well as these measures, KiwiRail maintained an email address where people could provide feedback and ask questions. KiwiRail went back out to the community after the Minister's Announcement of the preferred site in early July, with two Community Events at Bunnythorpe, displays at the Plaza in Palmerston North and at a regular community market in Palmerston North one weekend and a Zoom meeting.

A further round of engagement with the community occurred in September 2020 when the refined Designation Extent was shared with them in a mix of two Zoom meetings and a five-hour long community event at Bunnythorpe. As part of this round of consultation indicative images showing the landscape and layout of the Freight Hub along with nine cross sections to indicate potential development were provided.

7.3 Landowners and Occupiers

Potentially directly affected landowners (those identified as being within or immediately adjacent to the Designation Extent) were written to at the time of the Minister's Announcement and KiwiRail offered to meet with them to explain the project. Almost all the landowners agreed to meet with a KiwiRail team member and a property specialist in the week after the announcement.

Once the refined Designation Extent was developed the directly affected landowners were again written to in September with another opportunity to meet with KiwiRail.

7.4 Key Stakeholders

7.4.1 Mana Whenua

KiwiRail engaged with iwi early in the project and reached out to a wide range of iwi groups who might have an interest in wider the Palmerston North area.

While iwi groups were kept up to date with site selection progress, more detailed site assessments were initiated with:

- Ngāti Kauwhata
- Rangitāne ki Manawatu
- Ngāti Raukawa ki te tonga

KiwiRail continued meeting with iwi contacts and keeping them up to date about the project including meeting with Rangitane and Ngati Kauwhata and via Zoom to address the Covid- 19 restrictions relating to meetings and travel.

Ngāti Raukawa ki te tonga have been commissioned to prepare a cultural values assessment of the site.

Iwi engagement will continue throughout the development of the Freight Hub project.

7.4.2 Palmerston North City Council

In addition to being invited to participate in the MCA process in 2019 KiwiRail has met with representatives of PNCC Regulatory Services team and Council asset team members to advise them about the Freight Hub, to discuss the stormwater and flooding matters, and transport aspects of the Freight Hub.

These meetings have been held in person prior to Covid-19 restrictions and since the imposition of restrictions, via Teams and Zoom. KiwiRail representatives have also met with the Mayor and ensured that he was informed about the project.

PNCC staff were invited to all the public consultation events.

KiwiRail will continue to meet with PNCC staff to discuss the implications of the Freight Hub both in terms of the processes related to the Notice of Requirement but also in relation to the processes associated with the specific assets affected by the Freight Hub.

7.4.3 Horizons Regional Council

HRC staff were also invited to participate in the MCA process and then informed about the Freight Hub in relation to stormwater and flooding matters and transport implications. KiwiRail's approach of seeking the designation in advance of lodging the required regional consents was also explained to HRC consents staff.

7.4.4 Waka Kotahi NZ Transport Agency

KiwiRail provided regular updates of the NoR work and sought input from Waka Kotahi on the work underway in relation to PNITI and the Manawatū Gorge replacement route to ensure project alignment and to ensure alignment with Government's broader transport objectives.

Representatives from Waka Kotahi attended all the MCA workshops and were invited to all the public consultation events. KiwiRail has also met with Waka Kotahi along with HRC and PNCC representatives to discuss progressing the integrated transport assessment in the absence of firm future roading plans for the ring route.

7.4.5 Others

KiwiRail has also contacted First Gas and Foodstuffs at various times about the implications of the Freight Hub on their assets and activities. KiwiRail provided an overview of the project. Foodstuff's (who has a distribution centre in the NEIZ) was also engaged with given the changes to the Roberts Line/ Railway Road intersection while supportive were focused on traffic implications.

First Gas have advised that realignment of the Gas Pipeline currently running through the area to be designated around the Freight Hub was feasible, KiwiRail will work with First Gas to identify future gas pipeline alignments and potential connection points.

Transpower's asset in the northern area of the Freight Hub is unlikely to be directly affected but Transpower will be kept informed about the Freight Hub.

KiwiRail has also been working with PNCC, CEDA and local landowners to look at the integration of the Freight Hub with the surrounding land uses and transport links (including how freight from the NEIZ zone/Airport could access the Freight Hub). This work is currently being led by CEDA and KiwiRail has indicated it will continue to be involved as part of the wider group to develop solutions which enable the transfer of local freight to the Freight Hub site.

7.5 Responses to Feedback

As summarised in the Engagement Report, KiwiRail received a wide range of feedback. As well as technical specialist input, the feedback received has been considered in the development of the designation and the elements proposed within it, including:

- Roading connections - The initial engagement in February featured an indicative non-specific connection from the north western corner of the Freight Hub site out to Kairanga – Bunnythorpe Road

which could tie into a future Western by-pass of Bunnythorpe. There was feedback from the community around the details on this future route and its connection to the future route for the Ring Road. Given the uncertainty around the timing for the delivery of wider roading upgrades, KiwiRail included the perimeter road option as a means of providing access to the Freight Hub without precluding future integration with wider roading upgrades.

- Noise from the NIMT – Feedback was received on the noise and vibration impacts of the trains already operating on the NIMT. KiwiRail investigated the option of moving the NIMT into the Freight Hub as this would move the NIMT impact further away from the existing residents. As a result of applying the consistent grade across the section of the NIMT, this would also remove the impact of the variations in level along this section of the track. It also allows for the land currently occupied by the NIMT to be used for the noise and landscape mitigation and provided for the ongoing function of Sangsters Road.
- Sangsters Road traffic - Feedback was received about the potential for vehicle traffic using Sangsters Road if the unformed section was formed to address the removal of level crossings that currently give access to Railway Road. KiwiRail discussed this with PNCC and recognised that forming and using Sangsters Road for all traffic was potentially problematic in terms of impacting on the Te Araroa Trail as well. Relocating the NIMT provided a solution in terms of reducing impacts on the properties east of Sangsters Road but also allowed as noted above the formation of a driveway from Roberts Line for two properties along Sangsters Road that currently rely on a private crossing to Railway Road. While the ability to cross Railway Road and the NIMT at Roberts Line is removed the impact of the changes is to make the vehicle link available only for the existing two properties and for this 'driveway' to also be used for the Te Araroa Trail.
- Railway Road/Roberts Line Intersection - Safety concerns were raised about the Railway Road/ Roberts Line intersection. These concerns were reinforced by a crash in April 2019 at the intersection which resulted in fatalities. The change to the intersection resulting from moving the NIMT and providing a noise wall along the length of the NIMT, south beyond the intersection will remove this intersection.
- Pedestrian access – Questions were raised as to whether KiwiRail would extend the footpath through to Bunnythorpe. The perimeter road will provide a footpath and as shown in the indicative landscape plan. There is also the opportunity to add new walking and cycling connections between Bunnythorpe and Roberts Line as well as better enable use of the Te Araroa Trail.
- Water detention - Feedback was received around measures to manage stormwater and flooding risk. The area of land included in the designation provides for the detention of stormwater generated by the Freight Hub, its treatment and at an appropriate time its release. The designation provides for water to continue to flow under the Freight Hub and through it.
- Planting – Feedback was received around the timing for planting. Where possible planting will occur as soon as possible where it will not be disturbed by works.

8. Statutory Context

8.1 Resource Management Act 1991 Requirements

8.1.1 Section 168

A designation is a provision in a district plan that enables a requiring authority to carry out an activity or activities that are in accordance with the purpose of the designation and subject to conditions.

Section 168 enables a requiring authority to give notice to a territorial authority of its requirement for a designation –

(a) for a project or work; or

(b) in respect of any land, water, subsoil, or airspace where a restriction is reasonably necessary for the safe or efficient functioning or operation of such a project or work.

As noted above, KiwiRail is a requiring authority and has decided to give notice to PNCC of its requirement to designate land for the purpose outlined in Section 6.1 above. KiwiRail seeks that the application be publicly notified

8.1.2 Section 171

Pursuant to section 171(1) of the RMA, when considering a requirement made, a territorial authority must, subject to Part 2 of the RMA, consider the effects on the environment of allowing the requirement, having particular regard to:

(a) *any relevant provisions of:*

(i) a national policy statement:

(ii) a New Zealand coastal policy statement:

(iii) a regional policy statement or proposed regional policy statement:

(iv) a plan or proposed plan; and

(b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work; if-

(i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or

(ii) it is likely that the work will have a significant adverse effect on the environment; and

(c) whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and

(d) any other matter the territorial authority considers reasonably necessary in order to make a decision on the requirement.

These matters are discussed below.

9. Assessment of Environmental Effects

9.1 Positive Effects

9.1.1 Safety Benefits

The use of rail for freight services delivers safety benefits particularly in relation to the reduction in the national road toll. In addition, the removal of three level crossings on Railway Road is identified in the Integrated Transport Assessment (Technical Report C) as being a safety improvement. The change to the Railway Road and Roberts Line intersection is likely to provide further safety benefits given the recent fatal accident that occurred there as noted in the Integrated Transport Assessment.

9.1.2 Environmental Benefits

The use of rail to move freight results in reduction in greenhouse gas emissions associated with the use of trucks to haul freight to destinations served by rail. The Government's decision to fund the refurbishment of 15 locomotives to enable the continued electric haulage of freight trains on the 410 km NIMT between Palmerston North and Hamilton results in associated environmental benefits of moving more freight by rail (1,500 m long trains) powered by renewable energy.

The development of a new facility will rely on KiwiRail's own environmental design and sustainability standards. These include the use of LED lights that will reduce the impact and operational cost of lighting the Freight Hub; the reuse of stormwater generated on the site and the management of other contaminants.

9.1.3 Spatial Planning Benefits

Moving from the Existing Freight Yard and developing as proposed will mean that PNCC is better able to realise its strategic plans related to encouraging rail and industry locating in the north east of the City. It also means that PNCC's aspirations in relation to providing industrial capacity in the existing urban area around the Existing Freight Yard on Tremaine Avenue as noted in its 10-year plan[17] through future redevelopment of the land within the historical industrial spine. It is noted that "Integrating rail to form a significant intermodal freight and distribution hub is a major strategic issue" identified in the Council's 10 Year Plan.

9.1.4 Employment Opportunities

Logistics contribute 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. KiwiRail will not only directly support this sector through the movement of freight but as outlined in the Economics Assessment (Technical Report K) there are advantages for businesses in locating

[17] Papaioea Palmerston North 2028 | 10 Year Plan 2018-2028, Palmerston North City Council

in the NEIZ adjacent to the Freight Hub. These include efficiencies in relation to the supply chain and opportunities to take up NEIZ land in the area where the take up has been slow. KiwiRail will also work with key customers on major infrastructure requirements to encourage logistics and distribution businesses into the area around the Freight Hub, to help grow the sector and create more local jobs.

KiwiRail has estimated that around 300 jobs will be associated with construction of the Freight Hub over the six years estimated in the Design, Construction and Operation Report (Technical Report A). It further estimates that within the first decade of operation there could be up to 2,000 people working at the Freight Hub.

9.1.5 Strengthening the Resilience of the Transport System

Situating the Freight Hub outside Palmerston North and integrating it with Waka Kotahi's planned freight road and Manawatu Gorge road will take freight traffic out of central Palmerston North and reduce congestion on Tremaine Avenue. KiwiRail is working with Waka Kotahi and other stakeholders to integrate its development with future roading network upgrades anticipated by other agencies.

9.1.6 Benefits of Moving the NIMT

The need to address the noise effects of the Freight Hub on the land to the east of the NIMT resulted in KiwiRail investigating the potential to relocate the NIMT at least 20m from the current alignment. This allows the future proofing of the NIMT through provision for a second track while providing what is anticipated to be positive noise and vibration effects as noted in Technical Report D to dwellings on the eastern side of the current NIMT between Bunnythorpe and Roberts Line as the 'bumps' in the corridor will be removed.

9.1.7 Benefits of Closing Railway Road

The Freight Hub will result in the removal of road traffic between Roberts Line and just before Maple Street because of the removal of Railway Road from this locality. Currently this section of Railway Road has a 100km/hr speed limit, undulating height, and several intersections. There will be a reduction in road traffic, particularly heavy vehicles, and a corresponding reduction in noise effects at houses on Roberts Line between Kelvin Grove Road and Railway Road. The closure of this road also closes the existing level crossings which access the road bringing further safety benefits as noted above.

9.1.8 Beneficial Stormwater Effects

The proposal has a number of positive effects associated with the stormwater design as outlined in section 9.7.1 of this report.

9.2 Construction Effects

9.2.1 Noise and Vibration Effects

Noise and vibration effects arising from the construction of the Freight Hub have been assessed in the Acoustics Assessment prepared by Chiles Limited, (Technical Report D). Construction noise has been assessed in accordance with the criteria in NZS6803:1999 Acoustics – Construction Noise which is also the construction noise standard used in the PNDP[18] . In the absence of any applicable New Zealand standards for construction vibration or PNDP criteria, construction vibration has been assessed in accordance with the Waka Kotahi developed construction vibration criteria which is based on the vibration standards from other countries.

The assessment identifies that for houses within 50 metres of the designation boundary, construction noise and vibration mitigation may be required to maintain compliance with the construction noise and vibration criteria referred to above. The assessment recommends mitigation for the following locations as outlined below.

Behind houses on Maple Street.

Near houses on Te Ngaio Road.

Around the stormwater retention ponds/wetlands to the west.

At various locations near the east site boundary.

[18] R6.2.6.2.1g

For the area behind the houses on Maple Street, the only construction work within 50 metres would be the formation of a permanent noise barrier and associated planting. This work would be relatively short-term and only involve standard earthworks/construction equipment. It should be practicable for these works to be undertaken during daytime only and compliance with the noise and vibration criteria should be achieved.

For the houses on Te Ngaio Road, the assessment recommends that the permanent noise mitigation wall on the designation boundary between the houses on Te Ngaio Road and the new perimeter road be constructed at the outset of construction works or alternatively a temporary construction hoarding could be used. With such screening the construction works in this vicinity should be able to comply with the construction noise criteria. Construction of the perimeter road should be able to comply with construction vibration criteria through construction management such as using non-vibratory rollers for compaction, if necessary.

Temporary screening could also be used to screen noise from the earthworks required for construction of the stormwater retention ponds/wetlands to maintain compliance with the noise criteria. Other methods that could be used include attenuation on equipment. To maintain compliance with the vibration criteria, methods to be used include the use of lower powered/smaller equipment.

To the east of the designation the main works relate to the formation of a bund and wall as a permanent noise barrier. There are also works required for installation of hydraulic structures such as pipes and culverts. All these works can generally be conducted during the daytime, and while there are significant bunds and walls to be constructed, these should involve standard earthworks and construction processes. It should be practicable to maintain compliance with the noise and vibration criteria in these areas, including the use of temporary screening if necessary.

The assessment also notes that it is unlikely that significant night works near houses would be required other than short-term activity such as connections to existing road and rail networks. This will limit potential sleep disturbance.

For houses beyond 50 metres and up to 200 metres from the designation boundary, the assessment states that compliance with noise and vibration criteria will generally be achieved using standard practices such as use of lower noise generating equipment and processes where available, and localised temporary screening around any items of noisier equipment.

The assessment recommends that a Construction Noise and Vibration Management Plan (CNVMP) be prepared for the Freight Hub to provide a structure in which issues can be identified and actioned. With the mitigation recommended the assessment considers that the noise and vibration effects from construction should be minor.

In consideration of the assessment, designation conditions are proposed requiring that a CNVMP be prepared which is to detail the methods to be used to achieve compliance with the noise and vibration criteria.

9.2.2 Transport Effects

There will be transport effects associated with the construction of the Freight Hub associated with the earthworks phase which will potentially require a significant volume of truck movements. However, the location of fill and disposal sites (and as a result the haul route to be taken) will not be known until closer to the time of construction.

A Construction Traffic Management Plan (CTMP) will be prepared to manage construction traffic in the vicinity of the site. The objective of the CTMP will be to minimise adverse effects on property access, traffic safety and efficiency because of construction works.

The CTMP will include the following details:

- An outline plan for enabling works, staging of works and identification of key activities during each work phase.
- The numbers, frequencies, routes, and timing of enabling and construction works traffic movements
- Identification of site access routes, site access arrangements and access points for heavy vehicles in a manner consistent with Waka Kotahi's Code of Practice for Temporary Traffic Management and measures to manage the movements of heavy vehicles during peak times.
- Methods to manage local and network wide effects of the construction, including temporary traffic management measures, such as traffic detours and temporary speed limits.
- Plan to limit the heavy vehicle construction traffic movements through key areas during night and peak times.
- Provision for maintaining safe pedestrian and cyclist access movements in the vicinity of the site.

- Allowable construction vehicle noise and requirements for effective noise suppression.
- Provisions for on-going vehicle access to private and adjacent properties.
- Provisions for new permanent accesses to be formed at the earliest opportunity to limit the adverse effects of construction and severance.
- Management of fine material loads (e.g. covers) and the timely removal of any material deposited or spilled on public roads.
- Traffic management communications plan.

Overall, the potential construction traffic and access effects can be appropriately mitigated through a CTMP, therefore effects are expected to be less than minor.

9.2.3 Effects from Land Disturbance

9.2.3.1 Erosion and Sedimentation

Uncontrolled release of sediment from earthworks has the potential to reduce the water quality of nearby waterways. This potential effect with respect to the ecological values of waterways has been assessed in the Assessment of Ecological Values and Effects (Technical Report F). The assessment states that the magnitude of effect on aquatic ecological values from erosion and sedimentation is likely to be very low against the background soft-bottom condition of the watercourses, even if a substantial amount of sediment was discharged (in a worst case scenario).

A resource consent will be required from HRC for earthworks. As part of this process, erosion and sediment control will be fully detailed in an Erosion and Sediment Control Plan prepared for the project in accordance with the Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region: Guideline Document 2016/005" (GD05).

The techniques for managing sediment discharge are expected to include measures such as:

- Limiting the area of exposed earthworks at any one time through staging of the works.
- Limiting the time of exposure of surfaces cleared of vegetation.
- Exposing surfaces at times of year when they are less susceptible to erosive effects.
- Limiting slopes in exposed areas.
- The construction of clean water diversions around exposed areas.
- The diversion of flows around work sites, particularly for work within existing watercourses.
- The construction, maintenance, and monitoring of sedimentation facilities.
- The stabilisation of exposed areas as soon as possible after earthworks has been completed.

Additionally, streams within the Freight Hub site are likely to be piped prior to substantial earthworks occurring. With the implementation of suitable erosion and sediment control measures the potential effects from erosion and sedimentation on waterways will be effectively managed. This will be detailed at the resource consent stage.

9.2.3.2 Dust

Given the broad scale of earthworks proposed dust will need to be controlled. The anticipated methods for dust suppression are expected to be water and/or polymer soil stabilisers for bare surfaces. A water spray system could use upwards of 100,000 litre per day necessitating a secure onsite water supply, or connection to PNCC water supply system. The use of rolled and compacted granular surface at the subgrade top of bulk earthworks level will reduce dust nuisance.

Management of dust will be outlined in the Construction Management Plan prepared for the Freight Hub and provided to Council for certification prior to construction.

9.2.3.3 Contact with Contaminated Soil

Land contamination effects associated with soil disturbance are discussed in section 9.11 of this report.

9.2.4 Visual Effects

The visual effects associated with construction have been assessed in the Landscape and Visual Effects Assessment (Technical Report E). The construction related visual effects result from the large-scale earthworks and building works and have been assessed as having the potential for high to moderate to high adverse landscape and visual amenity effects. Recommended mitigation includes establishing planting, and therefore noise mitigation and the stormwater ponds earlier so that the plants help reduce the visual impact of construction.

9.2.5 Social Impacts

Social impacts of construction are discussed in section 9.15 of this report.

9.3 Effects on the Transportation Network

The Freight Hub will have a range of potential effects on the transportation network associated with proposed road realignments and closures, and because of the traffic generated by the proposed Freight Hub. The potential transportation effects have been assessed in the Integrated Transport Assessment (ITA) prepared by Stantec (Technical Report C).

9.3.1 Transportation Assessment Approach

The assessment considers the transportation effects in terms of a staged approach, with the base year being the Freight Hub build at 2031 as a first stage of development and the full buildout at 2051.

Traffic modelling has been used to determine the likely traffic generation from the completed Freight Hub. The increase in traffic generation expected by the Freight Hub takes into account the NEIZ land that the Freight Hub will be located on and the corresponding resulting traffic reduction from activities in this zone that will be replaced by the Freight Hub. Taking this into account, it is expected that the Freight Hub will generate approximately 6,900 vehicles per day at full build out. A light to heavy vehicle ratio of 60%/40% is expected and is used in the model. Heavy vehicles travelling to the Freight Hub are expected to travel along popular freight routes like, SH3, SH54, SH56, Campbell Road and Kairanga Bunnythorpe Road.

There are a number of road network upgrades over the next 10 years already planned within the area by the PNCC and Waka Kotahi[19] as the road network controlling authorities. These works include intersection upgrades, bridge upgrades, road widening and safety upgrades. The transportation analysis undertaken revealed a need for three additional intersection upgrades that would need to be completed by the existing road network controlling authorities as the intersections currently have unacceptable levels of service. These upgrades collectively are considered within the assessment as the 'do minimum' road network.

Development of the Freight Hub will result in a number of additional changes and upgrades to the transport network which are outlined within section 6.3.2 of this report. As outlined earlier a key change is the closure of the existing Railway Road alongside the Freight Hub and the construction of a new perimeter road along the western boundary of the Freight Hub. Other changes include road and intersection upgrades, new Freight Hub accesses and removal of existing level crossings.

A further level of network changes is included in the assessment, the ultimate road network. The ultimate road network includes future western and southern bypasses and wider road network around Palmerston North which will include the ring road as planned by Waka Kotahi. This road network will allow traffic, especially heavy vehicles, to bypass the Bunnythorpe area and the Palmerston North CBD. This network was not used for scenario testing and analysis as the timelines are still unclear. Notwithstanding this, it is understood that the authorities (Waka Kotahi, PNCC and KiwiRail) accept that they will work together in developing and delivering a coordinated future transport plan in terms of these upgrades. A Roading Network Integration Plan provides a mechanism for these parties to work together to develop a coordinated future transport network.

9.3.2 Network Performance Effects

The Freight Hub and the network changes have been analysed to determine if the proposed upgrades (excluding the ultimate road network) will allow the safe and efficient operations of the expected traffic demand. The three assessment categories are traffic demand, traffic distribution and network performance as outlined below.

9.3.2.1 Traffic Demand

The Freight Hub will result in an increase in traffic demand and a higher percentage of heavy vehicles however the road network will not deteriorate beyond what is expected without the Freight Hub in terms of level of service. The traffic increase is therefore considered negative-minor.

9.3.2.2 Traffic Distribution

The general traffic shift in traffic distribution will be localised near the Freight Hub. The key traffic shift will be from the existing Railway Road to the new perimeter road with a volume shift of 10,000 vehicles per day and the biggest heavy vehicle traffic shift. The new road will be designed to cater for this traffic. Overall, there will be a range of traffic additions and subtractions to roads, with a total traffic shift of less than 24% which is assessed as a negative-minor effect on the road network.

[19] As identified in the PNCC 10 year plan and Waka Kotahi National Land Transport Program

9.3.2.3 Network Performance

The analysis shows the performance of the road network will remain reasonably constant with or without the Freight Hub (and associated upgrades). For the base year with the do minimum upgrades, the road links around the Freight Hub will continue to operate at an acceptable, although strained, level of service. At full build out (with the KiwiRail proposed changes) the analysis shows the road links around the Freight Hub will operate at an acceptable level of service and the road network will have sufficient capacity to accommodate the traffic demand from both the Freight Hub and the full development of the remaining NEIZ, apart from Waughs Road between Feilding and SH54 which is an existing limitation. Railway Road south of El Prado Drive will experience an increase in traffic volumes due to the Roberts Line level crossing closure but will have adequate capacity to accommodate this increase.

It is expected that traffic management will be used along Flygers Line to redirect heavy traffic to parallel roads identified as heavy vehicle routes. This could be as simple as installing a directional sign.

Intersection analysis shows more intersections operating at unacceptable levels in the future. SH54/Waughs Road, Tremaine Avenue/Milson Line, SH3/Flygers Line, and Campbell Road/Kairanga Bunnythorpe Road intersections will perform poorly. However, the analysis shows these intersections will perform equally as poorly even without the Freight Hub and will need addressing by the road network controlling authorities. Due to the proximity and the contribution the Freight Hub makes to the intersection performance, the assessment recommends upgrades for the Campbell Road/Kairanga Bunnythorpe Road intersection and the Railway Road/Kairanga Bunnythorpe Road intersection which need to be considered in conjunction with the Kairanga Bunnythorpe level crossing as a 'node'.

Overall, the assessment finds there will be a negative minor impact on the total traffic performance based on these three categories.

9.3.3 Property Access and Travel Time Effects

The Freight Hub location and the proposed road layout changes will have effects on property access for some properties and route choice between destinations. These are discussed below.

9.3.3.1 Property Access

There are two properties who gain access to Railway Road from the Richardsons Line level crossing and an alternative access will be constructed by forming Sangsters Road to Roberts Line. The increase in travel time to Bunnythorpe will be around 6 minutes, however this time will be offset by the reduction in road safety risk by the level crossing closure. This effect is assessed as negative-minor.

9.3.3.2 Route Travel Time

Route travel times for residents will be affected by the closure of the Roberts Line level crossing and by other road changes that will remove existing road connections with Railway Road (Roberts Line East, Richardsons Line west, Clevely Line, Te Ngaio Road, Sangster Road). The maximum increased travel time will be for access from Richardsons Line west where an increase of 6 minutes is predicted for travel to Bunnythorpe. However, the average impact of travel time for residents will be 2.5 minutes. Overall, this effect is assessed as negative-minor.

For travel time generally, the largest impact will be due to the closure of the Roberts Line level crossing which will increase the travel time required for traffic travelling between Kelvin Grove in Palmerston North and the NEIZ by 4.2 minutes. The average increase is up to 30 seconds in the base year and up to 45 seconds in the ultimate year which is assessed as a negative-minor effect.

The increase in train length from the current 900m up to 1500m could cause a delay at the Kairanga Bunnythorpe Road level crossing ranging between 41-108 seconds for the first vehicle at the crossing (900m trains) and 68-108 seconds for the longer 1500m, with an increase in travel time ranging from less than 30 seconds to just over one minute. The level of effect is assessed as negative-minor effect. It is also noted that with longer trains there is likely to be less trains traversing this crossing.

The overall property access and travel time effects are assessed as negative minor.

9.3.4 Safety Effects

9.3.4.1 Level Crossing Closures

The closure of the three level crossings will result in road safety benefits which is assessed as a positive-moderate effect. The assessment recommends that a Level Crossing Safety Impact Assessment be undertaken for the Campbell Road/Kairanga Bunnythorpe Road level crossing and the Waughs

Road/Campbell Road level crossing, to determine the safety risks and need for safety improvements at these level crossings, however this is not assessed as a direct effect of the Freight Hub.

9.3.4.2 Road Safety Risk

Infrastructure Risk Rating Assessment shows that at the time of full build out, the road safety risk will predominantly remain the same even with the increase in traffic demand on the road network. There will be some roads with increased safety risk, however, not enough to move into the next risk category. It is likely that the safety risk on the new perimeter road will be lower than the risk experienced on existing Railway Road, due to the improved infrastructure expected along the perimeter road.

Overall, this is assessed as a positive-minor effect.

9.3.5 Public Transport Effects

There is currently a single bus route (including a school bus route) connecting Bunnythorpe and Fielding with Palmerston North which runs along Railway Road and utilises the Clevely Line crossing. The bus route will be redirected along the new perimeter road and will provide an opportunity for the level crossing at Kairanga Bunnythorpe to be designed to cater for the safe and efficient crossing of buses which will improve safety for all users.

The redirected route also provides the opportunity for PNCC to include bus stops around the NEIZ and Freight Hub which will provide safe and efficient access to these two workforces attracting developments. The new perimeter road provides opportunity for the inclusion of well-designed bus stops along this route.

The effects on public transport are therefore assessed as positive-minor.

9.3.6 Walking and Cycling Effects

Improvements to the Te Araroa Trail are envisaged by forming sections of the trail making it more usable in all-weathers and able to be used by cyclists. Effects on walking and cycling are assessed as a negative-minor effect.

9.3.7 Parking

All parking for the Freight Hub will be accommodated on site. Parking effects are therefore assessed as positive-minor.

9.3.8 Summary of Effects on the Transport Network

Overall, taking into account the do minimum road upgrades already proposed by PNCC and Waka Kotahi, and the additional road changes proposed by KiwiRail, it is assessed in the ITA that there will be a minor-negative (minor adverse) transportation related effect as a result of the Freight Hub.

In consideration of the assessment, a condition is proposed to require that a Roading Network Integration Plan (RNIP) is prepared as a mechanism to enable the roading network for the Freight Hub can be appropriately managed and integrated with the existing local network including pedestrian and cycling facilities and with future planned improvements to the wider transport network .

A condition is also proposed requiring a Level Crossing Safety Impact Assessment be undertaken for at the Campbell Road/Kairanga Bunnythorpe Road level crossing and the Waughs Road/Campbell Road level crossing, the recommendations of which would be implemented in consultation with PNCC.

9.4 Noise and Vibration Effects

The Freight Hub operational noise and vibration effects have been assessed in the Acoustic Assessment (Technical Report D). Operational noise has been assessed in terms of the operational noise within the Freight Hub itself (on-site operational noise) excluding construction of ancillary areas for stormwater retention, noise barriers and landscaping (assessed under construction noise above), and the operational noise from proposed road realignments. Operational vibration is assessed in terms of the vibration created by activities within the Freight Hub. Noise and vibration from the NIMT and future increases in railway traffic are excluded from the assessment as these effects occur regardless of the Freight Hub proposal. The assessment is summarised below.

9.4.1 On-Site Operational Noise

Operational noise criteria incorporating noise limits has been developed for the proposed Freight Hub based on the District Plan noise limits and various New Zealand noise related standards. The criteria are outlined in the following Table 9-1.

Table 9-1 Operational Noise Criteria

Noise Criteria		Comments
Category A	Day: <55 dB $L_{Aeq(1h)}$ Evening: <50 dB $L_{Aeq(1h)}$ Night: <45 dB $L_{Aeq(1h)}$ Night: <75 dB L_{AFmax}	Similar to existing noise allowed from the NEIZ. A change from existing Rural Zoned activity but noise would remain compatible with residential activity.
Category B	Day: 55-65 dB $L_{Aeq(1h)}$ Evening: 50-60 dB $L_{Aeq(1h)}$ Night: 45-55 dB $L_{Aeq(1h)}$ Night: 75-85 dB L_{AFmax}	Houses may need to be acoustically treated and mechanically ventilated as necessary to meet a level of 35 dB $L_{Aeq(1h)}$ in bedrooms and 40 dB $L_{Aeq(1h)}$ in other habitable spaces.
Category C	Day: >65 dB $L_{Aeq(1h)}$ Evening: >60 dB $L_{Aeq(1h)}$ Night: >55 dB $L_{Aeq(1h)}$ Night: >85 dB L_{AFmax}	Freight Hub noise is likely to be incompatible with residential activity.

An acoustics computer model was used to predict the level of noise emissions from the Freight Hub. The noise model is intended to be representative of busy daytime operations for the fully developed Freight Hub. The model predicts that without mitigation, the Freight Hub has a relatively large noise footprint with predicted levels exceeding the recommended criteria. This daytime activity would be clearly audible and potentially disturbing at houses to the east, north and west of the Freight Hub and would likely cause sleep disturbance for residents.

To mitigate this effect, the assessment recommends the following noise barriers be constructed:

- East boundary – a continuous barrier over 3km long formed by a combination of an earth bund/embankment and a concrete wall. The heights of the bund and wall would vary along the east boundary depending on the fluctuations of the existing terrain, but they should be designed to always maintain the top of the wall at 5 metres above the level of the Freight Hub.
- North boundary – a 3m high barrier, mainly formed by an earth bund other than where space is not available when it would be a concrete wall. Due to the terrain, the top of the barrier relative to the Freight Hub would range from 5m to 8m above the Freight Hub. This barrier would also provide screening of the new perimeter road.
- West boundary – a 3m high barrier formed as either a timber or concrete wall.

With the noise barriers, for daytime operations, the predicted levels from the Freight Hub at most locations will be less than the 55 dB LAeq(1h) Category A criterion[20] . The assessment also recommends the following noise management measures to control potential noise effects:

- Future noise modelling at stages of development (for which an OPW is required) or prior to any significant changes in activity such as the introduction of a new noisy activity or substantial expansion of an existing activity. The modelling may indicate the need for refinement/optimisation of noise barrier heights.
- Operation of the site by KiwiRail, and all third parties, in accordance with a Noise Management Plan (NMP). This would set out matters such as the noise and vibration criteria, noise modelling and barrier design, good practice site noise management measures, and community liaison and complaints processes. For community liaison, the NMP should rely on a broader Community Liaison Forum for the site, which should include regular meetings where noise issues can be raised and considered.

[20] Nighttime operations have not been modelled but the affected area is expected to reduce as many elements of the Freight Hub would be primarily daytime activities.

- Investigation of all houses where an exceedance of the Category A criteria is predicted and treatment as necessary to achieve acceptable internal noise levels of 35 dB LAeq(1h) in bedrooms and 40 dB LAeq(1h) in other habitable spaces. This should only apply to houses existing at the date the NoR is confirmed[21].
- Permanent noise monitoring at two reference locations, with one to the east and one to the north of the Freight Hub. The monitoring would inform the management of the site under the NMP and would provide a proactive means of identifying any unanticipated noisy activities on the site. The monitoring would also provide a record to allow review and investigation into any issues arising.

9.4.2 Road Traffic Operational Noise

Road traffic operational noise relates to the road traffic noise associated with the new perimeter road and for traffic on the wider roading network associated with the Freight Hub. For road traffic operational noise NZS6806 Acoustics – Road traffic noise is used as this is the criteria applied to most major roading projects throughout New Zealand. These relevant criteria are shown below in Table 9-2 with the 'new road' criteria being applicable to the new perimeter road.

Table 9-2 Road Noise criteria

Category	New road criteria	Altered road criteria
Category A	57 dB $L_{Aeq(24h)}$	64 dB $L_{Aeq(24h)}$
Category B	64 dB $L_{Aeq(24h)}$	67 dB $L_{Aeq(24h)}$
Category C (internal)	40 dB $L_{Aeq(24h)}$	40 dB $L_{Aeq(24h)}$.

A prediction of noise levels because of the perimeter road has been made at the nearest house which is 245 Te Ngaio Road. The predicted noise level at this house with no noise mitigation is 54 dB LAeq(24h) which is within the most stringent NZS6806 Category A criteria. All other houses which are further away should experience noise levels lower than this. However, it is recommended in the assessment that a full assessment of road traffic noise should be undertaken when the road is designed to confirm these findings (or confirm any additional mitigation required).

The following roads have been identified as potentially having an increase in traffic because of the Freight Hub which is potentially significant in terms of noise:

- Stoney Creek Road
- Roberts Line
- Kairanga Bunnythorpe Road

With respect to Stoney Creek Road and Kairanga Bunnythorpe Road, while there is a significant increase in traffic and noise forecast on these roads, this is within normal expectations of changes that will typically occur on the roading network. Given the existing primary collector[22] function of these two roads the increase in noise associated with an increase in traffic should be acceptable. With respect to Roberts Line, there will be a forecasted increase in heavy vehicles on this road, however overall traffic is predicted to be modest (1100 vehicles per day). There are only a few houses on this road and the nearest is 25m from the traffic lane. One this basis, future noise effects from heavy vehicles is assessed as minor.

9.4.3 Operational Vibration

Norwegian Standard NS8176 is used as the vibration criteria in the absence of applicable New Zealand standards. The NS8176 recommends a criterion of 0.3 mm/s vw,95 at existing houses. The assessment states that trains in the Freight Hub will be on new ground and track formations which will reduce potential vibration. To the north, south and west of the Freight Hub there are no houses within 100 metres of the indicative location of the railway tracks within the Freight Hub and the criterion should be achieved with no mitigation. To the east of the Freight Hub the nearest houses are 60 metres away. The assessment states that compliance is likely, and vibration at these houses should be significantly less than existing vibration from the NIMT. The assessment recommends that at detailed design stage, compliance with the

[21] New habitable rooms constructed within 100m of the nearest edge of a railway track are required to achieve this in accordance with Rule R9.11.3 in the PNDP.
[22] In accordance with Waka Kotahi's One Network Road Classification

criterion should be confirmed and if necessary, mitigation such as resilient track forms should be used to maintain compliance.

9.4.4 Summary of Noise and Vibration Effects

Overall, the assessment concludes that with the mitigation and controls recommended the residual noise and vibration should be at reasonable levels and effects should be acceptable in this environment.

In consideration of the assessment, conditions are proposed to cover the following noise and vibration related matters:

- An Operational Noise and Vibration Management Plan that sets out the noise and vibration criteria, noise modelling and barrier design. The report shall include investigation of all houses where an exceedance of the Category A criteria is predicted and treatment as necessary to achieve acceptable internal noise levels of 35 dB LAeq(1h) in bedrooms and 40 dB LAeq(1h) in other habitable spaces. This should only apply to houses existing at the date the NoR is confirmed.
- Construction of noise barriers at the locations outlined above.
- Permanent noise monitoring at two reference locations, with one to the east and one to the north of the Freight Hub.
- Completion of a noise assessment for the perimeter road once designed to confirm levels of road traffic noise and identify any additional mitigation required.

9.5 Visual and Landscape Effects

The potential for adverse landscape and visual effects of the proposal relate to the modification of the natural environment by altering the landform and culverting the existing streams, removal of vegetation, and the built form of the Freight Hub elements including proposed noise mitigation walls. Landscape and visual effects have been assessed in the Landscape and Visual Effects Assessment (Technical Report E). The assessment assesses these effects in terms of:

- The natural character of the Mangaone Stream and its tributaries
- The change in the natural and urban landscape
- Views and visual amenity

These are summarised below.

9.5.1 Natural Character of the Mangaone Stream and its Tributaries

The potential for adverse natural character effects relates to the redirection and constructed conveyance of the existing stream tributaries through the site over three catchments, however the streams themselves are assessed as having low existing natural character overall. The assessment states that the effects on the northern most stream will be reduced due to the proposed recreation and naturalisation of this channel and notes the benefits of providing fish passage within the streams to be culverted. The Freight Hub stormwater detention ponds are considered within the assessment to be part of the natural character of the Mangaone Stream and its tributaries, as they will feed into the Mangaone Stream and will be in close proximity to it. The assessment states that the ponds will have natural character benefits resulting from the proposed planting to the edges with species that would have been typical for this area. The proposal also presents future options for public access to and around these ponds in association with the maintenance access that will be required. Overall, the effects on natural character and the potential for future ecological gains have been assessed as being moderate positive.

9.5.2 Natural Landscape

The effects on the natural landscape relate to the change in the sites contour, removing the undulating landforms and flattening the site together with creation of the stormwater detention ponds, and the removal of all existing vegetation. The recontouring of the site will result in a number of cut faces and fill batters, however the assessment notes that although the change in the topography will have an effect level that is high, these will be able to tie into existing contours and will be able to be planted. Significant planting is also proposed within the Freight Hub site and around the edges of the proposed stormwater ponds which is mitigation for the change in natural landscape and the loss of vegetation. Planting will also help integrate the built forms of the Freight Hub buildings into the surrounding environment. Proposed planting will consist of naturalised groupings with larger trees tracing the waterways through the site. Species will be typical of the area and its historic landcover including kahikatea dominant forest and wetland species.

Taking into account the NEIZ that is already in place in the southern part of the site, the natural landscape effects are assessed as being moderate-high adverse. Further mitigation for the future buildings can be achieved through articulation of the design to manipulate perceptions of scale and fit, and quality of finish

including a coherent palette of materials for all structures together with adherence to the NEIZ design guide.

9.5.3 Urban Landscape

The effects on the urban landscape relate to the overall fit of the main Freight Hub works and the perimeter road with the existing urban patters such as existing and future land use, the grain of existing development and existing road and rail connections. The assessment notes that although the Freight Hub will be of a different scale and character to the surrounding rural and rural-residential properties and the township of Bunnythorpe, larger scale buildings are located to the south of the site within/adjacent to the NEIZ which means the proposed layout provides the best potential interface with the scale of the surrounding land uses. Other effects result from the proposed noise mitigation walls which may have an effect of the urban landscape where they are located at a distance from the main Freight Hub, and effects from the change in roading connections (although this is assessed as being low).

The assessment states that the effects of the proposed noise walls can be reduced though planted batters to integrate them into the landscape and reduce their visual dominance. Wider urban landscape effects will be mitigated in part through the proposed realignment of the NIMT to provide greater separation between rail activities and residential homes close to Sangsters Road. The assessment notes an opportunity at this location to realise a section of the rural cycle path as part of the reconfiguration of the Te Araroa Trail between Bunnythorpe and Roberts Line (by PNCC) and to provide a lookout area over the Freight Hub and wider Mangaone Stream landscape. Effects are also reduced through the extensive planting proposed throughout the site and the potential to establish an improved gateway into Bunnythorpe. Built form effects can be mitigated through planting and appropriate design as discussed above. Overall, the urban landscape effects are assessed as being low-moderate adverse.

9.5.4 Visual Amenity

Visual amenity refers to the amenity derived from views. The viewing audiences for the site include the following:

- Passengers travelling along the NIMT.
- Motorists travelling along existing roads.
- Users of the existing industrial area.
- Visitors to the Bunnythorpe cemetery.
- Residents and visitors to the Bunnythorpe township.
- Residents who have an open outlook onto the site in the surrounding area.
- Pedestrians travelling along the Te Araroa Trail.

The effects for rail passengers are assessed as being low. The Freight Hub will be viewed for a short section of the rail journey and may provide visual interest for rail enthusiasts. At detailed design stage the built form elements can be designed to have coherent visual quality and logic to the layout. Large areas of planting proposed to the north western boundary and the perimeter road will also feature in the views on approach to Bunnythorpe, an uplift to the existing visual quality of the area.

The effects for passing motorists are assessed as more likely in close views such as from Roberts Line, Clevely Line, Te Ngaio Road, Sangsters Road, the remaining sections of Railway Road and the perimeter road and will be most obvious where there are larger components in the foreground (where there are no existing or proposed mitigation features that would provide screening or a logical context to integrate the proposal) or with respect to the noise walls along Sangsters Road. Extensive areas of planting will improve the visual quality of the existing environment in some locations where existing visual amenity is low (which is considered in the assessment to be a positive effect) and will help break up the scale of the buildings and soften and integrate the appearance of noise walls. The effects for passing motorists are assessed as being low or low to moderate at worst for close views, and very low or low at worst for distant views.

Adverse visual effects experienced as a result of the sites proximity to other areas of the NEI Zone (including that still to be developed west of Richardson's Line) are assessed as being negligible, as the change in character is to be anticipated and the buildings can be designed to ensure consistency and coherent visual quality.

Adverse visual effects for visitors to Bunnythorpe cemetery are assessed as being very low. From within the cemetery near the main grave sites and paths, there will be limited views of the development and proposed planting will off-set the removal of vegetation that may be able to be viewed from some parts of the cemetery.

The potential adverse visual amenity effects are assessed as low from the Bunnythorpe township due to limited views from discrete areas and the low visual quality of existing views. Visual amenity effects relate

mainly to the design and planting around the required noise mitigation walls. The assessment states that with appropriate design detailing and planting the Freight Hub could improve the visual amenity of this area.

Effects for pedestrians travelling along Te Araroa Trail relate primarily to the reduction in rural views as a result of the noise wall from Clevely Line to Roberts Line, however the assessment states that this effect can be mitigated through planting to soften the appearance of the wall. It is also noted in the assessment some edges of the trail are currently weed infested which will be replaced by more suitable planting. Effects on this group are assessed as being low to moderate.

For residents, properties with unobstructed, open views in close proximity to the site are most likely to experience adverse visual amenity effects. The assessment states the Freight Hub has the potential to have high adverse visual amenity effects for some properties. Those potentially adversely affected, and the recommended mitigation are summarised in Table 9-3 below.

Table 9-3 Visual Amenity Effects - Residents

Location	Level of Potential Effect	Mitigation
Roberts Line east of Railway Road	Negligible	None proposed
Roberts Line west of Railway Road	High	Proposed planting to the site boundary edges including larger (mature height) tree species which will provide screening and a counterpoint or balance to the larger scale buildings and the planting integrated around the stormwater ponds. Planting within property boundaries where this is confirmed as being required through further technical assessment and on agreement with landowners, to achieve faster screening.
Clevely Line West	High	As for Roberts Line west of Railway Road
Te Ngaio Road east of Maple Street	High	Further investigation of all properties east of Maple Street in the next stages of the project to determine the best option in terms of the noise mitigation design and associated mitigation planting.
Eastern side of Maple Street	Moderate to high from properties 9 and 11 where there are two storey homes, and other single storey properties with an open outlook located in close proximity to the designation boundary/noise bund (however the assessment notes that views from the upper storey will not be impacted by the noise mitigation bund and most components of the main Freight Hub will be at a distance).	Further investigation of noise mitigation design to ensure there is a consistent approach along the Maple Street edge of the designation extent, and that this has a good fit with the character of the landscape, whilst minimising adverse effects on visual amenity (such as retaining the bund in pasture rather than planting which would reduce its perceived height).

Location	Level of Potential Effect	Mitigation
Clevely Line east, Sangsters Road, Parrs Road and Tutaki Road	Varies depending on proximity of homes to the Freight Hub boundary, topography and existing vegetation from low-moderate to moderate-high	Planting to the edges of the noise wall with tree species to screen a greater extent of the buildings over time. Further technical investigation of properties east of Sangsters Road to determine whether additional mitigation planting is required to manage visual amenity effects as these properties are in close proximity to the NIMT and will have open views over the Freight Hub.

The assessment recommends that in the next stages of the Freight Hub visibility mapping should be used to identify properties where further site investigation is warranted, and whether additional mitigation planting may be required. The residential properties recommended for further investigation area located:

- Between Richardson's Line to 873 Roberts Line.
- 63 Clevely Line West.
- Te Ngaio Road properties east of Maple Street; and
- Residential properties directly alongside the NIMT that have an open and or elevated view towards the site.

9.5.5 Lighting

The Lighting Design Report appended to the Design, Construction and Operation report (Technical Report A) outlines the lighting standards that must be achieved in accordance with AS/NZS 4282:2019, and shows with 1 Lux Isolux contour lines the potential level of spill in relation to residential properties[23].

The Landscape and Visual Effects Assessment recommends that any lighting effects will need to be assessed and appropriately addressed as part of the detailed design of the Freight Hub.

9.5.6 Summary of Visual and Landscape Effects

The overall assessment of landscape and visual effects as per the assessment is that the proposed Freight Hub "will have positive effects on natural character and provide some urban landscape and visual amenity benefits" and that the benefits can be enhanced by future design and mitigation measures as set out in the report recommendations. The assessment states there will be some residual adverse effects on the natural landscape, urban landscape and visual amenity that are more than moderate in relation to noise mitigation walls, main Freight Hub buildings and roading changes and for some viewing audiences. The report also states that this is to be expected for a project of this scale and KiwiRail should look for opportunities to further mitigate these effects where necessary.

Where effects are identified as being more than moderate, the following matters should be considered I at the detailed design stage of the Freight Hub (in addition to the extensive planting as outlined in the concept Landscape Plan):

- Additional flood plain planting to enhance natural character and further mitigate adverse effects on natural landscape and visual amenity such as in areas where residential properties are closest to the Freight Hub, between the two stormwater ponds and the channel outfall. The extent to which additional planting is needed will depend on how early the planting proposed under the Landscape Plan is underway, as mature planting is better able to mitigate effects.
- Articulation of buildings in accordance with the NEIZ design guide
- Roading design to consider integration with the surrounding character of the rural residential properties and Bunnythorpe township. Design matters to consider include carriageway widths, requirements for curb and channel, intersection type options, lighting, and associated planting to improve the quality of the urban environment and tie into the broader patterns of mitigation planting proposed.

[23] According to AS/NZS 4282:2019, the Freight Hub is within zone A2 where the vertical illumination on the walls of residential buildings containing windows is not permitted to exceed 1 Lux.

- Design opportunities to integrate a rural cycle path into the reconfiguration of the Te Araroa Trail in consultation with PNCC, along with a possible outlook over the Freight Hub site to enhance the urban landscape. Alternatively, this route could be accommodated along the new perimeter road footpath or off-road trails proposed to access the stormwater ponds.
- Lighting design should consider opportunities for 'zoned' approach to fit particular uses across the site and a design to limit visual clutter through reduced number of lighting poles balanced with maintaining lower tower type lighting.

In consideration of the assessment, conditions are proposed to cover the following visual and landscape related matters:

- Preparation of a Landscape Plan generally in accordance with the concept landscape plan which is to detail the following:
    - Planting of stormwater detention ponds, and stream and riparian margins
    - Planting of cut faces and fill batters
    - Planting to integrate the built forms of the Freight Hub buildings into the surrounding environment
    - Planting to screen and soften noise mitigation walls
    - Planting of noise mitigation bunds

9.6 Ecological Effects

The Freight Hub will involve the transformation of the existing pastural landscape including the removal of vegetation and the piping of streams that flow through the Freight Hub. The Assessment of Ecological Values and Effects assesses the ecological values present and the level of ecological effect of the proposed activities (Technical Report F). A summary of the assessment of ecological effects is provided below.

The existing ecological values of the site are summarised below:

Unit/Feature	Comment	Overall Value
Terrestrial Environment		
Vegetation	The existing vegetation is not representative of historic communities, there are no rare or distinct species, there is low diversity and limited pattern. The native amenity plantings are small and sporadic across the landscape. Exotic plantings may provide shelter for some fauna.	Negligible
Avifauna habitat	No specific conservation-valued species appear in records or were recorded on site and it is unlikely there are any values associated with indigenous avifauna.	Negligible
Avifauna species		Negligible
Herpetofauna habitat	Highly unlikely any Threatened or At Risk lizard species are present. There may be some Not Threatened species.	Negligible
Herpetofauna species		Negligible
Aquatic Environment		
Wetlands	None present	None present
Steam system 1	Highly modified ephemeral flow path, unlikely to support Threatened or At Risk fish species. Stock access, limited vegetation.	Low
Stream system 2 – northern tributary within the Freight Hub site	Highly modified, straightened, may support eel and common bully in lower reaches. Stock access, limited vegetation.	Low
Stream system 2 – northern tributary upstream of the Freight Hub site	Highly modified, straightened, may support Threatened or At Risk fish species. Some vegetation and fish habitat.	Low

Unit/Feature	Comment	Overall Value
Stream system 2 – southern tributary	Ephemeral flow path, contributes hydrological flow to downstream aquatic environments.	Negligible
Longfin Eel	As per above	High
Other aquatic fauna	As per above	Negligible

9.6.1 Vegetation Clearance and Loss of Habitat

The effects of vegetation clearance and the consequential loss of avifauna and herpetofauna habitat is assessed as having a very low level of effect due to the largely exotic nature of the vegetation, the absence of indigenous species or habitat and minimal functional riparian vegetation. The assessment recommends that the appropriate permits are obtained from the Department of Conservation (DOC) in accordance with the Wildlife Act 1953.

9.6.2 Stream Loss

The loss of each length of stream has been assessed in relation to the linear length of mapped stream within each tributary catchment they are associated with and as part of the wider Mangaone Stream catchment, and taking into account the negligible to low value/quality aquatic habitat. Stream loss varies between 3% and 12% of stream length which is assessed as having a low magnitude of effect. Within the Mangaone Stream catchment as a whole, the overall loss equates to less than 1% of stream length which is assessed as having a negligible magnitude of effect. The overall level of effect associated with stream loss is assessed as being very low.

The assessment notes that replacement of the streams with equal or better value/quality open-channel aquatic habitats is not required (by effect level or statutory document) to offset the loss. However, to compensate for the stream loss generally from within the wider catchment, an alternative replacement aquatic habitat, even of a simple form, could be dug around the Freight Hub, where possible and practicable, to collect and convey stormwater and provide replacement aquatic habitat. This may not be possible for the northern tributary of stream system 2 but a reasonable length of new stream could be created such that the linear extent of aquatic system pre- and post- development could be similar.

9.6.3 Fish Passage

The installation of culverts can impede migrating fish if installed without suitable fish passage design. The assessment notes this is only of concern where a culvert is installed in a perennial section of stream which has upstream fish habitat (Stream 2) and/or where fish passage is already provided for through an existing culvert which will be upgraded. The assessment states that if installed correctly allowing for unimpeded fish passage, the piping of streams may actually improve fish passage as the pipe could provide a less stressful route than currently exists within the unshaded, unfenced homogenous environment of Stream 2 (where fish passage currently occurs). Given the low value of Stream 2, the assessment states that with suitable culvert design, there will be a positive effect on fish passage within the stream. This gives an overall low level of effect for fish passage because of the proposal. The assessment recommends undertaking fish salvage efforts within affected streams prior to any works in these streams.

9.6.4 Contamination from Stormwater

Stormwater runoff from the Freight Hub site has the potential to reduce water quality because of the input of contaminants such as copper, lead, zinc, and hydrocarbons. The Boffa Miskell assessment states that with suitable treatment of stormwater runoff from the site, such as the use of treatment wetlands or swales, the potential effects from contaminated stormwater are likely to be very low, and may even be positive due to the reduction in nutrients from the existing farming practices currently entering waterways.

9.6.5 Summary of Ecological Effects

In summary, with the mitigation recommended and proposed (including the stream recreation), the ecological effects of the proposal overall are considered within the assessment to be at worst low.

The recommendation for suitable fish passage within culverts is a matter that can be considered at the resource consent stage of the project, as resource consent will be required for stream diversions.

Stormwater management at the site will be designed in accordance with the stormwater discharge and flooding treatment requirements in the regional plan and the District Plan. This will meet the expectations of the District Plan provisions related to the NEIZ that adverse effects of stormwater runoff are mitigated by using on-site primary stormwater management with collection and storage, and permeable surfaces, in addition to integrated secondary processing through common watercourse reserve areas.

Wildlife permits to be obtained from the DOC are not associated with an effect of the designation and can be obtained outside of this process.

9.7 Stormwater Management Effects

Development of the Freight Hub site will result in substantial land modification through levelling of the site and the creation of impervious surfaces, and a change in use of the site from pastural land use to that of the Freight Hub. Stormwater generation from the site therefore must be managed to ensure the level of flood risk is not increased and the quality of stormwater runoff does not reduce water quality.

The provisions of the District Plan outline how the discharge of stormwater from land in the NEIZ is to be managed. The NEIZ provisions recognise that the area is part of a large catchment which feeds into the Mangaone Stream and that it is necessary to carefully manage the discharge of stormwater to avoid adverse effects on downstream properties. The District Plan indicates that the response to stormwater management within the NEIZ involves the adoption of on-site Water Sensitive Design (WSD) measures in conjunction with the use of existing gully systems for stormwater attenuation.

The stormwater management effects have been assessed by Stantec in the Stormwater and Flooding Assessment (Technical Report G). The effects are summarised below.

9.7.1 Positive Effects

The assessment states there will be several potentially positive outcomes for stormwater because of the Freight Hub. These include the following:

- The upgrading of the existing culverts under the NIMT and Railway Road in accordance with current design standards, which will consider the effects of climate change on stormwater runoff rates and may reduce the potential flooding risk to upstream properties.
- Upgrading of these culverts creates opportunity to incorporate improved measures for fish passage.
- Opportunity exists to improve the ecological value of streams where these are retained or reconstructed (for stormwater management purposes).
- A change from rural to urban land use and the inclusion of stormwater treatment systems will result in a reduction of sediment loads discharged to streams downstream.
- Comprehensive development of the site enables implementation of best practice stormwater management across the whole 177.7ha site which may be unable to be achieved with piecemeal developments as would normally occur, even under the provisions of the NEIZ.

9.7.2 Potential Adverse Effects

The final stormwater design for the Freight Hub will be undertaken at detailed design stage and will inform any stormwater discharge consents required from HRC. Therefore, the level of effects assessment undertaken at this stage is to ensure that there is sufficient scope within the designated area to enable the effective management of stormwater.

The relevant effects and their mitigation as per the stormwater assessment are outlined below.

9.7.2.1 Upstream Flooding Risk

Upstream flooding effects can be managed through the sizing and hydraulic efficiency of the stormwater conveyance systems through the site, and the design of the system inlets to minimise culvert blockage risk including alternative entry into culverts and alterative flow routes. This can be confirmed via hydraulic modelling undertaken at detailed design stage and through the resource consents that will be required for stream diversions and culvert installation.

9.7.2.2 Downstream Flooding Risk

The proposed designation includes land for stormwater detention ponds. The purpose of the detention ponds is to allow for a reduction of peak flow so as not to increase flood levels downstream of the site. Conservative analysis has been carried out of pre-development and post-development run-off to determine the appropriate sizing for the stormwater ponds and the locations were determined based on land contour, existing floodplain locations and natural drainage patterns. Hydraulic modelling using the existing catchment hydraulic models will demonstrate the effect of the flow reduction.

9.7.2.3 Stream Loss

The loss of streams to piping is considered to have a very low level of effect as outlined in section 9.6.2, however it has been identified that there are opportunities particularly with respect to the northern watercourse through the site for stream naturalisation and enhancement to improve the existing stream habitat could be retained and enhanced as part of the overall stormwater management regime for the site.

9.7.2.4 Fish Passage

As outlined earlier within this report, consideration of fish passage is an important part of culvert design and will be addressed through the resource consents that will be required from the regional council for culvert installation.

9.7.2.5 Water Quality in Receiving Systems

The quality of stormwater to be discharged from the site can be treated through practices such as the use of neutral building materials to limit contaminant generation, inclusion of low impact design techniques such as swales and raingardens, the collection and reuse of stormwater (as holding tanks also function as settlement and pre-treatment tanks), isolation of high-risk areas such as fuel storage areas and treatment of stormwater from these areas, and use of a dedicated stormwater treatment wetland. The proposed designation boundary includes provision for a treatment wetland within the detention pond area. These matters will be further considered at detailed design stage and included in an OPW.

9.7.2.6 Stream Erosion at Downstream Discharge Points

The assessment notes that stream erosion from a change in runoff hydrology is of limited concern given the highly modified nature of the streams in the area including the Mangaone Stream, however the stormwater management measures proposed will further reduce this risk.

9.7.2.7 Maintenance

The preparation of operation and maintenance plans, the training of operators and the carrying out of this maintenance in an appropriate manner at appropriate times is integral to the successful long-term performance of the stormwater management system.

9.7.3 Summary of Stormwater Management Effects

The assessment recommends that the implementation of stormwater management measures proposed are detailed in a Stormwater Management Framework which will be prepared at detailed design stage and will support the required regional council consents for stream diversions and stormwater discharge. For matters relevant to the designation, a condition is proposed requiring that a Stormwater Management Report (SMR) is to be prepared and submitted to Council. The SMR is to confirm via hydrological modelling that flood levels upstream and downstream of the site will not be increased. A condition is also proposed to require a Stormwater Management and Monitoring Plan be prepared which is to outline:

- The design measures to assist with water treatment and contaminant removal.
- The operation and maintenance of the stormwater management system that will be carried out to ensure its successful long-term performance.

With the implementation of these measures the stormwater related effects including flooding and water quality will be effectively managed.

9.8 Natural Hazard Risk

Given the presence of potential natural hazards there are potential risk effects associated with the development of the land.

9.8.1 Geotechnical Hazards

The likely geotechnical related hazards associated with the Freight Hub depend on the ground conditions in the area. This has been assessed in the Preliminary Geotechnical Assessment prepared by Stantec and (Technical Report D). The Geotechnical Assessment is a high-level assessment of the geotechnical risks for the Freight Hub and includes recommendations for risk mitigation.

As per the findings of the geotechnical assessment, the most significant (high) geotechnical risks for the Freight Hub relate to the cut to fill balance of earthworks and material suitability and availability; and the potential soft and liquefiable ground which can lead to lateral spreading and differential settlement.

Differential settlement can be an issue if a building straddles two different soil types which settle differently in a seismic event potentially affecting the structural integrity of buildings.

Other identified geotechnical risks are seismic hazards (earthquakes); stability of slopes around the perimeter of the site where gullies have been or will be infilled, where open water courses flow through the site or at the site of the detention ponds; and potential for poor subgrades under proposed new roads. These risks have been assessed as medium.

As per the assessment these risks can be mitigated through investigation and assessment of risks and appropriate design, localised ground improvement, excavation and replacement of liquefiable material if required, slope stabilisation works and pond lining where required. These risks can therefore be mitigated at the detailed design stage of the Freight Hub.

9.8.2 Flood Hazard

As noted earlier the Freight Hub is in an area identified as being Flood Prone in the District Plan. Section 22 of the District Plan outlines how activities in Flood Prone areas avoid or mitigate natural hazards such as flooding.

Parts of the Freight Hub are located on land identified as flood prone (inundated by a 0.5% AEP flood event/ "1 in 200 year" flood). Under the indicative layout of the Freight Hub the flood prone area in the northern Rural zoned part of the Freight Hub is partly occupied by the Freight Hub and partly by the new perimeter road that connects to Railway Road to the south of Maple Street. The flood prone area in the middle part of the Freight Hub that includes a small part of the NEIZ is avoided as much as possible. In relation to the District Plan's criteria it is noted that KiwiRail's ownership of the land and the management of the stormwater ponds will provide certainty that flood hazard mitigation measures will be implemented and ensure that maintenance of the site proposed will be delivered. The Freight Hub is part of the rail network and falls within the definition of critical infrastructure. The location of the NIMT means that the Freight Hub has a functional necessity to be in Flood Prone Areas. The Stormwater and Flooding assessment (Technical Report G) covers flood risk including upstream of the site and downstream of the site, and the land requirements for the mitigation of flood risk. Consideration of existing flood levels and future potential risks and their mitigation was part of the decision on the extent and location of the land required to be designated.

The proposed conditions as outlined above will ensure that the potential future risk to upstream and downstream properties is modelled to confirm flood levels will not be increased.

9.9 Archaeological and Historic Heritage Effects

The Freight Hub will involve substantial earthworks and physical change to the existing environment which has the potential to adversely affect any areas or items of archaeological or historic heritage both within the Designation Extent and adjacent to it. Archaeology effects and effects on historic heritage have been assessed in the Archaeology Report prepared by inSite Archaeology which is attached to this report as Technical Report H. As outlined in the Archaeology Report, there are no registered historic places, or recorded or known archaeological sites associated with pre-1864 Māori occupation within the designation boundary[24], however, there is the potential for effects on archaeological and historic heritage associated with early occupation of the area by Maori, the colonial settlement of the district which occurred from 1864 onwards, the nearby Glaxo building and the NIMT. A summary of the assessed archaeological potential, archaeological and heritage values and the associated potential effects is provided below.

Archaeological potential is assessed within the report as having high, medium, or low value. The report also includes 'site potential' for individual sites which uses a 5-point qualitative scale from negligible, minor, low, moderate to verified[25]. Archaeological/heritage value is assessed as being of either nil, low, medium or high value, with various values assessed to give a cumulative score between 0 and 16. Of the 16-point scale scores below 5 indicate low value sites (limited local interest) , mid-level sites score between 5 and 10 (local or regional significance), and higher scores indicate national or international significance. Potential for a sites adverse effects is scored on a 5-point scale from negligible, minor, low, moderate to verified, whilst the potential effect of the Freight Hub on any given site is scored on a similar 5-point scale from negligible, minor, low, moderate to significant adverse effect.

[24] Either within the PNDP or identified by Heritage New Zealand Pouhere Taonga

[25] Verified means a site that fulfils the statutory requirements of Heritage New Zealand Pouhere Taonga to be considered an archaeological site.

Item and Location	Archaeological/Site Potential	Archaeological/ Heritage Value	Potential Adverse Effect
Makahika and the Mangaone Steams to the west of the designation boundary	High archaeological potential along the length of the streams associated with Maori occupation, however minor archaeological potential at any one location along a given waterway. Archaeological sites associated with these streams may be located inside the designation.	Low archaeological value of any sites that may be encountered is expected, however sites of moderate or high potential may be identified through further research and consultation.	Potential effects on Mahahika are assessed as being not affected in any way (negligible). Any adverse effects on site associated with the Mangaone Stream are associated with the western periphery of the designation. Effects are assessed as being no more than minor as it is likely there will be scope to minimise or avoid affecting these sites (if found).
Unnamed streams within the designation boundary	High archaeological potential along the length of the streams associated with Maori occupation however minor archaeological potential at any one location along a given waterway.	Low archaeological value of any sites that may be encountered is expected, however sites of moderate or high value (such as sites associated with inland hunting and fishing camps or forest activity areas) may be identified through further research and consultation.	The report states that with appropriate archaeological documentation and recording the final effect should be no more than low.
Historic land parcels/sections owned by individuals or families that are known to have resided at Bunnythorpe. There are 154 individual historic parcels/sections within the designation boundary, 61 have named individual purchasers and 6 parcels/sections have no named purchaser. Of the 61, 25 parcels/sections are known to have been occupied.	74 historic sections have at least minor site potential. Negligible site potential on unoccupied sites (36 of 61 named purchasers). Low site potential on occupied sites (25 of 61 named purchasers). For one site (Bunnythorpe Suburban Section 1510) there are records (newspapers, aerial photographs) which indicate the presence of an archaeological site. The site potential for this section is assessed as being verified.	Nil – low archaeological value on unoccupied sites[26]. Low archaeological value on occupied sites.	Negligible level of adverse effect on unoccupied sites. Potential low to moderate level of effect on occupied sites. The moderate level of effect is associated with any sites located on parcels associated with long-term residents and more active community members which reflects their higher archaeological values and greater significance within the overall heritage landscape. There is a predicted significant level of effect to a single

[26] The low archaeological value concerns cultural association in recognition of the parcels being able to be traced to a named individual. There are six parcels with no named purchaser which have a value of nil.

Item and Location	Archaeological/Site Potential	Archaeological/ Heritage Value	Potential Adverse Effect
			section: Bunnythorpe Suburban Section 1510 purchased by Edwin Clevely as the Clevely's were a pioneer family of early settlement at Bunnythorpe.
Built heritage includes houses still standing, former house sites, and buildings that are standing but not intended for residential occupation. There are 9 within the designation boundary[27] and 24 outside the designation boundary.	The Rogers and Cleverly house sites have verified site potential based on research undertaken for this project. The Glaxo building has verified archaeological potential[28]. All other built heritage has moderate site potential.	The Glaxo building has significant heritage value on the 16-point scale. Other built heritage has medium archaeological/ heritage value overall on the 16-point scale.	Within the Designation Extent there is one house site which is predicted to have a significant level of effect as a result of the Freight Hub due to the extra value of its potential association with Robert Volkerk who was an early pioneer. Five built heritage sites including the Rogers[29] and Clevely house sites are predicted to have a moderate level of effect. The remaining three (house) sites within the designation are predicted to have a low level of effect which reflects their lower heritage values. This assumes all adverse effects are managed to the minimum level that is required for archaeological sites under the Heritage New Zealand Pouhere Taonga Act. Sites outside the Designation Extent are assessed as having high probably of resulting in a negligible level of effect which is associated with noise and light pollution affecting their amenity values (which in turn

[27] The assessment notes that the identified houses are unlikely to be the only residential buildings (of value) that are present.
[28] The Glaxo building has is not an archaeological site under the legal definition of Heritage New Zealand Pouhere Taonga but its heritage values are recognised through its listing as a registered Historic Place and as a Category 2 building of heritage value in the PNDP.
[29] Effects on the Rogers house would have been significant had the building not recently been damaged by fire.

Item and Location	Archaeological/Site Potential	Archaeological/ Heritage Value	Potential Adverse Effect
			can affect their heritage values).
Roads - Clevely Line, Railway Road, Richardsons Line, Roberts Line and Te Ngaio Road.	These roads have verified site potential.	Roads are of medium archaeological value overall on the 16-point scale.	Negligible level of adverse effect
NIMT	Moderate archaeological potential alongside the railway due to the presence of a minor station at Bunnythorpe and future (that were never fulfilled) for the East and West coast railway junction.	High overall value reflecting that railway sites are likely to be of interest beyond the immediate community and the site's significance to the transport history and economic development of New Zealand.	Any potential sites within the Designation Extent are likely to be destroyed by the Freight Hub, which is assessed as a significant effect, however the potential for there to be any significant sites is low. There is the potential for effects on sites to be reduced by mitigation.

As mitigation the assessment recommends an archaeological authority should be obtained for in relation to disturbance of any subsurface features (for example wells, rubbish pits) that may be associated with a house or building and for any other subsurface features. An archaeological authority would be needed for any house or building demolition. This will need to be supported by a research strategy and archaeological management plan. The assessment notes the conditions attached to an archaeological authority and the procedures outlined in the associated management plan(s) would supersede any accidental discovery protocols that may be implemented by the project. Accidental discovery protocols are not required if an archaeological authority is already in place but should be implemented for enabling works or construction activities that could affect unknown archaeological sites prior to an authority being granted.

9.9.1 Summary of Archaeological and Historic Heritage Effects

The assessment states that the archaeological potential across the extent of the 176-hectare Freight Hub is expected to remain at the lower end of the scale. Overall, based on the research undertaken and the scope for potential mitigation, the project's effects on archaeology can be appropriately avoided, remedied, or mitigated.

In consideration of the assessment, conditions are proposed to cover the following archaeological and heritage related matters:

- A requirement to obtain an archaeological authority from heritage New Zealand Pouhere Taonga prior to the commencement of earthworks (excluding enabling works), or alternatively evidence that an archaeological authority is not required for the particular works.
- An Accidental Discovery Protocol (ADP) to be applied in the event that an archaeological site is discovered or disturbed. As the conditions in an Archaeological Authority would supersede any ADP condition, the condition would only apply if there was no archaeological authority already in place.

9.10 Effects on Cultural Values

Engagement with iwi has been undertaken throughout the project to understand the effects of the Freight Hub on cultural values (refer to section 7). Engagement occurred with the following iwi groups and with wider mana whenua:

- Ngāti Kauwhata
- Rangitāne ki Manawatu
- Ngāti Raukawa

Based on the feedback received to date, potential effects on cultural values include:

- The impacts of future roading on access to the Aorangi Marae, noting that there is already roading congestion on Waughs Road and Cameron's Line.
- The importance of environmental integrity including native flora and fauna species.
- The importance of the Oroua River (which flows north- south to the west of the Freight Hub area).

As evidenced by the ITA outlined above, there are no traffic related impacts on the Marae as a result of the Freight Hub. KiwiRail acknowledge the importance of environmental integrity including ecological matters, water quality and stormwater management and propose to implement measures, developed with further involvement from iwi to mitigate adverse effects of the Freight Hub associated with these elements as outlined within the technical reports attached to this report.

KiwiRail and iwi have committed to ongoing engagement and KiwiRail will identify opportunities for iwi to participate in environmental enhancement activities and landscape restoration where these form part of the Freight Hub. A condition is proposed requiring KiwiRail to prepare an engagement Framework to recognise and provide for mana whenua values affected by the Freight Hub and to develop mechanisms to mitigate effects on mana whenua values.

9.11 Land Contamination Effects

A Preliminary Site Investigation (PSI) has been completed for the Freight Hub by Stantec (Technical Report I). The PSI assesses the potential for existing contamination at the site and the potential contamination effects that may arise because of the development of the Freight Hub. The report confirms that there are two HAIL[30] sites located in close proximity to the Freight Hub site which are the Bunnythorpe Cemetery (HAIL G1) and the Bunnythorpe wastewater treatment site (HAIL G6).

Contaminants of concern associated with the cemetery include lead, mercury, and nitrates. Contaminants of concern associated with the effluent treatment site are viruses and bacteria. The PSI states that it would be unlikely for any of these contaminants to migrate to the Freight Hub area at a concentration that would cause contamination within the Freight Hub boundary.

The report states there is likely to have been farming activities that have taken place on the site which may have caused localised site contamination including sheep dips and/or spray races (HAIL A8) which are typically impacted by contaminants such as arsenic and dieldrin, and rubbish burning pits/burn pads (HAIL G5) which may be impacted by arsenic, lead and other trace elements. Due to the discrete nature of burn pads, impacted areas are usually restricted to well defined visually blackened areas of soil.

The PSI has identified that these past activities present a potential risk to site workers during the construction phase of the Freight Hub. Contaminated dust may also land on the rooves of other properties where roof water is collected for drinking. The PSI recommends that a Detailed Site Investigation (DSI) be undertaken, and a Contaminated Site Management Plan (CSMP) be developed (if required) together with dust control measures and erosion and sediment control to manage the risk. A resource consent under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES-CS) is likely to be required.

Additionally, the future use of the site as a Freight Hub and its construction has the potential to cause contamination on the site. Activities that may cause contamination include the establishment of a Freight Hub due to diesel/oil spills (HAIL F6), the use of the site as a transport depot due to storage of hazardous goods (HAIL F8) and potentially commercial refuelling (HAIL F7).

For future contamination, the PSI states that potential contamination effects can be minimised or mitigated through appropriate design, such as the refuelling of vehicles and machinery be undertaken in purpose built refuelling stations which have paving and bunds, which can be properly detailed at OPW stage. KiwiRail will also observe its own Environmental Standards and the appropriate regulations in the detailed design of the project.

Overall, it is considered that through the preparation of DSI, CSMP (if required) and the obtaining of a resource consent under the NES-CS, together with appropriate design of the Freight Hub, the land contamination effects will be suitably managed.

9.12 Effects on Network Utilities

Some services may need to be relocated at the appropriate time with the agreement of the service provider. No adverse effects are therefore anticipated.

[30] Identified on the Hazardous Activities and Industries List, Ministry for the Environment

9.13 Air Quality Effects

KiwiRail received queries about the possibility that there would be air quality effects with the operation of the Freight Hub related to odour; dust and risks to rainwater contamination as many of the dwellings obtain their drinking water from their roof. In response to these concerns the following comments are provided.

The odour of diesel is not expected to be discernible more than 50 metres away from the source therefore it is not considered that there will be any significant odour from diesel, as the nearest residences will be over 50 metres from the Freight Hub activities.

The Freight yard will operate with both electric and diesel locomotives as the NIMT south of Palmerston North and the branch lines are not electrified. Therefore while there is risk of particulate matter discharging to air from incomplete combustion of diesel fuel; i.e. "black smoke" generated by the diesel-powered locomotives, it is expected to be very localised (to a few 10s of metres from the source at most) and brief in time terms, and will not therefore cause an issue in terms of air quality. It is noted that the tuning of diesel engines is a constant maintenance priority otherwise they work inefficiently, and it is in KiwiRail's best interests to keep the engines tuned and well maintained to keep efficiency levels high.

There is the potential that there could be an accumulation of particulates on roofs within 250 metres of the marshalling yards. To manage this a first flush diverter could be applied to any residences within 250 metres of the marshalling yards which have rainwater collection.

KiwiRail will comply with the air quality requirements of the regional council or will otherwise obtain any required resource consents.

9.14 Effects on Productive Land Supply

As noted in section 5.2.2 of this report the Designation Extent generally comprises land that has been classified as versatile land including 50 ha land already zoned for development under the NEIZ. There is a high likelihood that the fragmented ownership of the Rural zoned land has already reduced the land's productive capability due to the creation of lifestyle blocks which may make farming unprofitable, unviable, or simply not desired. This is also due to the presence of residential buildings on smaller lots brings with it the risk of reverse sensitivity effects, as some productive land uses may not be considered compatible.

The loss of productive land was canvased as part of all the planned expansion of the NEIZ and as part of the decision associated with incorporation of the former Manawatu District Council land in PNCC. The subdivision of some of the Rural land into small lifestyle blocks has already impacted on the potential of the land to be used for horticulture and pastoral farming.

Based on the work undertaken to date by PNCC, there is strong potential that the Rural zoning within the Freight Hub could be rezoned to industrial given the history of extending the NEIZ and the indications in PNCC's 10 Year plan 2018-2028[31] with the spatial plan "mapping for the future" showing the north eastern area of the city which includes the southern part of the Freight Hub as an area of "Sustainable Growth (Industrial) Regional Ring Road, Rail, Airport and multi-modal infrastructure to enable industrial growth: North Eastern Industrial Zone".

Effects on productive land supply are therefore considered to be minor.

9.15 Social Impact Effects

The social effects of the proposed Freight Hub relate to how people and communities perceive and experience the Freight Hub and its construction, and its impacts on their amenity, way of life and wellbeing. The social effects of the Freight Hub have been assessed in the Social Impact Assessment (SIA) prepared by Kirsty Austin (Technical Report J).

The SIA has assessed the Freight Hub in terms of its effects on the quality and amenity of the environment, people's way of life, the community, and income and employment. The assessment utilises two scales, the "local impact area' which is the Freight Hub site and the surrounding area extending approximately 1km from the Freight Hub site, and the "wider impact area" which covers the territorial authority jurisdictions of Palmerston North and Manawatu District. The SIA also considers the Freight Hub in terms of its construction related social effects and its operational related social effects. The effects are outlined below based on the assessment.

[31] https://www.pncc.govt.nz/media/3131028/10-year-plan-2018-28.pdf

9.15.1 Construction Phase

The construction related social effects are summarised in Table 9-4. Refer to the SIA for the full information.

Table 9-4 Social Impact Effects – Construction Phase

Impact	Area and scale of impact (without mitigation)	Recommended measures to address adverse effects
Quality and amenity of the environment		
Amenity: 1. Increased noise levels 2. Visual quality of construction site 3. Length of construction time Safety: 1. Safety matters associated with the construction site such as construction vehicles, temporary detours, and road closures	Amenity in local impact area: moderate negative Safety in local impact area: negligible	1. Mitigation identified in the Acoustic Assessment including preparation of a Construction Noise and Vibration Management Plan 2. Early mitigation screening and planting where appropriate/practical 3. Site management to minimise vandalism 4. Engagement plan to outline how information will be communicated to the community 5. Establishment of a forum for community liaison 6. Establishment of a 'hotline' for the community to report construction related and other project issues as they arise.
People's way of life		
Connectivity: 1. Route disruption and increased travel times Patterns at home and work: 1. Frustration over changed home patterns due to noise	Connectivity in local impact area: low-moderate negative Connectivity in wider impact area: low negative Patterns at home and work in local impact area: low-moderate negative Patterns at home and work in wider impact area: low negative	1. Mitigation as recommended by transport and noise specialists 2. Engagement Plan 3. Hotline 4. Complaints management register
The community		
Impact of potential property acquisition: 1. Effects on wellbeing such as anxiety and stress Impact on resources in the community:	Impact of potential property acquisition in local impact area: moderate negative Impact on resources in the community in local	1. Initiating property purchase as early as possible if that is the preference of the property owner 2. Engagement plan 3. Community liaison forum – invite staff from PNCC and Manawatu

1. Potential for housing supply issues for construction workforce	impact area: low negative Impact on resources in the community in wider impact area: low negative	District Council to discuss housing supply matters
Income and employment		
Income and employment opportunities: 1. Employment opportunities in construction Other financial implications: 1. Fear of reduced property values	Income and employment opportunities in local impact area: low positive Income and employment opportunities in wider impact area: low positive Other financial implications in local impact area: negligible	1. Early mitigation screening and planting 2. Site management to minimise vandalism

9.15.2 Operational Phase

The operational related social effects are summarised in Table 9-5.

Table 9-5 Social Impact Effects – Operational Phase

Impact	Area and scale of impact (without mitigation)	Recommended measures to address adverse effects
Quality and amenity of the environment		
Amenity 1. Increased noise levels 2. Changes to the landscape and visual character Safety: 1. Improved safety from road network improvements Property Damage 2. Concerns about flooding of property	Amenity in local impact area: high negative Safety in local impact area: low positive Safety in wider impact area: low positive Property damage in local impact area: negligible	1. Mitigation identified in the Acoustic, Landscape and Visual and Stormwater assessments 2. Clarity about night-time activities and ensuring night-time noise effects are appropriately managed 3. Early mitigation screening and planting where appropriate/practical 4. Continuation of the community liaison forum and hotline during the first year of operation to feedback monitoring data and raise operational concerns

Impact	Area and scale of impact (without mitigation)	Recommended measures to address adverse effects
People's way of life		
Patterns at home and work 1. Frustration over changed home patterns due to noise Connectivity: 2. Increased time associated with travel movements 3. Provision of shared walking/cycling pathway will improve active transport options	Patterns at home and work in local impact area: moderate-high negative Connectivity in local impact area: low negative Connectivity in wider impact area: negligible-low positive The shared cycling path is assessed as low-positive for the local impact area and wider impact area	1. Mitigation identified in the Acoustic, assessment 2. Clarity about night-time activities and ensuring night-time noise effects are appropriately managed
The community		
Impact of property acquisition: 1. Feelings of loss associated with loss of home Community character: 1. Change of community from rural-residential homeowners to industrial workforce 2. Changes to rural feel of the community Impact on resources in the community: 1. Increased housing pressure 2. Increased viability of community services (Bunnythorpe School)	Impact of potential property acquisition in local impact area: low negative Community character in the local impact area: moderate negative Impact on resources in the community in local impact area: negligible Impact on resources in the community in wider impact area: negligible	1. Invite relevant organisations (such as PNCC, Manawatu District Council, Bunnythorpe School) to participate in the community liaison forum, to assist service providers to plan for future capacity, and to provide the community with confidence this is occurring.
Income and employment		

Impact	Area and scale of impact (without mitigation)	Recommended measures to address adverse effects
Income and employment opportunities: 1. Increased local employment opportunities Other financial implications: 1. Fear of reduced property values	Income and employment opportunities in local impact area: low positive Income and employment opportunities in wider impact area: low positive Other financial implications in local impact area: negligible	1. Early mitigation screening and planting where appropriate/practical

9.15.3 Summary of Social Impact Effects

A range of social effects are anticipated which will predominantly occur within the local impact area. As summarised in the assessment, negative social effects are largely due to changes to the quality and amenity of people's environments and daily patterns of living from a noisier environment and different landscape, as well as the replacement of rural-residential homeowners with an industrial workforce. Positive effects will occur due to the employment opportunities generated during the construction and operational phases. The recommended (and proposed) mitigation primarily focusses on providing timely and appropriate information to communities, and opportunities for community feedback. This will be through the implementation of an engagement plan, establishment of a community liaison person and community liaison forum, a hotline, and a complaints management register. Specific effects on amenity and daily patterns (transport) is addressed elsewhere in this report. Concerns about property values are not a matter that is considered under the RMA.

Conditions are proposed requiring the following:

- Establishment of a dedicated project liaison person
- Preparation of an engagement plan that sets out procedures detailing how the directly affected landowners, community and stakeholders will be communicated with prior to and throughout the construction work activities
- Establishment of a community forum to aid consultation
- Maintenance of a complaints register during construction and a requirement to respond to any complaints within 10 working days

9.16 Economic Effects

In addition to the positive effects identified in section 9.1 of this report, the Economics Assessment (Technical Report K) outlines that there are several factors that have been considered in assessing the economic development impacts of the Freight Hub. These include impacts on users; impacts on those involved in freight services who may wish to relocate to the NEIZ and those already located close to the Freight Hub.

The assessment notes that there are potential adverse impacts on users of the Existing Freight Yard who may relocate to the new location to get advantages related to direct rail access and that there are potential improvements to freight services with more efficient supply chains, but there are also potential increases in travel distances and travel times for some who are currently located close to the Existing Freight Yard who do not wish to move. There is potential that use of the NEIZ land for the Freight Hub would reduce the opportunities for firms wishing to relocate to the area however it is suggested that the take-up of NEIZ land in the area has been limited to date and firms will have the ability to either locate in the NEIZ or take up opportunities within the Freight Hub itself.

Small negative effects are also identified in relation to impacts on activities currently located along Roberts Line due to increases in traffic possibly making access into the sites more difficult.

In summary the assessment notes that while the Freight Hub is likely to impact positively on the level of economic activity in Palmerston North and the surrounding area, there are challenges with quantifying the benefits. The assessment also notes that economic development depends on the actions of third parties whose response to the improved opportunities provided by the Freight Hub cannot be predicted with absolute certainty.

Overall, the assessment concludes that the Freight Hub is likely to impact positively on the level of economic activity in Palmerston North and the surrounding area. Overall, the combined rating of the economic development impacts assessed is moderate positive. The assessment also concludes that in addition to regional impacts, the Freight Hub would have a number of wider impacts (although it is not possible to attach a scale to these).

9.17 Summary of Effects

The Freight Hub will result in a number of positive effects for the region and the community, most notably the road safety and environmental benefits arising from the ability to move more freight to rail, and the employment opportunities that will be created by the Freight Hub. The design of the Freight Hub creates a number of additional benefits including noise reductions at some properties as a result of the relocation of the NIMT and the closure of Railway Road, and road safety benefits associated with the closure of level crossings on Railway Road.

There will be some construction related effects which will be temporary in nature, whilst acknowledging that the construction period will occur for some time. Management plans for construction (including dust management), construction noise and vibration and construction traffic are considered standard for large construction projects such as this and will ensure effects are appropriately managed. Visual effects of construction can be reduced through the establishment of planting, noise screening and stormwater ponds earlier in the programme, which will be implemented to the greatest extent practicable. On-going communication with residents regarding construction activities is also proposed through a community forum and construction engagement plan

The effects on the transportation network for the most part will not adversely affect the network beyond what would already be expected without the Freight Hub. There will be some additional travel time for some residents, commuters, and others. Overall, the adverse effects on the transport network are assessed as minor.

Noise mitigation will be provided through extensive noise screening walls and bunds which will be placed around the perimeter of the site and noise will be further controlled through a Noise Management Plan for operational noise. Noise and vibration effects, including those arising from road traffic have been assessed as minor and/or likely to be at reasonable levels. Extensive planting is proposed as the principal mitigation for visual and landscape effects resulting from noise mitigation walls and the Freight Hub itself, as demonstrated in the concept Landscape Plan, and opportunities will be sought in subsequent stages for further landscape enhancement.

The location has not been assessed as having high ecological value or being particularly ecologically sensitive and ecological effects of the proposal have been assessed as low at worst. Effects resulting from the stormwater generation of the Freight Hub and flooding related effects will be effectively managed through the stormwater detention ponds proposed, and appropriate sizing of culverts. The regional council consenting process will also be relevant to ecological and stormwater related effects through the consents that will be required for stream works including stream diversions and culverts and stormwater discharge. In terms of other natural hazards, geotechnical risks that have been identified largely relate to the Freight Hub itself, however additional geotechnical risks will be mitigated through the detailed design of the Freight Hub.

There are no recorded archaeological or heritage sites within the Designation Extent and archaeological effects have been assessed as being at the lower end of the scale. Archaeological authorities will be obtained from Heritage New Zealand Pouhere Taonga, as necessary. In terms of pre-European archaeological sites and other sites of cultural value, it is acknowledged only Maori can advise on these and for this reason KiwiRail are committed to ongoing engagement with iwi. KiwiRail is also committed to seeking opportunities for iwi participation in the project which can be developed through the proposed mana whenua Engagement Framework.

There will be some adverse social effects resulting from the proposal because of the general changes to the environment, community and people's existing patterns of life which are acknowledged. It must be

kept in mind that one third of the site is zoned for industrial activity therefore change to the existing environment in this locality is already anticipated through the provisions of the PNDP.

Land contamination effects and effects on air quality will be managed through other processes being the NES-CS and the regional plan. Effects on productive land supply are assessed as being insignificant and effects on network utilities will be managed in consultation with the relevant network utility providers.

The adverse effects of the Freight Hub will be extensively mitigated thorough the Freight Hub design as will be further detailed at the OPW stage of the project, and any residual adverse effects in terms of the change in landscape, visual amenity and social effects of the Freight Hub must be considered against the positive effects of the Freight Hub. On balance the adverse effects are acceptable in this environment.

10. Relevant Planning Framework

10.1.1 National Policy Statement on Electricity Transmission 2008 (NPSET)

The National Policy Statement on Electricity Transmission (NPSET) sets out the objective and policies to enable the management of the effects of the electricity transmission network under the RMA. It seeks to recognise the national significance of the electricity transmission network especially in relation to activities that may affect the network.

The NPSET is relevant as there is a Transmission Line running across the northern end of the Freight Hub. There are several Transmission Lines radiating out from Bunnythorpe. The Bunnythorpe substation is located to the north of the NIMT. The location of the Transmission Line and the presence of a pylon while located inside the Designation Extent but outside the main operational are of the Freight Hub means that there is unlikely to be any effect from the Freight Hub on Electricity Transmission.

10.1.2 National Policy Statement for Freshwater Management 2020

The National Policy Statement for Freshwater Management 2020 (NPSFM 2020) took effect on 3 September 2020 and replaces the National Policy Statement for Freshwater Management 2014.

The matters for which the NPSFM 2020 apply are most relevant to the future regional consents that will be needed for the works in streams and the discharge of stormwater from the site. In particular the NPSFM 2020 requires that regional councils notify, using the new freshwater planning process set out in NPSFM 2020 , new freshwater plans / plan changes no later than 31 December 2024 that "give effect" to the NPSFM 2020 which has one objective:

(1) The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:

> *(a) first, the health and well-being of water bodies and freshwater ecosystems*
>
> *(b) second, the health needs of people (such as drinking water)*
>
> *(c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.*

The future assessment will also need to be against the relevant objective and policies. The assessment needs to include:

- Assessment of how the application prioritises the "health and well-being of waterbodies and freshwater ecosystems" and then the rest of the hierarchy of obligations (Objective), and explain how it "gives to Te Mana o te Wai (Policy 1)

While there is a loss of stream bed the existing ecological values are considered to be negligible to low and aquatic habitat loss is not considered to warrant avoidance.

At the time that the regional consents are lodged the regional council may have completed analysis of its current planning framework and developed new provisions for notification before 2024.

There are three unnamed stream systems that flow through the proposed Freight Hub site typically flowing in an east-west direction before draining into the Mangaone Stream. As set out in Section 5 there are many bores around the Freight Hub and PNCC has a consent to take water for the municipal supply from a bore at the Roberts Line/Railway Road intersection.

The assessment of the health and well-being of the streams is that the effect of the stream bed loss because of culverting /piping the streams will, due to the magnitude of the stream system be low. The impact of the culverting on fish passage appears at this time to be at worst low as fish passage is intended

to be provided for. More significantly the installation of suitable treatment of stormwater runoff from the site, means that the potential effects from contaminated stormwater are likely to be very low, and may even be positive.

10.1.3 New Zealand Coastal Policy Statement 2010 (NZCPS)

The Purpose of the New Zealand Coastal Policy Statement is to state policies to achieve the purpose of the RMA in relation to the coastal environment. The Freight Hub is remote from the coastal environment; however, Foxton Beach is around 40km downstream and NZCPS is relevant due to the potential for sediment from the earthworks and other contaminants from the operation of the Freight Hub being carried into the coastal environment (via the Mangaone Stream and the Manawatū River). The regional consents will result in the introduction of erosion and sediment control measures in relation to earthworks and requirements to treat stormwater before it is discharged to ensure that the Freight Hub will be consistent with the NZCPS.

10.1.4 National Policy Statement on Urban Development 2020(NPS-UD)

The NPS -UD sets out the objectives and policies for planning for well-functioning urban environments under the Resource Management Act 1991. It applies to all local authorities that have all or part of an urban environment within their district or region and to any planning decisions by any local authority that affect an urban environment. Planning decisions as defined in the NPS-UD include decisions on designations.

The New Zealand rail network (including light rail) is defined as Nationally Significant Infrastructure in the NPS and any matter required for the purpose of ensuring the safe or efficient operation of nationally significant infrastructure is identified as being a qualifying matter. Territorial Authorities can if they consider it is necessary, can modify the building height or densities in their district plans to provide for a qualifying matter.

10.1.5 Horizons Regional Policy Statement

The Horizons Regional Policy Statement (HRPS) is contained within the Horizons One Plan and sets out the regionally significant resource management issues and the objectives, policies and methods that will be used to address these issues. The four key resource management issues for the Manawatū-Whanganui Region as set out in the One Plan are surface water quality degradation, increasing water demand, unsustainable hill country land use and threatened indigenous biological diversity.

The relevant objectives and policies of the HRPS are set out in Table 10-1below.

Table 10-1 HRPS Objectives and Policies Assessment

Objective	Policies
Objective 2-1: Resource management 1. To have regard to the mauri* of natural and physical resources^ to enable hapū* and iwi* to provide for their social, economic, and cultural wellbeing. 2. Kaitiakitanga^ must be given particular regard and the relationship of hapū* and iwi* with their ancestral lands^, water^, sites*, wāhi tapu* and other taonga* (including wāhi tūpuna*) must be recognised and provided for through resource management processes.	**Policy 2-2: Wāhi tapu*, wāhi tūpuna* and other sites* of significance** (a) Wāhi tapu*, wāhi tūpuna* and other sites* of significance to Māori identified: (i) In the Regional Coastal Plan and district plans^, (ii) as historic reserves under the Reserves Act 1977, (iii) as Māori reserves under the Te Ture Whenua Māori Act 1993, (iv) as sites recorded in the New Zealand Archaeological Association's Site Recording Scheme, and (v) as registered sites under the Historic Places Act 1993 must be protected from inappropriate subdivision, use or development that would cause adverse effects^ on the qualities and features which contribute to the values of these sites*.... (d) The Regional Council must ensure that resource users and contractors have clear procedures in

Objective	Policies
	the event wāhi tapu* or wāhi tūpuna* are discovered.
	Policy 2-4: Other resource management issues The specific issues listed in 2.2 which were raised by hapū* and iwi* must be addressed ....
Comment: iwi have been consulted through the site selection process so that regard could be given to sites and other features that might be identified as being significant or necessary to enable hapū* and iwi* to provide for their social, economic and cultural wellbeing. It is also noted that there will be ongoing engagement by KiwiRail to further understand features or resource management issues that might be significant to iwi. It is also noted that appropriate accidental discovery protocols will be in place during land disturbance activities.	
Objective 3-1: Infrastructure^ and other physical resources of regional or national importance Have regard to the benefits of infrastructure^ and other physical resources of regional or national importance by recognising and providing for their establishment, operation*, maintenance* and upgrading*.	**Policy 3-1: Benefits of infrastructure^ and other physical resources of regional or national importance** 1. The Regional Council and Territorial Authorities^ must recognise the following infrastructure^ as being physical resources of regional or national importance: ...(iv) the road^ and rail networks as mapped in the Regional Land Transport Strategy... (c) The Regional Council and Territorial Authorities^ must, in relation to the establishment, operation*, maintenance*, or upgrading* of infrastructure^ and other physical resources of regional or national importance, listed in (a) and (b), have regard to the benefits derived from those activities.
Comment: The Regional Land Transport Strategy that was in place with the HRPS was developed has been replaced by the Regional Land Transport Plan. The RLTP does not map road and rail networks but does note that *the Horizons Region has long advocated for better utilisation of existing rail infrastructure for the movement of freight to and from the region.... The North Island Main Trunk line features prominently within our region with the central North Island north-south/east-west junction located in Marton. Over time the utilisation of this asset has declined, however, given the region's economic growth aspirations, in particular under the Accelerate25 banner, the resurgence of this transport mode is seen as vital to the success of Accessing Central New Zealand, and is therefore very much supported*	
Objective 3-3: The strategic integration of infrastructure^ with land^ use Urban development occurs in a strategically planned manner which allows for the adequate and timely supply of land^ and associated infrastructure^, ... (h) ensuring effective integration of transport and land^ use planning and protecting the function of the strategic road^ and rail network as mapped in the Regional Land Transport Strategy.	**Policy 3-2: Adverse effects^ of other activities on infrastructure^ and other physical resources of regional or national importance** The Regional Council and Territorial Authorities^ must ensure that adverse effects^ on infrastructure^ and other physical resources of regional or national importance from other activities are avoided as far as reasonably practicable, including by using the following mechanisms: (a)ensuring that current infrastructure^, infrastructure^ corridors and other physical

Objective	Policies
	resources of regional or national importance, are identified and had regard to in all resource management decision-making, and any development that would adversely affect the operation*, maintenance* or upgrading* of those activities is avoided as far as reasonably practicable,... (f) ensuring safe separation distances are maintained when establishing rules^ and considering applications for buildings, ... structures^ and other activities near transmission gas pipelines e.g., giving effect to the Operating Code Standard for Pipelines – Gas and Liquid Petroleum (NZS/AS 2885) and the Gas Distribution Networks (NZS 5258:2003), the latter promulgated under the Gas Act 1992,
	Policy 3-3: Adverse effects^ of infrastructure^ and other physical resources of regional or national importance on the environment In managing any adverse environmental effects^ arising from the establishment, operation*, maintenance* and upgrading* of infrastructure^ or other physical resources of regional or national importance, the Regional Council and Territorial Authorities^ must: (a) recognise and provide for the operation*, maintenance* and upgrading* of all such activities once they have been established, (b) allow minor adverse effects^ arising from the establishment of new infrastructure^ and physical resources of regional or national importance, and (c) avoid, remedy or mitigate more than minor adverse effects^ arising from the establishment of new infrastructure^ and other physical resources of regional or national importance, taking into account: (i) the need for the infrastructure^ or other physical resources of regional or national importance, (ii) any functional, operational or technical constraints that require infrastructure^ or other physical resources of regional or national importance to be located or designed in the manner proposed, (iii) whether there are any reasonably practicable alternative locations or designs, and (iv) whether any more than minor adverse effects^ that cannot be adequately avoided, remedied or mitigated by services or works can be appropriately offset, including through the use of financial contributions.
Comment: The designation will ensure that the Freight Hub which is critical infrastructure as defined in the One Plan and the PNDP will be able to establish adjacent to the NIMT corridor. There is a gas	

Objective	Policies
transmission line bisecting the Freight Hub and KiwiRail has engaged with the operator First Gas who has indicated that realignment is acceptable. Transpower also has a transmission line running through the northern end of the Freight Hub. This is elevated and there are no works proposed close to pylons. KiwiRail will however keep Transpower informed. PNCC has infrastructure assets directly and indirectly affected by the Freight Hub. The Council's water bore at the north western corner of Railway Road and Roberts Line has been excluded from the Designation Extent however the Freight Hub overlays sections of the designated road network (both formed and unformed) and council's wastewater main in Railway Road . KiwiRail is committed to working with PNCC to ensure at any effects on council assets are addressed appropriately given that PNCC has the primary designation.	
Objective 3-4: Urban growth and rural residential subdivision on versatile soils To ensure that territorial authorities consider the benefits of retaining Class I and II versatile soils for use as production land^ when providing for urban growth and rural residential subdivision	**Policy 3-5: Urban growth and rural residential subdivision on versatile soils** In providing for urban growth (including implementing Policy 3-4), and controlling rural residential subdivision ("lifestyle blocks"), Territorial Authorities^ must pay particular attention to the benefits of the retention of Class I and II versatile soils for use as production land^ in their assessment of how best to achieve sustainable management.
Comment: The Freight Hub extent comprises areas classified as Class 2, 3 and 6 land. While the Objective and policy focus on retaining Class 1 and 2 land for use as production land when considering urban expansion, it is noted that over 1/3 of the site is already in the NEIZ. This is an active urban zone. It is also noted that while the remainder of the Freight Hub area is zoned Rural, much of this land has been subdivided into small 'lifestyle' properties which potentially reduces their productive benefits. The area the Freight Hub is in has been the focus of industrial growth (and rezoning) including a boundary extension in 2012 with land from ManawatŪ District Council being included in the PNCC boundary.	
Objective 4-2: Regulating potential causes of accelerated erosion* Land^ is used in a manner that ensures: (a) accelerated erosion* and increased sedimentation in water bodies^ (with resultant adverse effects^ on people, buildings and infrastructure^) caused by vegetation clearance*, land disturbance*, forestry*, or cultivation* are avoided as far as reasonably practicable, or otherwise remedied or mitigated, and (b) sediment loads entering water bodies^ as a result of accelerated erosion are reduced to the extent required to be consistent with the water^ management objectives and policies for water^ quality set out in Chapter 5 of this Plan.	**Policy 4-2: Regulation of land^ use activities** (a) In order to achieve Objective 4-2 the Regional Council must regulate vegetation clearance*, land disturbance*, forestry* and cultivation* through rules^ in this Plan and decisions on resource consents^, so as to minimise the risk of accelerated erosion, minimise discharges of sediment to water, and maintain the benefits of riparian vegetation for water bodies^. (b) Territorial Authorities^ may regulate, through rules^ in district plans^ and decisions on resource consents^, the actual or potential effects^ of the use, development, or protection of land^, in order to achieve Objective 4-2. However, Territorial Authorities^ must not have rules^ that are contradictory to the rules^ in this Plan that control the use of land^. (c) The Regional Council will generally allow small scale vegetation clearance*, land disturbance*, forestry* and cultivation* to be undertaken without the need for a resource consent^ if conditions^ are met. Vegetation clearance* and land disturbance* require a resource consent^ if they are undertaken adjacent to some water bodies^ (including certain wetlands^) in Hill Country Erosion Management Areas* or in coastal foredune* areas. Any other large scale land disturbance* will also require a resource consent^.

Objective	Policies
Comment: Vegetation clearance and land disturbance will be managed in a way that ensures that accelerated erosion* and increased sedimentation in water bodies and sediment loading is avoided. It is noted that bulk earthworks will require resource consent from HRC and that an Erosion and Sediment Control Plan (ESCP) will be prepared.	
Objective 5-1: Water^ management Values Surface water bodies^ and their beds^ are managed in a manner which safe guards their life supporting capacity and recognises and provides for the Values in Schedule B 1.	**Policy 5-1: Water Management Zones* and Values** For the purposes of managing water^ quality, water^ quantity, and activities in the beds^ of rivers^ and lakes^, the catchments in the Region have been divided into Water Management Zones* and Water Management Sub-zones* in Schedule A.2 Groundwater has been divided into Groundwater Management Zones* in Schedule D[3]. The rivers^ and lakes^ and their beds^ must be managed in a manner which safeguards their life supporting capacity and recognises and provides for the Schedule B Values when decisions are made on avoiding, remedying or mitigating the adverse effects^ of activities or in relation to any other function under the Resource Management Act 1991 exercised by the Regional Council or Territorial Authorities. The individual Values and their associated management objectives are set out in the Schedule B Surface Water^ Management Values Key and repeated in Table 5.2.
Comment: The ecological value of the stream systems is assessed as being low currently and that with the installation of suitable treatment of stormwater runoff from the site, the potential effects from stormwater are likely to be very low and may even be positive.	
Objective 5-2: Water^ quality a) Surface water^ quality is managed to ensure that: (i) water^ quality is maintained in those rivers^ and lakes^ where the existing water^ quality is at a level sufficient to support the Values in Schedule B (ii) water^ quality is enhanced in those rivers^ and lakes^ where the existing water^ quality is not at a level sufficient to support the Values in Schedule B (iii) accelerated eutrophication and sedimentation of lakes^ in the Region is prevented or minimised (iv) the special values of rivers^ protected by water conservation orders^ are maintained. (b) Groundwater quality is managed to ensure that existing groundwater quality is maintained or where it is degraded/over allocated as a result of human activity, groundwater quality is enhanced.	**Policy 5-2: Water quality targets*** In Schedule E 4, water quality targets* relating to the Schedule B Values (repeated in Table 5.2) are identified for each Water Management Sub-Zone*. Other than where they are incorporated into permitted activity^ rules as conditions^ to be met, the water quality targets* in Schedule E must be used to inform the management of surface water^ quality in the manner set out in Policies 5-3, 5-4 and 5-5.
Comment: The installation of suitable treatment of stormwater runoff from the site in providing for stormwater detention and treatment via wetland systems on the downstream boundary of the Freight Hub as well as the provision of a detention system within the operational site area at the southern end of	

Objective	Policies
the site means that the potential effects from stormwater are likely to be very low and may even be positive.	
Objective 5-4: Beds^ of rivers^ and lakes^ The beds^ of rivers^ and lakes^ will be managed in a manner which: (a) sustains their life supporting capacity (b) provides for the instream morphological components of natural character (c) recognises and provides for the Schedule B Values (d) provides for infrastructure^ and flood mitigation purposes. The land^ adjacent to the bed^ of reaches with a Schedule B Value of Flood Control and Drainage will be managed in a manner which provides for flood mitigation purposes.	**Policy 5-3: Ongoing compliance where water quality targets* are met** (a) Where the existing water^ quality meets the relevant Schedule E water quality targets* within a Water Management Sub-zone*, water^ quality must be managed in a manner which ensures that the water quality targets* continue to be met beyond the zone of reasonable mixing (where mixing is applicable). (b) For the avoidance of doubt: (i) in circumstances where the existing water^ quality of a Water Management Sub-zone* meets all of the water quality targets* for the Sub-zone* (a) applies to every water quality target* for the Sub-zone* (ii) in circumstances where the existing water^ quality of a Water Management Sub-zone* meets some of the water quality targets* for the Sub-zone* (a) applies only to those water quality targets* that are met (iii) for the purpose of (a) reasonable mixing is only applicable to a discharge^ from an identifiable location.
	Policy 5-5: Management of water^ quality in areas where existing water^ quality is unknown 1. Where there is insufficient data to enable a comparison of the existing water^ quality with the relevant Schedule E water quality targets*, water^ quality within the Water Management Sub-Zone^ must be managed in a manner which, beyond the zone of reasonable mixing (where reasonable mixing is applicable): 1. maintains or enhances the existing water^ quality 2. has regard to the likely effect of the activity on the relevant Schedule B Values that the water quality target* is designed to safeguard 3. has regard to relevant information about the existing water^ quality in upstream or downstream Water Management Subzones*, where such information exists. 2. For the avoidance of doubt: 1. in circumstances where there is insufficient data to enable a comparison of the existing water^ quality with all of the water quality targets* for a Water Management

Objective	Policies
	Sub-zone* (a) applies to every water quality target* for the Sub-zone* 2. in circumstances where there is insufficient data to enable a comparison of the existing water^ quality with some of the water quality targets* for a Water Management Sub-zone* (a) applies only to those water quality targets* with insufficient data for the purpose of (a) reasonable mixing is only applicable to a discharge^ from an identifiable location.
	Policy 5-6: Maintenance of groundwater quality (a) Discharges^ and land^ use activities must be managed in a manner which maintains the existing groundwater quality, or where groundwater quality is degraded/over allocated as a result of human activity, it is enhanced. (b) An exception may be made under (a) where a discharge^ onto or into land^ better meets the purpose of the RMA than a discharge^ to water^, provided that the best practicable option^ is adopted for the treatment and discharge^ system. l Groundwater takes in the vicinity of the coast must be managed in a manner which avoids saltwater intrusion.
	Policy 5-7: Land^ use activities affecting groundwater and surface water^ quality The management of land^ use activities affecting groundwater and surface water^ must give effect to the strategy for surface water^ quality set out in Policies 5-2, 5-3, 5-4 and 5-5, and the strategy for groundwater quality in Policy 5-6, by managing diffuse discharges^ of contaminants in the following manner: (a) identifying in the regional plan targeted Water Management Sub-zones*. Targeted Water Management Sub-zones* are those subzones where, collectively, land^ use activities are significant contributors to elevated contaminant levels in groundwater or surface water^ (b) identifying in the regional plan intensive farming land^ use activities. Intensive farming land^ use activities are rural land^ use activities that (either individually or collectively) make a significant contribution to elevated contaminant levels in the targeted Water Management Subzones* identified in (a) above l actively managing the intensive farming land^ use activities identified in (b) including through regulation in the regional plan, in the manner specified in Policy 5-8

Objective	Policies
	(d) the Regional Council must continue to monitor ground and surface water^ quality in Water Management Sub-zones* not identified in (a) and rural land^ uses not identified in (b). Where monitoring shows the thresholds in (a) and (b) are met then the regional plan must be amended so that those further Water Management Sub-zones* and rural land^ uses are included in the management regime set out in (c).
	Policy 5-9: Point source discharges^ to water^ The management of point source discharges^ into surface water^ must have regard to the strategies for surface water^ quality management set out in Policies 5-3, 5-4 and 5-5, while having regard to: (a) the degree to which the activity will adversely affect the Schedule B Values for the relevant Water Management Sub-zone* (b) whether the discharge^, in combination with other discharges^, including non-point source discharges^ will cause the Schedule E water quality targets* to be breached l the extent to which the activity is consistent with contaminant^ treatment and discharge^ best management practices (d) the need to allow reasonable time to achieve any required improvements to the quality of the discharge^ l whether the discharge^ is of a temporary nature or is associated with necessary maintenance^ or upgrade* work and the discharge^ cannot practicably be avoided (f) whether adverse effects^ resulting from the discharge^ can be offset by way of a financial contribution set in accordance with Chapter 19 (g) whether it is appropriate to adopt the best practicable option^.
	Policy 5-10: Point source discharges^ to land^ Discharges^ of contaminants^ onto or into land^ must be managed in a manner which: (a) does not result in pathogens or other toxic substances accumulating in soil or pasture to levels that would render the soil unsafe for agricultural, domestic or recreational use (b) has regard to the strategies for surface water^ quality management set out in Policies 5-3, 5-4 and 5-5, and the strategy for groundwater management set out in Policy 5-6 (c)maximises the reuse of nutrients and water^ contained in the discharge^ to the extent reasonably practicable

Objective	Policies
	(d) results in any discharge^ of liquid to land^ generally not exceeding the available water^ storage capacity of the soil (deferred irrigation) (e) ensures that adverse effects^ on rare habitats*, threatened habitats* and at-risk habitats* are avoided, remedied or mitigated.
	Policy 5-22: General management of the beds^ of rivers^ and lakes^ Activities in, on, under or over the beds^ of rivers^ and lakes^ must generally be managed in a manner which: (a) recognises and provides for the Schedule B Values for the Water Management Sub-zone(s)* in which the activity takes place, in the manner described in Policies 5-23, 5-24 and 5-25 (b) avoids any significant reduction in the ability of a river^ and its bed^ to convey flood flows, or significant impedance to the passage of floating debris (c) avoids, remedies or mitigates any significant adverse effects^ on the stability and function of the beds^ of rivers^ and lakes^, and existing structures^ including flood and erosion control structures^ (d) avoids, remedies or mitigates any significant reduction in the habitat diversity, including the morphological diversity, of the river^ or lake^ or its bed^ (e) manages effects^ on natural character and public access in accordance with the relevant policies in Chapter 6. Natural character can include the natural style and dynamic processes of the river^, such as bed^ style and width and the quality and quantity of bed^ habitat (f) provides for the safe passage of fish both upstream and downstream (g) ensures that the existing nature and extent of navigation of the river^ or lake^ are not obstructed (h) ensures that access required for the operation*, maintenance*, and upgrade* of infrastructure^ and other physical resources of regional or national importance is not obstructed (i) provides for continued public access in accordance with Policy 6-10.
	Policy 5-24: Activities in rivers^ or lakes^ and their beds^ with a Value of Flood Control and Drainage In reaches of rivers^ or lakes^ and their beds^ with a Schedule B Value of Flood Control and Drainage, activities in, on, under or over the beds^

Objective	Policies
	of rivers^ and lakes^ and on land^ adjacent to the bed^ where the Value is located must be managed in a manner which: (a) enables the degree of flood hazard and erosion protection existing at the time of Plan notification (31 May 2007) to be maintained or enhanced (b) addresses adverse effects by: (i) in the first instance, avoiding, remedying or mitigating adverse effects^ on the instream morphological components of natural character and other Schedule B Values (ii) providing consent applicants with the option of making an offset (iii) allowing compensation by way of a financial contribution in accordance with the policies in Chapter 19
	Policy 5-26: Essential and beneficial activities Activities in, on, under or over the beds^ of rivers^ and lakes^ that are essential or result in an environmental benefit must generally be allowed, including: ..... (d) the restoration or enhancement of natural habitats
Comment There are three unnamed stream systems that flow through the Freight Hub area to the Mangaone Stream. The assessment of the health and well-being of the streams is that the effect of the stream bed loss will be low. The impact of the culverting on fish passage appears at this time to be at worst low. The installation of suitable treatment of stormwater runoff from the site, means that the potential effects from stormwater may even be positive. The existing groundwater quality will not be affected and, even though the PNCC bore is so close its depth means that the quality of the water should not be affected. The flood hazard and erosion protection currently existing is not anticipated to be worsened as the proposed culverts receiving water from upstream can be upgraded through detailed modelling and detailed design from what is currently in place thus anticipating and addressing a potential future risk to upstream properties. In addition, provision is made for sufficient storage volume to manage the stormwater from the Freight Hub and potential flood risk downstream.	
Objective 6-1: Indigenous biological diversity^ Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna and maintain indigenous biological diversity^, including enhancement where appropriate.	**Policy 6-2: Regulation of activities affecting indigenous biological diversity^** For the purpose of managing indigenous biological diversity^ in the Region: (a)Habitats determined to be rare habitats* and threatened habitats* under Schedule F must be recognised as areas of significant indigenous vegetation or significant habitats of indigenous fauna. (b)At-risk habitats* that are assessed to be significant under Policy 13-5 must be recognised as

Objective	Policies
	significant indigenous vegetation or significant habitats of indigenous fauna (c)The Regional Council must protect rare habitats*, threatened habitats* and at-risk habitats* identified in (a) and (b), and maintain and enhance other at-risk habitats* by regulating activities through its regional plan and through decisions on resource consents^. (d)Potential adverse effects^ on any rare habitat*, threatened habitat* or at risk habitat* located within or adjacent to an area of forestry* must be minimised. When regulating the activities described in (c) and (d), the Regional Council must, and when exercising functions and powers described in Policy 6-1, Territorial Authorities^ must: 1. allow activities undertaken for the purpose of pest plant and pest animal control or habitat maintenance or enhancement, 2. consider indigenous biological diversity^ offsets in appropriate circumstances as defined in Policy 13-4, 3. allow the maintenance*, operation* and upgrade* of existing structures^, including infrastructure^ and other physical resources of regional or national importance as identified in Policy 3-1, and 4. not unreasonably restrict the existing use of production land^ where the effects of such land^ use on rare habitat*, threatened habitat* or at-risk habitat* remain the same or similar in character, intensity and scale.
Comment: The Freight Hub areas is already highly modified and is dominated by pasture and pockets of exotic vegetation. Very little indigenous biodiversity has been observed. Rare habitats*, threatened habitats* and at-risk habitats* have not been identified as being affected. As shown in the Landscape Plan contained in Appendix C to this document the proposal will result in planting that will significantly increase indigenous biodiversity.	
Objective 6-2: Outstanding natural features and landscapes, and natural character (a)The characteristics and values of: (i) the Region's outstanding natural features and landscapes, including those identified in Schedule G, and (ii) the natural character of the coastal environment, wetlands^, rivers^ and lakes^ and their margins are protected from inappropriate subdivision, use and development. (b) Adverse effects^, including cumulative adverse effects^, on the natural character of the	**Policy 6-8: Natural character** (a) The natural character of the coastal environment, wetlands^, rivers^ and lakes^ and their margins must be preserved and these areas must be protected from inappropriate subdivision, use and development. (b) The natural character of these areas must be restored and rehabilitated where this is appropriate and practicable. (c) Natural character of these areas may include such attributes and characteristics as: 1. Natural elements, processes and patterns,

Objective	Policies
coastal environment, wetlands^, rivers^ and lakes^ and their margins, are: (i) avoided in areas with outstanding natural character, and (ii) avoided where they would significantly diminish the attributes and qualities of areas that have high natural character, and (iii) avoided, remedied or mitigated in other areas. (c) Promote the rehabilitation or restoration of the natural character of the coastal environment, wetlands^, rivers^ and lakes^ and their margins.	2. Biophysical, ecological, geological, geomorphological and morphological aspects, 3. Natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks, 4. The natural movement of water and sediment including hydrological and fluvial processes, 5. The natural darkness of the night sky, 6. Places or areas that are wild and scenic, 7. A range of natural character from pristine to modified, and Experiential attributes, including the sounds and smell of the sea; and their content or setting.
	Policy 6-9: Managing natural character In relation to the natural character of: (a) the component of the coastal environment which is not coastal marine area^ (CMA), and (b) wetlands^, rivers^ and lakes^ and their margins subdivision, use or development must generally (but without limitation) be considered appropriate if it: (c) is compatible with the existing level of modification to the environment, (d) has a functional necessity to be located in or near the component of the coastal environment which is not coastal marine area^ (CMA), wetland^, river^ or lake^ and no reasonably practicable alternative locations exist, (c) is of an appropriate form, scale and design to be compatible with the existing landforms, geological features and vegetation, (f) will not, by itself or in combination with effects^ of other activities, significantly disrupt natural processes or existing ecosystems, and (g) will provide for the restoration and rehabilitation of natural character where that is appropriate and practicable.
	Policy 6-10: Public access to and along rivers^ and lakes^ and their margins (a) Activities within or near rivers^ and lakes^ must be established and operated in a manner which readily provides for public access. Public access may be restricted only where necessary for safety, cultural or conservation purposes, or to ensure a

Objective	Policies
	level of security appropriate for activities authorised by a resource consent^. (b) Public access for recreational purposes must recognise the need to protect rare habitats*, threatened habitats* and at-risk habitats*. (c) Public access must recognise existing private property* rights.
Comment: The Freight Hub area is highly modified and there are no outstanding natural features and landscapes, and low natural character other than natural darkness. The use of the land will mean that it will in the future be anticipated to operate 24/7 and that roads around it may also be lit. This would result in a glow being seen by those living close to the Freight Hub and those moving around it. Some of this effect is already anticipated by the lighting levels and changes enabled under the NEIZ. Public access along water courses in the Freight Hub area is currently restricted as the land is in private ownership. KiwiRail's operational requirements will mean that there will be restrictions on access due to safety however where possible public access to the margins of stormwater ponds will be provided.	
Objective 6-3: Historic heritage^ Protect historic heritage^ from activities that would significantly reduce heritage qualities	
Comment: While there are no recorded or known archaeological sites located within the Freight Hub boundary, KiwiRail has undertaken an extensive desktop study and will apply for any required authorities under the Heritage New Zealand Pouhere Taonga Act 2014 to undertake the works.	
Objective 7-1: Ambient air* quality A standard of ambient air* quality is maintained which is not detrimental to amenity values^, human health, property or the life-supporting capacity of air and meets the national ambient air* quality standards.	**Policy 7-1: National Environmental Standards^** The National Environmental Standards^ set out in Table 7.1 must be adopted as ambient air* quality standards for the Region and ambient air* quality must be: (a) maintained or enhanced in those areas which meet the standards, and (b) enhanced in those airsheds which do not meet the standards in accordance with the air quality categories and designated responses in Table 7.2.
	Policy 7-2: Regional standards for ambient air* quality In addition to the National Environmental Standards^ set out in Policy 7-1, ambient air* quality must be managed in accordance with the regional standards set out in Table 7.3
	Policy 7-4: Incompatible land^ uses Air quality problems arising from incompatible land^ uses establishing near each other must be avoided, remedied or mitigated primarily through district plans^ and Territorial Authority^ consent decisions which: (a) prevent the future establishment of potentially incompatible land^ use activities near each other, or

<table>
<tr><th>Objective</th><th>Policies</th></tr>
<tr><td></td><td>(b) allow the establishment of potentially incompatible land^ use activities near each other provided no existing lawful activity, operated in a manner that adopts the best practicable option^ or which is otherwise environmentally sound, is restricted or compromised.</td></tr>
<tr><td colspan="2">Comment: The earthworks phase will result in the potential for dust to be generated and it is expected that the regional consent for earthworks will address the dust management controls required. It is also noted that during consultation KiwiRail was informed that dwellings around the Freight Hub rely on rainwater for water supply purposes. While there is a risk that particulate matter from incomplete combustion of diesel fuel, it is expected to be very localized and brief in time terms and will not cause an issue. In certain conditions it is possible that there could be an accumulation of particulates on roofs within 250m of the marshalling yards. This situation could be avoided through measures undertaken by KiwiRail to ensure its locomotives are well maintained. KiwiRail will comply with the air quality requirements of the regional council or will otherwise obtain any required resource consents.</td></tr>
<tr><td>Objective 9-1: Effects^ of natural hazard^ events

The adverse effects^ of natural hazard^ events on people, property, infrastructure^ and the wellbeing of communities are avoided or mitigated.</td><td>Policy 9-2: Development in areas prone to flooding

1. The Regional Council and Territorial Authorities^ must not allow the establishment of any new structure^ or activity, or any increase in the scale of any existing structure^ or activity, within a floodway* mapped in Schedule J unless:
a) there is a functional necessity to locate the structure^ or activity within such an area, and
b) the structure^ or activity is designed so that the adverse effects^ of a 0.5% annual exceedance probability (AEP) (1 in 200 year) flood event2 on it are avoided or mitigated, and
c) the structure^ or activity is designed so that adverse effects^ on the environment^, including the functioning of the floodway, arising from the structure^ or activity during a flood event 2 are avoided or mitigated, in which case the structure^ or activity may be allowed.
2. Outside of a floodway* mapped in Schedule J the Regional Council and Territorial Authorities^ must not allow the establishment of any new structure^ or activity, or an increase in the scale of any existing structure^ or activity, within an area which would be inundated in a 0.5% AEP (1 in 200 year) flood event2 unless:
a) flood hazard avoidance* is achieved or the 0.5% AEP (1 in 200 year) flood hazard is mitigated, or
b) the non-habitable structure^ or activity is on production land^, or</td></tr>
</table>

Objective	Policies
	c) there is a functional necessity to locate the structure^ or activity within such an area, in any of which cases the structure^ or activity may be allowed. I Flood hazard avoidance* must be preferred to flood hazard mitigation. (d) When making decisions under Policies 9-2(a) and b(i) regarding the appropriateness of proposed flood hazard mitigation measures, the Regional Council and Territorial Authorities^ must: 1. ensure that occupied structures have a finished floor or ground level, which includes reasonable freeboard, above the 0.5% AEP (1 in 200 year) flood level. 2. ensure that in a 0.5% AEP (1 in 200 year) flood event2 the inundation of access between occupied structures^ and a safe area where evacuation may be carried out (preferably ground that will not be flooded) must be no greater than 0.5 m above finished ground level with a maximum water velocity of 1.0 m/s, or some other combination of water depth and velocity that can be shown to result in no greater risk to human life, infrastructure^ or property* 3. ensure that any more than minor adverse effects^ on the effectiveness of existing flood hazard avoidance* or mitigation measures, including works and structures^ within River and Drainage Schemes, natural landforms that protect against inundation, and overland stormwater flow paths, are avoided, 4. ensure that adverse effects on existing structures^ and activities are avoided or mitigated, 5. have regard to the likelihood and consequences of the proposed flood hazard mitigation measures failing, 6. have regard to the consequential effects^ of meeting the requirements of (d)(ii), including but not limited to landscape and character, urban design, and the displacement of floodwaters onto adjoining properties*, and 7. have regard to the proposed ownership of, and responsibility for maintenance of, the flood hazard mitigation measures including the appropriateness and certainty of the maintenance regime. (e) Within that part of the Palmerston North City Council district that is protected by the Lower Manawatu River Flood Control Scheme to a 0.2%

Objective	Policies
	AEP (1 in 500 year) standard, including the Mangaone Stream stopbank system, additional flood hazard avoidance* or mitigation measures will generally not be required when establishing any new structure^ or activity or increasing the scale of any existing structure^ or activity. (f) Despite Policy 9-2(d)(i) and (ii), within that part of the Wanganui central city bounded by Bates Street, Ridgway Street and Victoria Avenue, flood hazard mitigation measures will not be limited to considering flood height and flow but will include such methods as resilient construction and emergency management systems. (g) This policy does not apply to new critical infrastructure*
Comment: As critical infrastructure it is noted that Policy 9-2 does not apply to development of the Freight Hub. However the designation extent has provide for stormwater detention ponds and therefore taken into account minimising the impact on the capacity of the downstream flood plain and the culverts and open watercourse maintain the ability to pass water through the site and avoid creating upstream flood risks.	

10.1.6 Palmerston North City District Plan

The relevant objectives and policies of the Palmerston North City District Plan (PNDP) are assessed in Table 10-2 below.

Table 10-2 PNDP Objectives and Policies Assessment

Objective	Policies
2.5 The City View Objectives The City View Objectives reflect the resource management issues for the City and represent the broad outcomes this Plan seeks to achieve. 1. Planning for residential, industrial, commercial and rural-residential growth sustains a compact, orderly and connected urban form which avoids the adverse environmental effects of uncontained urban expansion into the rural zone. 2. The provision of infrastructure, particularly within identified growth areas, shall be efficient, timely, environmentally sensitive and economically sustainable. 3. The integrated and efficient provision of, and access to, infrastructure, network utilities and local services is facilitated for all residents. 6. Rural subdivision and development is directed away from Class I and II versatile soils. 8. The distinctive rural and urban character of the City is recognised and a clear differentiation is provided regarding subdivision, development and servicing expectations within rural and urban areas. 9. Subdivisions, buildings and infrastructure are designed and constructed to promote a coordinated, healthy and safe environment. 10. The visual appeal of the City is enhanced 11. The principles of good urban design are given effect to for all new subdivisions, urban intensification and major building developments, particularly those located within the City Centre or fronting key transportation routes. 12. A wide range of business and economic activities are provided for. 13. Investment within the City is stimulated and identified priority sectors such as research, education, public administration, retail, logistics, construction, manufacturing and agriculture are well supported.	

Objective	Policies
14. The City Centre remains the primary focus for retail, office, commercial and cultural activities within the City. Other commercial centres will be planned to ensure that they support the primary role and function of the City Centre. 16. The historic heritage of the City is researched, identified and preserved within the context of sustainable management. 17. The natural and cultural heritage features of the City are preserved and enhanced, including the margins of the Manawatu River and sites of significance to tangata whenua. 19. The effects of natural hazards are avoided or mitigated taking into account the effects of climate change and the significant social disruption caused by natural hazard events. 22. Appropriate noise standards are in place to protect noise sensitive activities. 23. Infrastructure operates in a safe and efficient manner, and the effects of activities which could impact on the safe and efficient operation of this infrastructure are avoided, remedied or mitigated. 24. All forms of transport, including public transport, walking, cycling and private vehicles are adequately provided for to assist with sustainable energy use and a healthy lifestyle. 25. Infrastructure and physical resources of regional or national importance are recognised and provided for by enabling their establishment, operation, maintenance, upgrading and protection from the effects of other activities. 27. The effects of activities using hazardous substances are avoided, remedied or mitigated.	
Comment: The City View Objectives above are considered relevant to the assessment of this Freight Hub project**.** It is noted that the introduction to these objectives reflects the fact that PNCC has many roles, statutory functions, plans and strategies and that the City has as very multi-faceted character. In this regard, it is noted that drivers for this project have included the need to expand the size and increase the ability for KiwiRail to grow the freight network in part in recognition that the logical location is in or near Palmerston North City. This is because of the growing role of Palmerston North in the region as a distribution centre due to the transport networks that pass through the area. The location selected is consistent with the long history of industrial growth and expansion in the north eastern area including the rezoning of 230 ha of rural land as NEIZ and the boundary extension of PNCC in 2012 when part of Manawatu District Council was included within the PNCC boundary. The Freight Hub is in the area identified in PNCC's 10-year plan 'Our Integrated Plan' as an area of "Sustainable Growth (Industrial) Regional Ring Road, Rail, Airport & multi-modal infrastructure to enable industrial growth: North Eastern Industrial Zone" Moving the KiwiRail freight operation from the current yard on Tremaine Avenue will enable PNCC to address congestion in the local road network there and will allow the land to be used for another land use.	
3.5 OBJECTIVE 1 To acknowledge Rangitane o Manawatu as Tangata Whenua within Palmerston North City.	**3.5 POLICIES** 1.1 To inform Tangata Whenua of all notified Discretionary and Non-Complying resource consent applications. 1.2 To recognise marae as an appropriate venue for consultation with Tangata Whenua. 1.3 To make provision for submissions to be made in te reo Maori in accordance with tikanga Maori. 1.4 To follow Rangitanenuiarawa in resource management processes which Rangitane o Manawatu are involved in
Comment: There is an ongoing commitment to continue working with Iwi through the Mana Whenua Engagement Framework.	

Objective	Policies
3.5 OBJECTIVE 2 To ensure that consultation is undertaken with Tangata Whenua on resource management issues.	**3.5 POLICIES** **2.**1 To consult early on with Tangata Whenua, including Rangitane o Manawatu, in resource management processes. 2.2 To consult Tangata Whenua with regard to the identification of and appropriate protection of urupa, wahi tapu, wahi tupuna and other sites. 2.3 To ensure ongoing consultation and communication is maintained with regard to resource management issues of particular concern to Tangata Whenua.
Comment: following briefing iwi at the outset, KiwiRail engaged with • Ngāti Kauwhata • Rangitāne ki Manawatu • Ngāti Raukawa ki te tonga KiwiRail has continued to ensure ongoing consultation and provided a Mana Whenua Engagement Framework as a method of ensuring this dialogue continues	
3.5 OBJECTIVE 3 To enable Tangata Whenua institutions to develop within Palmerston North City.	**3.5 POLICIES** 3.1 To provide for the development of marae, urupa, papa kainga, kohanga reo and kura and other forms of cultural institutions in the City. 3.2 To support the implementation of Treaty of Waitangi redress mechanisms as applicable.
Comment: The site selection process avoided impact on existing Tangata Whenua institutions such as Marae and Kohanga Reo.	
3.5 OBJECTIVE 4 To actively protect sites of cultural, historic and natural significance to Tangata Whenua.	**3.5 POLICIES** 4.1 To contain provisions within the District Plan which facilitate tino rangitiratanga and kaitiakitanga of Tangata Whenua, in relation to sites and objects of cultural, historic and natural heritage value to Tangata Whenua.
Comment: No sites and objects of cultural, historic, and natural heritage value to Tangata Whenua are understood to be affected at this stage, but through the Mana Whenua Engagement Framework KiwiRail will work with mana whenua to develop mechanisms to avoid or mitigate effects on mana whenua values.	
9.3 OBJECTIVE 1 To protect rural land from the adverse effects of unnecessary and unplanned urban expansion	**9.3 Policies** 1.1 To protect rural land that has been identified in Council strategies as potentially suitable for future urban growth, including the potential for future residential growth at City West (as shown on Map 9.2) subject to: • appropriately addressing liquefaction risk and mitigation options: and • the provision of adequate integrated network infrastructure. 1.2 To ensure, as far as possible, that existing urban land is fully utilised before the rural land is released for urban purposes.

Objective	Policies
	1.3 To ensure that the urban conversion of the land proceeds in an orderly manner. 1.4 To avoid, where possible, the fragmentation of rural land that has been identified in Council strategies as potentially suitable for future urban growth into small blocks. 1.5 To provide for rural residential subdivision and development in identified areas.
Comment: Approximately 127 ha of rural zoned land is affected by the Freight Hub. Around 17ha of this is legal road. Some of these roads and the underlying subdivision pattern at the northern end of the Freight Hub are reflective of earlier development aspirations related to Bunnythorpe. The unique characteristics of the Freight Hub mean that the Freight Hub must be located adjacent to the NIMT. The impact of the Freight Hub if located in existing urban land or closer to it would be more significant than the proposed peri urban location. In conclusion is suggested that it is necessary to locate the Freight Hub here as there is no room for expansion in the existing location and this expansion is not unplanned given close to NEIZ and direction in the relevant strategic planning documents.	
9.3 OBJECTIVE 2 To encourage the effective and efficient use and development of the natural and physical resources of the rural area	**2.Policies** 2.1 To avoid, remedy or mitigate the adverse effects of activities on land of high productive capability and versatile soils. 2.2 To ensure that the adverse effects of activities in the rural area are avoided, remedied or mitigated such that the amenities of the area and nearby urban areas are maintained. 2.3 To control the actual or potential environmentally adverse effects of activities in the rural area, including the adverse effects of: • odour; • noise; • traffic; • visual impact. 2.4 To encourage the maintenance of sustainable land-uses in the rural area. 2.5 To identify areas subject to natural hazards, and to ensure the adverse effects of the natural hazard are avoided, remedied or mitigated and, where appropriate, prohibit use and development of hazard prone areas.
Comment: The rural zoned land is identified as Class 2, 3 and 9 land under the Land Use Capability system. The RPS identifies class 1 and 2 land under the same system as versatile soils for use as production land. There are a number of sites within the Freight Hub footprint that have already been subdivided and developed as residential lifestyle sites even though they are within the Rural Zone and this has already impacted on the efficient use of the Class 2 and 3 land for production. The Freight Hub will change aspects of the amenity of the adjacent rural area and sites in the residential areas at Bunnythorpe. While the Freight Hub area includes land that is identified as flood prone and there has been an assessment of other potential natural hazards, the design and delivery of the Freight Hub will ensure the adverse effects of the natural hazard are avoided, remedied or mitigated. While it is noted that policies 2.2 and 2.3 are focused on rural activities affecting urban/residential areas, it is noted that adverse effects of the Freight Hub are mitigated such that the amenities of the area and nearby urban areas are maintained and there will be appropriate controls on noise and traffic through the conditions proposed.•	

Objective	Policies
9.3 OBJECTIVE 3 To maintain or enhance the quality and natural character of the rural environment.	**9.3 Policies** 3.1 To provide for the health and safety of rural dwellers by establishing specific noise limits for the rural area. 3.2 To encourage the adoption of sustainable land use practices. 3.3 To control the adverse visual effects on the rural environment (including effects on rural dwellers) of activities that disturb the land surface, introduce buildings, remove and/or process natural material. 3.4 To control adverse visual effects of renewable electricity generation activities (excluding windfarms and their repowering or the establishment of consented windfarms) on significant amenity landscapes, which include Te Mata Peak and Te Mata-Kaihinu Ridgeline above the 400m contour, to maintain the qualities and characteristics of those landscapes
Comment: The noise levels expected to be generated by activities on the Freight Hub have been identified using acoustics computer modelling that predicts indicative sound levels at nearby properties. There are a range of new sources of noise; some like those found in the rural area (workshops, trucks, loaders) and the combined noise effects have been modelled without mitigation and determined to exceed the standards of the rural zone during the day. The Acoustic Assessment in Technical Report D includes details about 5 km of noise barriers that are proposed around the boundary of the Freight Hub to provide for the health and safety of rural dwellers and notes the potential need for additional measures. It is noted that the area already zoned NEIZ is potentially in transition and some/ all the existing dwellings located in that zone may be removed by the time the Freight Hub is developed. Adverse visual effects on the rural environment around the Freight Hub are proposed to be mitigated through the implementation of extensive landscaping. Sustainable land use practices such as the reuse of stormwater will be adopted along with other practices that KiwiRail would normally adopt.	
9.3 OBJECTIVE 4 To recognise and enhance the diversity of the rural community	**9.3 Policies** 4.1 To permit a variety of land-based activities subject to control of their adverse environmental effects. 4.2 To provide for community and leisure facilities to serve rural and urban communities. 4.3 To allow a range of other activities where their adverse effects can be avoided or mitigated.
Comment: It is possible that the range of land-based activities currently located on the rural zoned land will continue for some time until KiwiRail commences development of the land. It is clear given the stepped extensions to the NEIZ that have occurred over the past decade, that further zone changes may occur especially if future transport changes are implemented. The area occupied by the Freight Hub does not currently contain any specific community and leisure facilities however the opportunity to provide walking and cycling connections is shown in the Landscape plan In Appendix C to this report.	
9.3 OBJECTIVE 5 To avoid, remedy or mitigate the adverse effects of aircraft noise on noise sensitive activities in the vicinity of the Palmerston North Airport, while	**9.3 Policies** 5.1 To prohibit any new dwelling, school, hospital or other building to be used for regular living accommodation in the Air Noise Zone.

Objective	Policies
protecting the Palmerston North Airport from the potential adverse effects of noise sensitive activities on efficient airport operations.	5.2 To mitigate the adverse effects of aircraft noise on any new dwelling, school, hospital or other building to be used for regular living accommodation, or regular assembly of people, in the Inner and Outer Control Zones. 5.3 To avoid the rezoning of land within the Inner and Outer Control Contours that enables an increase in the scale or intensity of noise-sensitive activities
Comment: The Freight Hub is not a noise sensitive activity and does not involve any dwelling, school, hospital, or other building to be used for regular living accommodation.	
12.A.3 Objective 1 To meet the City's needs for land for industrial growth	**12.A.3 Policies** 1.1 To provide an area of land zoned primarily for industrial purposes in the location shown as the North East Industrial Zone. 1.2 To enable the establishment of industries requiring large lots within the Zone. 1.3 To provide for transitional uses, including existing uses, of the land within the Zone
Comment: The Freight Hub is a very large 'industrial' activity located partly on the NEIZ (approx. 50 ha) and the designation and zoning in combination provides for transitional uses to occur on the land until development can commence. The presence of the Freight Hub will support other industrial activities and encourage them to locate in the NEIZ.	
12.A.3 Objective 2 To enable industrial use and development of the Zone taking into account topography, any existing site features, natural hazards, the servicing needs of future industry and the ability for people and vehicles to move safely and efficiently through the area.	**12.A.3 Policies** 2.1 To ensure that the design, layout and servicing of the Existing Zone is, as far as reasonably practicable, in accordance with key design principles outlined in the Design Guide. 2.2 To ensure that subdivision, use and development in the Zone follows the layout shown on the Structure Plan (see Section 7, Map 7.2), particularly in regard to watercourse reserve areas and road access points. 2.3 To identify and retain watercourses as watercourse reserve areas and design features at the time of subdivision and/or development. 2.4 To provide opportunities for pedestrians, cyclists and vehicles, while ensuring that conflict with industrial traffic is minimised. 2.5 To ensure that additional traffic does not put pressure on the safe and efficient operation of the roading network. 2.6 To provide open space within the industrial area on a planned basis for amenity purposes where possible, particularly in association with the retained open space within watercourse reserve areas. 2.7 To provide for the efficient movement of vehicles and in particular the access requirements of emergency service vehicles. 2.8 To avoid the construction of any building, or the filling and raising of the level of the land within

Objective	Policies
	Watercourse Reserve Areas and the Existing Stormwater Detention Area shown in Structure Plan Map 7.2.
Comment: The Freight Hub is a very large 'industrial' activity with some very specific requirements that mean that all existing watercourses are not able to be retained in their current form. However as set out in the concept plan and landscape plan and contained in Appendix B and Appendix C it is possible that watercourse reserve areas will become design features and that there are opportunities for pedestrians, cyclists and open space for amenity purposes. Where possible the design principles outlined in the Design Guide could also be able to be implemented through detailed design.	
12.A.3 Objective 3 To promote the efficient development and use of land and associated infrastructure within the Zoned area.	**12.A.3 Policies** 3.1 To enable the establishment and development of industry within the North East Industrial Zone. 3.2 To enable a limited range of non-industrial activities which are compatible with and ancillary to industrial activities. 3.3 To ensure the availability of lots for the purposes of developing large lot industries, for both current and future generations is not compromised through inappropriate land use activities and/or subdivision. 3.4 To manage adverse effects on the environment from inundation or the discharge of stormwater. 3.5 To provide for development of the North East Industrial Zone Extension Area in an integrated manner with the existing North East Industrial Zone without compromising other goals of the Plan for surrounding land. 3.6 To ensure in the North East Industrial Zone Extension Area design of the servicing required for the area, including roading and hazard management, is provided at the earliest stage of development. 3.7 To ensure the adverse effects of stormwater runoff in the North East Industrial Zone Extension Area are mitigated by utilising on-site primary stormwater management with collection and storage, and permeable surfaces, in addition to integrated secondary processing through common watercourse reserve areas. 3.8 To require an integrated approach to the provision of stormwater management that recognises the capacity of existing systems and natural drainage patterns within the North East Industrial Zone Extension Area. 3.9 To require the use of sustainable urban drainage systems and low impact design systems throughout the North East Industrial Zone Extension Area. 3.10 To ensure stormwater management contributes to the visual amenity of the development 3.11 To require development in the North East Industrial Zone Extension Area to comply with

Objective	Policies
	Structure Plan 7.2 to ensure an integrated and sustainable pattern of development.
Comment: There are no non-industrial activities being provided for other than those associated with the landscaping; noise mitigation and stormwater management envisaged by the NEIZ. The Stormwater Management Framework is based on low impact stormwater design systems. There are aspects of the Freight Hub that comply with Structure Plan 7.2 although some of the roading is not able to be delivered and the location of the Water Reserve is not in the same place.	
12.A.3 Objective 4 To ensure that the establishment and operation of industry within the North East Industrial Zone is not unduly impeded or compromised by the effects of incompatible or inappropriate land uses	**12.A.3 Policies** 4.1 To avoid the use of North East Industrial zoned land for residential purposes, other than for existing residential activities on a transitional basis. 4.2 To manage the scale of "commercial" development within the North East Industrial Zone to a narrower range of activities than in other industrial zones, to ensure efficient use and development of the natural and physical resources of the Zone. 4.3 To restrict the size and scale of ancillary retail and office activities. 4.4 To require buildings, or parts of buildings, that are to be used for office development and noise sensitive activities to comply with sound insulation and ventilation performance standards to mitigate neighbouring industrial noise and protect activities against Palmerston North Airport noise.
Comment: As noted above the Freight Hub is a very large 'industrial' activity with no non-industrial activities and no retail and only offices provided to support to be ancillary to the activities occurring on the site.	
12.A.3 Objective 5 To avoid, remedy or mitigate adverse environmental effects on the amenity of the North East Industrial Zone and areas at the interface with the Zone.	**12.A.3 Policies** 5.1 To avoid, remedy or mitigate the adverse effects of large buildings, including effects on areas at the interface with the North East Industrial Zone. 5.2 To ensure that adverse effects on the rural amenity values of the area are avoided or mitigated. 5.3 To ensure that planting and landscaping plans for streets and lots are approved at the time of subdivision (or where subdivision is not involved, prior to commencement of industrial use). 5.4 To ensure that road access to the North East Industrial sites is in accordance with the Structure Plan (Section 7, Map 7.2). 5.5 To avoid road access to the North East Industrial Zone Extension Area from Railway Road. 5.6 To ensure that planting and landscaping for buffer and amenity setback areas are undertaken as a condition of subdivision consent, or where subdivision is not involved, prior to commencement of industrial use.

Objective	Policies
Comment: The adverse effects of large buildings are reduced close to the residential and rural interfaces through the layout of the Freight Hub and the proposed landscaping and the provision of noise mitigation. A replacement for the stopped section of Railway Road is not envisaged in the Structure Plan.	
12.A.3 Objective 6 To maintain or enhance visual amenity within the North East Industrial Zone	**12.A.3 Policies** 6.1 To require any activity involving the construction, addition to or external alteration of buildings within the North East Industrial Zone to contribute to the visual enhancement and amenity of the Industrial area, particularly ensuring consistency with the Design Guide and Structure Plan (Map 7.2).
Comment: The interface around the Freight Hub is expected to be heavily landscaped which will contribute to the visual enhancement and amenity of the Industrial area,	
12.A.3 Objective 7.1 To avoid, remedy or mitigate the adverse effects of aircraft noise on noise sensitive activities in the vicinity of the Palmerston North Airport.	**12.A.3 Policies** 7.1 To mitigate the adverse effects of aircraft noise on any building to be used for sensitive activities in the North East Industrial Zone.
Comment: Aircraft noise is unlikely to be an issue for activities within the Freight Hub site as there are no noise sensitive activities proposed within the site.	
12.A.3 Objective 7.2 To avoid, remedy or mitigate the potential adverse effects of activities in the vicinity of Palmerston North Airport on airport operations	**12.A.3 Policies** 7.2 To ensure that any development complies with the Airport Protection Surface Rule in Section 13.4
Comment: The Freight Hub is located to the north of the airport and can comply with the Airport Protection Surface Rule as set out in section 5.1.2.	
17.3 B Sites and Objects of Cultural and Natural Heritage Value to Tangata Whenua Objective 1 To facilitate the Tino Rangatiratanga and Kaitiakitanga of Tangata Whenua in relation to sites and objects of cultural and natural heritage value to Tangata Whenua.	**17.3 B Sites and Objects of Cultural and Natural Heritage Value to Tangata Whenua Policy 1.3** To avoid, remedy or mitigate the effects of activities or development which could disturb or destroy the intrinsic cultural and natural heritage values associated with an identified site or object
	17.3 B Sites and Objects of Cultural and Natural Heritage Value to Tangata Whenua Policy 1.4 To consult Tangata Whenua regarding the identification, protection and management of sites and objects considered to be of cultural and natural heritage value.
Comment: KiwiRail is committed, through the mana whenua Engagement Framework, to develop mechanisms for avoiding or mitigating effects on sites and objects of cultural and natural heritage value.	
17.3C Notable Trees, Groups of Notable Trees, and Habitats of Local Significance Objective 1	**17.3C Notable Trees, Groups of Notable Trees, and Habitats of Local Significance Policy 1.4**

Objective	Policies
To ensure that notable trees, groups of notable trees, and habitats of local significance within the City are appropriately protected.	To avoid, remedy or mitigate the effects of activities or development which could diminish or destroy the cultural, historical, botanical or visual amenity value associated with scheduled notable trees, groups of notable trees, or habitats of local significance.
Comment: No notable trees, groups of notable trees, and habitats of local significance are expected to be destroyed.	
20.3.1 Objective 1 The City's land transport networks are maintained and developed to ensure that people and goods move safely and efficiently through and within the City.	**20.3.1 Policies** 1.1 Identify and apply the roading hierarchy to ensure the function of each road in the City is recognized and protected in the management of land use, development and the subdivision of land. 1.2 All roads in the City have function and design characteristics consistent with their place in the roading hierarchy. 1.3 Maintain and upgrade the existing roads in the City and provide for new roads to meet the current and future needs of the City. 1.4 The road network stormwater control system shall protect the road, road users and adjoining land from the adverse effects of water from roads and minimise any adverse effect on the environment. 1.5 Require all new public roads, private roads and vehicle accesses to be designed and constructed to meet performance standards relating to the safety and efficiency of vehicle movement, and to ensure the safe use of the road transport network for all users, particularly in respect of: (a) Road width and alignment which should be sufficient for two vehicle lanes except where traffic volumes are insufficient; (b) The formation and surface sealing of all roads and vehicle accesses to standards appropriate to the volume of traffic expected to be carried; (c) Provision for necessary network utility facilities within roads; and (d) Safe design and construction of roads, road access points and intersections, including alignment, gradient, vehicle parking, manoeuvring and turning requirements. 1.6 Encourage the development of safe and accessible pedestrian paths and cycleways, as well as convenient and accessible cycle parking, to support the opportunity for people to use active and non-vehicular modes of transport throughout the City. 1.7 To support and encourage the provision of public transport and its use throughout the City as an integral part of the transportation system.

Objective	Policies
	1.8 Convenient, safe and accessible car parking, loading and manoeuvring facilities are available for residents, staff, visitors and customers for all activities without creating congestion or conflicts with moving vehicles, pedestrians or cyclists on adjacent roads.
Comment: the new access roads are to be designed and constructed to meet performance standards relating to the safety and efficiency of vehicle movement, and to ensure the safe use of the road transport network for all users. Safe and accessible pedestrian paths and cycleways are potentially able to be provided adjacent to the perimeter road and in some cases off road. The Freight Hub will only be able to be accessed through security-controlled gates and all car parking, loading and manoeuvring facilities will be designed to be safe and accessible.	
20.3.1 Objective 2 The land transport network is safe, convenient and efficient while avoiding, remedying or mitigating adverse effects in a way that maintains the health and safety of people and communities, and the amenity values and character of the City's environment.	**Policies** 2.1 To restrict the through movement of traffic where the movement has adverse visual, noise and safety effects on adjoining areas by using the roading hierarchy to direct higher volume and heavy traffic movements on identified arterial routes and discouraging this traffic from other areas, such as residential areas. 2.2 To avoid, remedy or mitigate the impact of roads and parking areas on visual amenity values of the community by requiring the provision of landscaping. 2.3 Ensure that the adverse effects of long term and commuter parking associated with activities in the business and industrial areas on the amenity values of residential streets are mitigated. 2.4 Avoid adverse effects on amenity and character by ensuring that new roads are well designed and visually complement the character of the surrounding areas.
Comment: the stopping of Railway Road will mean that through traffic using Roberts Line will be restricted. The new perimeter road as proposed will enhance the visual amenity values of the community. This NOR has been prepared in advance of the anticipated upgrades to the future road network and new roading hierarchy in the immediate area being delivered by Waka Kotahi and PNCC. However, the roading improvements and access roads to the Freight Hub will not preclude connections to any improvements or new connections within the wider regional transport system.	
20.3.1 Objective 3 The safety and efficiency of the land transport network is protected from the adverse effects of land use, development and subdivision activities.	**Policies** 3.1 Avoid, remedy or mitigate the adverse effects of increased traffic or changes in traffic type, which would compromise the safe and efficient operation of any road or level crossing, or the safe and convenient movement of pedestrians and cyclists on roads or at level crossings. 3.2 Require vehicle crossing places and vehicle entrances from public roads to be located, constructed, and maintained to standards appropriate to the expected traffic volume, pedestrian movement and speed environment of each road.

Objective	Policies
	3.3 Ensure that buildings and activities do not compromise land transport network safety, including maintaining the necessary clear sight lines for road vehicles at level crossings and road intersections. 3.4 Ensure adequate on-site parking and manoeuvring space is provided for each type of activity in a safe and visually attractive manner. 3.5 Ensure that buildings and activities make provision for adequate and safe on-site loading. 3.6 Control the location, design and extent of advertising signs to ensure that they do not interfere with the safe and efficient use of land transport networks
Comment: the stopping of Railway Road will mean that four level crossings will be removed, and that alternative provision is made for the safe and convenient movement of pedestrians and cyclists and vehicles. In addition the Freight Hub will have accesses that are located, constructed, and maintained to standards appropriate to the expected traffic volume, and as shown in the landscape plan in Appendix C there is the potential for safe and convenient movement of pedestrians and cyclists on roads off road.	
22.3 Objective 2 To control development on land which is or might be adversely affected by natural hazards.	**Policies** 2.1 To exclude development on hazard-prone land where the effects of the hazard cannot be effectively avoided, remedied or mitigated. 2.2 To establish appropriate controls to avoid, remedy or mitigate the effects of natural hazards. 2.3 To control subdivision and development within the Flood Protection Zone and within Flood Prone Areas to avoid or mitigate adverse effects of flooding hazards on people, property, infrastructure and the environment. 2.4 To control subdivision and development in the Flygers Line Floodway to maintain the effective functioning of the Floodway and avoid exacerbating flooding hazard. 2.5 To avoid built development on unstable land unless it can be demonstrated by a suitably qualified and experienced practitioner that the hazard can be avoided, remedied or mitigated. 2.6 To avoid development on land subject to liquefaction where the effects of the hazard cannot be effectively avoided, remedied or mitigated. 2.7 Ensure any built development on areas subject to liquefaction is located and/or designed in a manner that suitably addresses the hazard on the site. 2.8 Recognise that the risk from wildfire is higher where built development occurs in close proximity to woody vegetation.

Objective	Policies
Comment: The District Plan recognises that some critical infrastructure such as strategic rail networks has a functional need to be located within a Flood Prone Area provided it complies with the Performance Standards specified in relation to Flood Hazard Avoidance or Mitigation. The designation extent has provided for stormwater detention ponds and therefore taken into account minimising the impact on the capacity of the downstream flood plain and the culverts and open watercourse maintain the ability to pass water through the site and avoid creating upstream flood risks has been identified.	
23.3 Objective 2 To provide for the operation, maintenance, upgrading and development of existing network utilities of regional or national importance and the establishment of new regionally or nationally important network utilities.	**Policies** 2.1 To permit the operation, maintenance and upgrading of existing regionally or nationally important network utilities where such works or activities can be carried out without significantly changing the character, intensity or scale of the adverse effects associated with them. 2.2 To enable the operation, maintenance and upgrading of existing regionally or nationally important network utilities and the establishment of new regionally or nationally important network utilities, provided that the adverse effects are avoided, remedied or mitigated, having regard to: i. the benefit of the works; ii. any functional, technical and operational requirements and constraints; and iii. the way adverse effects have been managed through the route and site selection process. 2.3 To avoid, or as appropriate remedy or mitigate, the potential for adverse effects, including reverse sensitivity effects on regionally or nationally important network utilities from incompatible new subdivision, use or development occurring under, over or adjacent to regionally or nationally important network utilities. 2.4 To avoid the establishment or intensification of sensitive activities, incompatible new subdivision, use and development within defined National Grid Yards and National Grid Subdivision Corridors. 2.5 To notify owners or managers of network utilities of regional or national importance of consent applications that may adversely affect the resources they own or manage.
Comment: The benefits of the Freight Hub as having regional and national importance to the function of the rail freight network has been outlined in Section 2 above. The existing freight yard in Tremaine Avenue cannot be redeveloped without significant impact on the existing urban fabric of the City. The benefit of the works and its functional and operational requirements have been outlined in Section 2. The site selection process as outlined in Section 10.2 below considered the full range of effects. Defined National Grid Yards and National Grid Subdivision Corridors have been avoided through the site selection process and network utilities including state highway; power and gas have been advised of the project.	
Objective 3	**Policies**

Objective	Policies
To recognise and provide for the establishment, operation, maintenance and upgrading of network utilities and associated activities in the City, while ensuring that the adverse effects of those activities on amenity, landscape, health and safety, and cultural and heritage values in both urban and rural environments are avoided, remedied or mitigated	3.1. To enable the establishment, operation, maintenance and upgrading of network utilities and associated activities resulting in minor or less than minor adverse environmental effects throughout the City. 3.2. To ensure that network utilities associated with new land development are designed, located, developed, and constructed in accordance with the Council's Engineering Standards for Land Development. 3.3. To consider the operational and technical requirements and constraints of network utilities and the benefits that the network utilities provide to the economic, social and cultural functioning of the City. 3.4. To require the placement of network utilities underground unless: • there are natural or physical features or structures, or technological and operational constraints that makes underground placement impracticable or unreasonable; • they are of a temporary nature and required for emergency purposes or critical events; • they are of a nature that can only operate above ground; • in the case of lines, they traverse any Rural Zone or roads within the Rural Zone. 3.5. To encourage the co-location of structures and sharing of network utility channels and corridors where this is operationally feasible, to enable the efficient construction, installation, operation, upgrading and maintenance of network utilities, and to reduce their potentially adverse visual effects on the environment. 3.6. To encourage the use of roads as network utility corridors in accordance with the National Code of Practice for Utility Operators' Access to Transport Corridors. 3.7. To ensure that the provision and operation of utilities that cross jurisdictional boundaries is managed in a consistent and integrated manner; 3.8. To encourage the appropriate use of designations for new network utilities and extensions to existing network utilities that are not designated. 3.9. To encourage network utility providers to engage with communities that may be significantly adversely affected by the establishment of new network utilities and by their subsequent operation, maintenance and upgrade.
Comment	

Objective	Policies
Given the nature of the Freight Hub and the content of Council's Engineering Standards for Land Development which is focused on subdivision it is not possible for development to be in accordance with the Council's Engineering Standards for Land Development other than in relation to the new roads/ intersection upgrades. The exception is in the unformed section of Sangsters Road where the intention is that a formed driveway access will be provided for those properties that have lost access directly to Railway Road and have no alternative access to the road network. The development of the Freight Hub and its required areas for stormwater management will take into consideration the potential adverse effects on the community through the provision of landscaping, noise mitigation and potential opportunities for new walking and cycling connections.	

10.2 Consideration of Alternatives

In accordance with section 171(1)(b) of the RMA, a territorial authority is required to consider whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work where:

- the requiring authority does not have an interest in the land sufficient for undertaking the work; or
- It is likely the work will have a significant adverse effect on the environment.

As KiwiRail does not have sufficient property interests in the land to undertake the Freight Hub project, in accordance with section 171(1)(b) KiwiRail has considered alternative routes, sites and methods. The process that KiwiRail carried out is outlined in detail in the multi-criteria analysis report in Appendix F and summarised in the following sections.

10.2.1 Site Selection Process

Both the site selection process and the consideration of layout options were informed by, and responded to, inputs from technical specialists, stakeholders and KiwiRail representatives.

An overview of the process is set out in Figure 10 1 below.

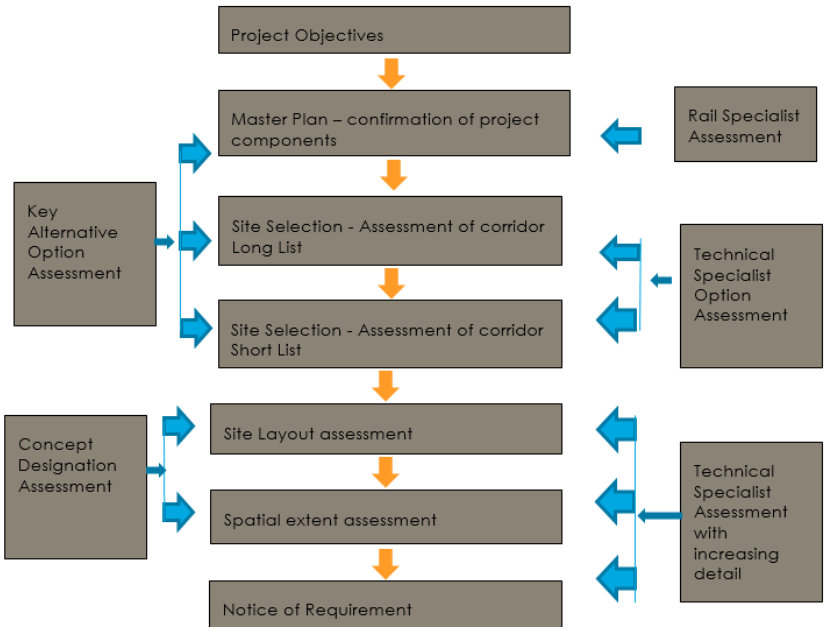


Figure 10-1 Assessment of Alternative Process

10.2.2 Site Location

10.2.2.1 Stage 1: Site Selection Process

10.2.2.1.1 Overview

The master plan was used to assist in identifying the size of the site required to achieve the project objectives along the NIMT and to inform the subsequent analysis.

Palmerston North is strategically important to KiwiRail due to its connections to the NIMT (north and south) and to the branch lines to Napier and Taranaki (east and west). The site selection process focused on the NIMT corridor in the area around Palmerston North in line with KiwiRail's objectives.

KiwiRail relied on an MCA process to select the Freight Hub site. As part of the MCA process, technical specialists prepared assessments which scored each of the options against a range of environmental criteria. Three workshops were held that involved KiwiRail representatives, technical specialists, and key stakeholders. Decision conferencing was a technique applied in those workshops to ensure robust outcomes and to provide transparency in the decision-making process. The key components of the process are summarised below and set out in detail in Appendix F.

10.2.2.1.2 Long List of Options

At an initial workshop of KiwiRail representatives, technical specialists and key stakeholders, a set of assessment criteria were agreed to be used by the specialists when assessing effects associated with the area options. It was determined that criteria relating to rail, engineering degree of difficulty, connectivity, economic, resilience, tāngata whenua values, heritage and archaeology, natural environment, property, engineering degree of difficulty, noise and vibration, visual and landscape, strategic fit and community cohesion should be assessed.

A long list of nine area options were identified along the NIMT between Longburn and Fielding (shown in Figure 10-2 for initial assessment which included the Existing Freight Yard (option nine). These areas were significantly larger than the potential Freight Hub footprint to promote flexible analysis at the early stage of this assessment process.

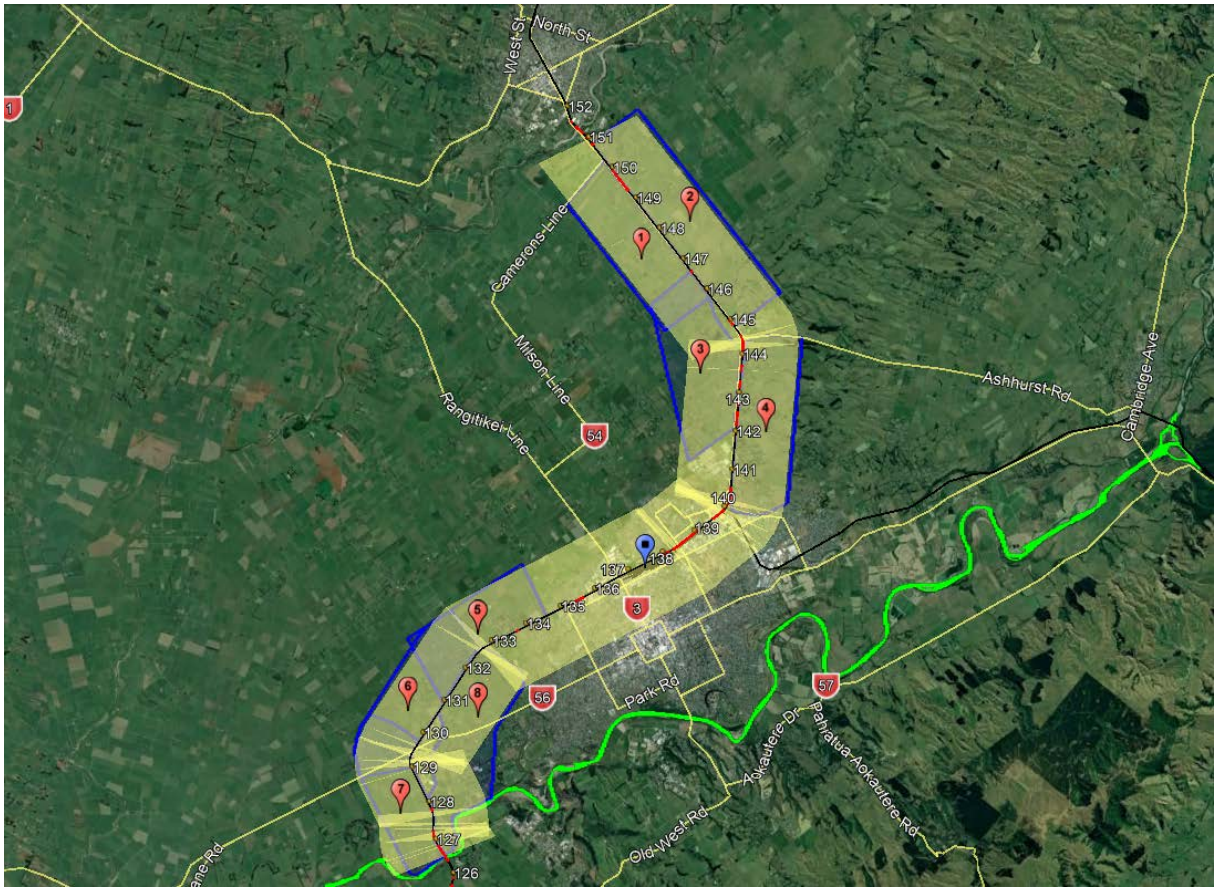


Figure 10-2 Nine Locations Initially Assessed

A range of technical specialists assessed the nine area options against the above criteria, and allocated a score to each option between 1 and 5. For the purposes of scoring each option, each criterion to be assessed was categorised under either Benefits, Impact or Difficulty, as shown in Table 10-3 below.

Table 10-3 Approach to Scoring of Criteria

	Criteria		
Score	**Benefits**	**Impact**	**Difficulty**
	Rail Economic	Natural environment Noise and vibration Heritage and archaeology Visual and landscape Resilience Connectivity Strategic fit Community cohesion	Engineering degree of difficulty Property degree of difficulty
1	High Benefits	Low Impact	Low Difficulty
2	Medium High	Medium Low	Medium Low

	Criteria		
Score	**Benefits**	**Impact**	**Difficulty**
3	Medium	Medium	Medium
4	Medium Low	Medium High	Medium High
5	Low Benefits	High Impact	High Difficulty

At a second workshop, each specialist presented their assessments and scores to the workshop participants. The workshop participants also discussed the significance of each criterion and then weighted the importance of each criterion by giving them a weighting of between 1 and 10, with 10 being the most important. At this workshop, the participants and the relevant specialists agreed that four of the nine options were "fatally flawed". Options were totally flawed where the effects or constraints were so significant that it was not feasible for that option to be pursued, or the option failed to meet the project objectives.

In some cases, specialists were asked to undertake further work following the workshop. Following Workshop 2 and the completion of the specialist reassessments, sensitivity testing of the long list of area options was undertaken by Stantec by applying a range of weightings to the raw scores including the weightings agreed at the workshop. The sensitivity testing confirmed the decisions to fatally flaw four of the options.

It was recognised through the assessment that while Longburn was on the NIMT and had land zoned NEIZ, there were a number of potential constraints associated with the proximity to the Manawatu River and associated flooding risk, the presence of ecological features and archaeological features that would be hard to avoid. There was also the potential that the Freight Hub could impact on PNCC's future land use planning strategies that included provision for future residential development.

Following this analysis, a short list of five area options using the master plan layout was assessed .and then a short list of three sites were identified and assessed also using the master plan layout. as shown in Figure 10-3. The process followed at this stage and the matters considered are outlined in more detail the summary report on the MCA process in Appendix F.

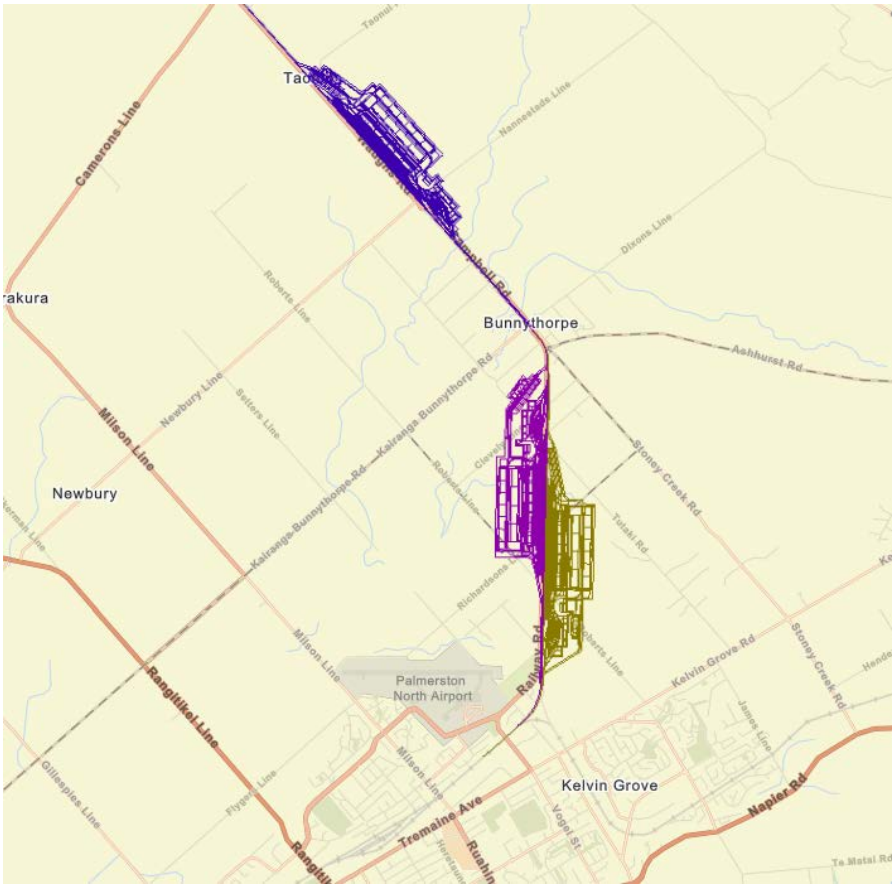


Figure 10-3 Short Listed Options

In relation to the three short-listed options, technical assessments and scoring was undertaken for each of the three options and a workshop was held for specialists to present and discuss their assessments. The workshop participants reviewed the weightings that were applied to the criteria in the second workshop and decided on any alterations that were required to the weightings because of more detailed information and increased confidence in the information available. Weightings were applied to each of the criteria. As a result of the assessments, scoring, weighting and further sensitivity testing, a preferred site was identified being – Site 3.

The score difference between Site 3 and 4 was not significant however Site 3 was selected as the preferred site from a technical perspective because:

- it scored the highest in relation to the criteria relating to Strategic Fit, because the productive use of the land is compromised by the current partial industrial zoning, the site adjoins existing urban area and is therefore likely to meet National Policy Statement for Highly Productive Land criteria to support urban expansion; the use of the land for a Freight Hub is compatible with adjoining land uses to south, noting however, that the northern extent of the site is adjacent to residentially zoned land and the township of Bunnythorpe; the land was brought into the city to provide for industrial expansion; part of the site is already zoned North East Industrial which provides for activities associated with Freight Hubs; there is potential for the balance of the site to be rezoned;
- connectivity (as it best integrated with what was understood about the Palmerston North Integrated Transport Initiative (PNITI); and
- economics (the diverted Railway Road could serve both traffic between Bunnythorpe and Palmerston North as well as the Freight Hub.

It is noted that in terms of the Rail criteria Sites 3 scored slightly ahead of Site 4. From a rail perspective, Site 3 had high benefits because of its proximity to the Airport, as well as the NEIZ and potential customers. The change to Railway Road was also considered to better accommodate the Freight Hub and through freight activities.

The stakeholders listed in section 7.4 provided input at the workshops and Iwi were consulted by KiwiRail in a parallel process and attended several workshops as outlined in the MCA report in Appendix F.

It is noted in relation to iwi that Rangitāne ki Manawatū has provided KiwiRail with a report on the long list of options and options 3 and 4 came through as preferred while Ngāti Kauwhata had indicated a preference for Site 4.

10.2.3 Stage 2- Site Layout

Having selected its preferred site location, KiwiRail then considered the potential indicative layout of the site. This phase involved:

- developing four different site layout options.
- assessing the rail performance and environmental impacts of the different site layout options; and
- identifying a layout option to proceed to further analysis in the next stage (assessment of effects).

Initially, four site layout options were developed by Stantec for KiwiRail's consideration - two different options with two additional options where the yard was flipped on the east/west axis. These options were based on technical rail requirements that fulfil the vision of the Master Plan.

KiwiRail reviewed these initial options and advised that all four layouts were suitable for its operations as they addressed key health and safety and environmental concerns for the Freight Hub. In all four options, the maintenance, operations, and Container Terminal area (the areas that tend to represent the biggest risk for contamination and spillages) were away from watercourses and fuel tanks had retention basins.

KiwiRail preferred options where areas, such as the Container Terminal area and the operations area (arrival/departure and marshalling), were located further away from Bunnythorpe due to potential noise/vibration, lighting, and emissions effects. It was considered that these options were less likely to result in constraints being imposed on KiwiRail's operations where they were located further away from Bunnythorpe. KiwiRail also considered that as log movement/loading as well as arrival/departure and marshalling areas often create dust, especially in dry conditions, the options with these activities separated from freight forwarding facilities and located as far as possible from residential areas were preferred.

Given these operational preferences, one of the initial site layout options was discarded and KiwiRail suggested further changes to the remaining three site layouts to address concerns regarding safety and level of service. In addition, changes were made to reduce the potential impact on the PNCC water bore at Roberts Line, following feedback from PNCC. After considering the remaining site layout options with the changes and feedback incorporated, two options were selected for a high-level environmental assessment as these were considered to best meet KiwiRail's operational requirements and objectives for the NoR.

The two layouts are shown in Figure 10-4 and Figure 10-5. Layout G2 (Figure 10-4 below) locates the marshalling yard and container terminal to the south and the log yard and workshop to the north. Layout G2M (Figure 10-5) locates the marshalling yard and container terminal to the north and the log yard and workshop to the south. The site layouts are indicative concept designs which will be developed further through detailed design.

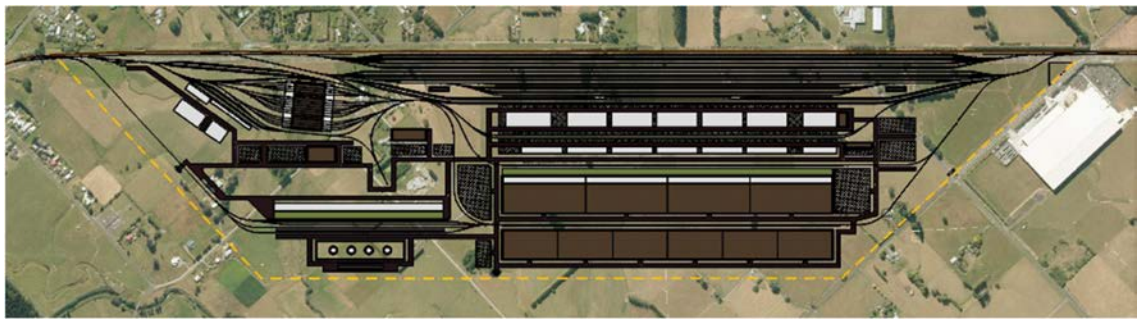


Figure 10-4 Layout G2

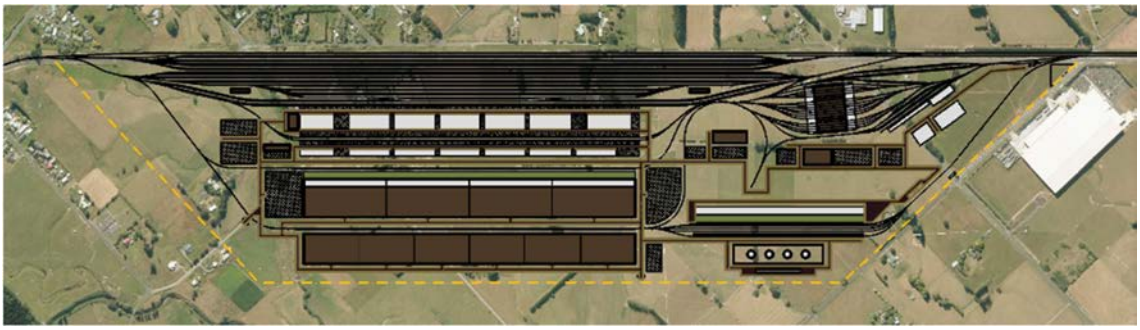


Figure 10-5 Layout G2M

Noise, landscape, and stormwater matters were also considered in respect of each site layout option to assist KiwiRail in determining the preferred site layout.

In determining the preferred site layout, KiwiRail considered issues relating to the elevation of the yard (and associated earthworks) as there was a need to provide a consistent level across the yard. As part of this consideration KiwiRail used a 50m yard elevation to consider the yard layout feasibility with the focus on:

- stage 1 arrival/departures.
- longer term NIMT connection requirement.
- bridge height risks – in particular, hydraulics heights for any potential future NIMT line improvements (which would not be part of the NoR).
- integration of road connections; and
- high level integration with landscape, flooding, and stormwater.

KiwiRail also considered the nature of rail manoeuvres on the yard and to the NIMT.

KiwiRail determined that Layout G2 was the preferred layout noting that Layout G2 had the noisier activities(Container Terminal and the operations area (arrival/ departure and marshalling) located further away from Bunnythorpe and the networks depots and maintenance facilities, which would have a reduced impact on residents were located at the northern end of the layout. As they generally have more standard hours, networks depots and maintenance facilities can be located closer to residential areas and will have a reduced impact when compared with the other yard activities.

By adopting this approach, this layout was less likely to result in constraints being imposed on KiwiRail's operations where they were located further away from Bunnythorpe. KiwiRail also considered that as log movement/loading (as well as arrival/departure and marshalling areas) often create dust, especially in dry conditions, the options with these activities separated from freight forwarding facilities and located as far as possible from residential areas were preferred.

Layout G2 was preferred in terms of addressing potential adverse landscape and visual and noise effects. Layout G2M was the preferred layout from a flooding and stormwater perspective as there are greater opportunities for on-site flood flow detention offered by Layout G2M, and that this would reduce need for land outside the identified site layout (off-site) for additional land

10.2.4 Stage 3-Spatial Extent

As well as the key rail operational components, the Freight Hub requires new road connections, areas for stormwater management and land for noise mitigation as these are key requirements to enable the Freight Hub to operate.

Noise, traffic and flood modelling, an assessment of the rail operational requirements as well as a review of council information and site visits provided an initial understanding of these additional operational requirements. Having received input from relevant technical advisors, KiwiRail considered different arrangements as part of identifying the Freight Hub's spatial extent.

The designation includes provision for a new road to replace the function of Railway Road around the western side of the Freight Hub which is required to provide access to the Freight Hub. It will also serve as an alternative public access once the relevant section of Railway Road is closed. The new road on the perimeter of the Freight Hub was selected following consideration of different roading arrangements that included:

- a connection from the north western corner of the Freight Hub site out to Kairanga-Bunnythorpe road. This option could tie into a future Western by-pass of Bunnythorpe as indicated in Waka Kotahi's work

on the ring road routes, however lack of detail of this future route placed KiwiRail waiting for a decision on the confirmed future route for the Ring Road.
- Using Roberts Line although this made access to two of the Freight Hub's entry points problematic without further roading being provided.

As the two options above also used the section of Kairanga – Bunnythorpe Road that contains two narrow and weight restricted Bridges (Mangaone and Jack's Creek) and there is currently no specific programme to replace or upgrade these structures, KiwiRail determined that that neither route could not be used until upgrades were completed.

The outcome is the provision made in the indicative layout contained in the landscape plan (Appendix C) for the new perimeter road from Roberts Line to Railway Road and provision made for the works to upgrade Roberts Line in the Designation Extent in Appendix 1 to the NoR.

The Designation Extent also includes provision for two areas for stormwater ponds. Different locations for the ponds were considered following the volume required to be stored being determined. These included:

- Opportunities within the Freight Hub site. Although there will be some land available near Roberts Line/Richardson Road it was apparent that there was not enough available land within the operational site to provide the total volume of detention storage required.
- Providing storage on the stream channel upstream of the site - these provided technical issues related to their construction, the risk of flooding affecting other properties and adverse ecological effects and problems in treating the stormwater.

Providing storage downstream - was selected as the preferred option. However to keep the storage areas out of the flood plain it was necessary to provide two areas that were sized to store the required volume and enable the treatment of the water to a standard that will meet regional plan rules related to any discharge.

10.3 The Necessity of the Work and the Designation

Section 171(1)(c) requires consideration as to whether the work and the designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought.

KiwiRail's objectives in developing a Freight Hub in or near Palmerston North on the NIMT to:

- increase its operational capacity to efficiently accommodate projected regional and national freight growth and support wider regional development.
- enable rail to be integrated with, and connected to, other transport modes and networks; and
- improve the resilience of the regional and national freight transport system over time.

10.3.1 The Necessity of the Work to Achieve the Objectives

For the reasons outline below, the construction and operation of the Freight Hub is reasonably necessary to achieve the project objectives.

10.3.1.1 Ability to increase operational capacity

The Existing Freight Yard is constrained by the development that has occurred around it and by its reliance on Tremaine Avenue for access. The activity has outgrown the site and there is no real prospect of being able to efficiently redevelop the Existing Freight Yard to meet the anticipated growth in rail freight on the network from regional and domestic sources or the increased length of trains.

The Arrivals/Departure yard at the Existing Freight Yard consists of 5 tracks in the order of 900 m. The existing Marshalling Yard uses 7 tracks for marshalling comprising of about 4,000 metres of capacity and an average track length of about 560 metres. The area of the existing container island is about 12,000 square metres, with 300 metres of serviceable track on along both sides of the container area. At peak times particularly seasonal peaks the Existing Freight Yard is under pressure generating the need for more movement of wagons to construct and reconfigure trains.

While existing terminals connected to Palmerston North have restricted capacity to handle more than the existing 900-metre-long trains, it is not possible for KiwiRail to lengthen trains in the Existing Freight Yard without increasing the amount of handling and movements of trains while at the yard and using the NIMT itself to assist in the assembly of trains. This increases the length of time that specific freight is stationary and not moving between origin and destination. The time taken makes the use of rail inefficient and unattractive to those waiting for and sending the freight. In addition, the increase in the number of

movements increases the noise levels, impacting on those living and working around the Existing Freight Yard. Further, the use of the NIMT to assemble trains has impacts on the network.

Considering these existing constraints, the Freight Hub (which proposes to relocate and expand the existing operations on a new site is reasonably necessary to ensure that KiwiRail can increase its operational capacity.

10.3.1.2 Integrating transport modes and supporting regional development

One of the drivers for Waka Kotahi's Palmerston North Integrated Transport Improvements project (Regional Freight Ring Road) is to assist in building the region's resilience and provide a safer, more effective connection between some of the region's key industrial areas and improve access and safety for pedestrians and cyclists. Tremaine Avenue is a key arterial route experiencing congestion at peak times. This congestion is related to the location of the Existing Freight Yard and this has negative impacts on freight distribution in Palmerston North due to increased travel times and cost, but it also has social impacts through reduced safety, increased driver frustration and increased burden on lower quality roads used as alternative routes. In addition to recognising that the region is developing as a key freight and distribution Freight Hub in NZ due to its strategic and centralised geographic location; and the economic importance of the NIMT; the Regional Land Transport Plan (RLTP) 2015-25 recognises that the development of a Regional Freight Ring Road is vital to unlocking the region's distribution and logistics potential and reducing large commercial traffic volumes on local roads.

While details have not yet been confirmed about the future roading alignments, KiwiRail is working closely with Waka Kotahi and other stakeholders to integrate the Freight Hub with planned future roading network upgrades. In addition, Waka Kotahi, HRC and PNCC were kept informed of potential locations of the Freight Hub during the MCA process to ensure that the maximum benefits of both projects were able to be realised. The parties continued to work together through the development of the NoR and when the final route is announced KiwiRail will continue to work with the parties.

The Freight Hub will provide improved facilities for the marshalling of through traffic together with enhanced opportunities for the transfer of freight between rail and road. The Freight Hub 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. While goods that are shipped by rail are not likely to be moved by air proximity to the Airport means that freight forwarders located in the Freight Hub or in the NIEZ have the benefit of air, rail and road for moving their freight and the area will become more attractive to companies to locate in the region as the combination of all modes in one location creates both greater opportunities and, resilience for business continuance.

The Economic Assessment notes that there will be 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. The Freight Hub with its improved facilities should assist in encouraging a switch of traffic to rail and mean that the Freight Hub will become a key link in the distribution chain for goods moving into and out of the region, and have an important role to play in supporting and enhancing regional economic development both in Palmerston North and the wider region.

10.3.1.3 Improving the resilience of the transport system

The Freight Hub and associated infrastructure will assist in minimising disruptions to the wider network and as a result improve the broader network in terms of ensuring safe and efficient provision of freight meaning that there is increased reliability and therefore customers will feel rail is an attractive option. Safer and more efficient Hub operations will improve efficiencies for onward freight modes such as ferries and trucks through more on time arrivals and contribute towards making freight logistics regionally more resilient through greater reliability. As noted in the Economic Assessment (Technical Report K) the new Freight Hub will allow improvements to the costs and quality of the rail services using this and should therefore encourage a switch of traffic to rail.

The change to 1,500m trains has the benefit of reducing KiwiRail's operating costs by aggregating shipments to make the movement of freight by rail to those locations more efficient and more attractive to customers. Longer trains will reduce the number of trains going north in total and in turn has the potential of reducing heavy truck traffic using the main road routes north of Palmerston North.

The benefits of providing for longer trains are related to the reduction in the use of carbon, reduction in freight costs and improved road safety as set out below:

- A 50-foot container wagon will handle 2 TEU's (a 60-foot wagon will handle 3 TEU's.)

Analysis of the rail freight traffic highlights that:

- Traffic between Palmerston North and Auckland comprises mostly containers and box wagons.
- Traffic between Palmerston North and Tauranga is primarily containers.

A 1500 metres long container train involving 83, 50-foot wagons could conservatively involve 166 containers. A 900 metres long container train could involve 100 containers.

The addition of 600 metres in length for a single train could result in 33 -66 container trucks fewer on the road network between Palmerston North and for instance Hamilton.

The size and layout of the Freight Hub has been planned to provide for more efficient movement of a range of commodities. For example, the proposed larger container terminal allows the ability to load up to 900m long container trains while unloading separate trains simultaneously. This also provides the ability to arrive and depart 900-metre-long unit trains directly from the Container Terminal yard – reducing demand on the Marshalling Yard. The outcome is more wagons can be moved in fewer moves which has the potential to reduce the movement of wagons from the number currently required at the Existing Freight Yard.

Provision for the longer trains in the area occupied by the Freight Hub is not in itself going to result in the benefits outlined above as other improvements in the network are needed. The improvements are understood to be:

- more efficient and higher horsepower locomotives
- new wagons will have larger carrying capacity,
- improved couplings between wagons/locomotives, roughly doubling the trailing load of future trains

The improvements are expected to be in place within the 30-year horizon in which the Freight Hub is anticipated to be fully developed.

10.3.2 The Necessity of the Designation to Achieve KiwiRail's Objectives

In determining the most effective way to achieve its objectives, alternative methods potentially available to KiwiRail have been considered. Options available include applying for land use consents; lodging a private plan change, or the use of KiwiRail's requiring authority status to seek a designation on the land as proposed.

10.3.2.1 Designation

The RMA specifically anticipates and provides for large infrastructure projects of this nature, which cross multiple zoning and land ownership boundaries, though the designation provisions set out in sections 166 through to 186. KiwiRail as a requiring authority is enabled through these provisions to take the required measures to achieve the interim and long-term protection of the land for a future freight hub.

KiwiRail designates its railway corridor throughout New Zealand including freight depots and yards.

KiwiRail needs to secure the land for the project to provide certainty for the Freight Hub to proceed. The first step to provide the required certainty is to designate the land for the Freight Hub. The designation process enables the land required to be safeguarded from future incompatible industrial and rural-residential development which may hinder or prevent the works.

PNCC must show the designation in its district plan once it is effective and this will mean that anyone purchasing land will see the designation and understand the future use of the land. Before the designation is effective and shown in the District Plan, PNCC must indicate by way of a Land Information Memorandum the existence of the designation on the directly affected land.

An NoR is deemed to be most appropriate method for KiwiRail as the designation will:

- safeguard the land from incompatible development
- provide certainty for KiwiRail that the land can be developed for the intended purpose
- indicate the future use of the land to the public and the community

The designation is reasonably necessary to achieve the objectives of KiwiRail.

10.3.2.2 Other Methods

The land is subject to two different zones (industrial and rural) and while the industrial zone would provide for many of the activities anticipated in the Freight Hub, the rural zone does not. Numerous separate land

use consents are likely to be required for the different aspects of the project. This would not be an efficient process. A plan change could result in the Freight Hub site being appropriately zoned to enable the activities. However, as KiwiRail does not currently own the land, the land could be developed for other activities in the interim, leading to land use inefficiencies.

10.4 Any Other Matter

10.4.1 Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)applies to land where an activity described in the Ministry for the Environment's Hazard Activities and Industries List (HAIL) is being, has been undertaken or it is more than likely such an activity or industry has been undertaken. The NESCS only applies under any of the following conditions for properties identified under HAIL as having potential for contamination:

1. Removal of fuel storage system(s).
2. Soil sampling.
3. Earthworks activities / soil disturbance.
4. Subdivision of land.
5. Change of land-use.

Of the specific activities which trigger the NESCS there are a number that would be expected to trigger a resource consent as they are not able to meet permitted standards. These include:

- Where soil disturbance is >25 m^3 (in-situ volume) per 500m2 of land.
- Where soil removal is >5 m3 (in-situ volume) per 500m^2 of land per year. Note that the soil must be disposed of at a facility authorised to receive the material.
- The period of soil disturbance is greater than two months.
- Subdivision of land or change of land use

10.4.2 Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (Freshwater NES)

The Freshwater NES took effect on 3 September 2020. Relevant to this Freight Hub, the Freshwater NES regulates specific activities that includes Structures that affect fish passage and reclamation of rivers (would include stream realignments). The Freshwater NES does not contain objectives or policies but includes 'rules' permitting or requiring resource consent for specific activities.

The Freshwater NES also has requirements limiting when consents can be granted, and specific conditions that must be included on consents for some activities (e.g. structures in watercourses).

At this point, it is expected that resource consent will be required under both the Freshwater NES and the HRC for works in the streams. These will be sought separately as part of a future consenting process.

10.4.3 Government Policy Statement 2021

The Minister of Transport released the most recent Government Policy Statement on land transport 2021/22–2030/31 (GPS) in September 2020.

GPS 2021 implements the findings of the Future of Rail review. The purpose of this activity class is to implement the New Zealand Rail Plan by funding approved activities from the RNIP (prepared by KiwiRail). The priority is to ensure a reliable and resilient national rail network. It provides funding to KiwiRail to maintain and renew the national rail freight network.

10.4.4 Statutory Acknowledgements

Statutory Acknowledgements are statements made by Iwi and Hapū about a particular area of crown owned land and wetlands. Commonly there is a cultural, spiritual, and traditional association with the land.

As set out in Part 2 of the RMA, local authorities are required to recognize the relationship of Māoritanga, kaitiakitanga and Te Tiriti O Waitangi, and so these statements help consent authorities identify areas of importance, and offer Māori participation and representation throughout relevant resource management processes.

In the subject area of Aotea/Whanganui District the following Statutory Acknowledgements are relevant following a review of Horizons Regional Council's web site[32]:

- Ngaa Rauru Kiitahi Statutory Acknowledgement Ngāti Apa (North Island) Statutory Acknowledgement
- Ngāti Rangi Statutory Acknowledgement
- Rangitāne o Manawatu Statutory Acknowledgement
- Rangitāne o Wairarapa and Rangitāne o Tamaki nui-ā-Rua Statutory Acknowledgement
- Ngāti Tūwharetoa Statutory Acknowledgement

From a review of each of the above documents and contacting the council, acknowledgements 1 and 3 appear to be closest to the area of the Freight Hub, although they do not directly impact this area.

It is recognised that Māori commonly acknowledge land as indivisible between areas (i.e. oceans, rivers, flat land, mountains), and may not accept the concept of land having specific boundaries. In saying this, although there may be no statutory acknowledgements directly impacting the area, it does not mean Māoritanga is unaffected. In addition, some historical sites may not be acknowledged overtly. Continuing to include relevant Iwi and Hapū in conversations will help to recognise such areas.

10.5 RMA Part 2

The assessment of the project is subject to Part 2 of the RMA, which sets out the principles (Section 6-8) of the RMA and finally the purpose (Section 5).

10.5.1 Section 6 Assessment

An assessment of the project against the RMA's section 6, Matters of National Importance, is provided below

Matter	Comment
(a)the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development	The Landscape and Visual Assessment concluded that the existing stream tributaries are highly modified although following a naturalised path, and the development will culvert a significant length removing future options for natural character restoration. It considers that these effects have been mitigated and here are benefits from the naturalised channel within the Freight Hub and the proposed stormwater ponds. The other benefits are ecological and natural character gains due to the proposed naturalisation of the form of the water bodies, broader scale wetland and River Plain, kahikatea forest dominant, type planting and the potential for recreation paths.
(b)the protection of outstanding natural features and landscapes from inappropriate subdivision, use, *and development*	Having considered the operative Horizons Regional Council One Plan (One Plan) and any areas identified as outstanding natural features and landscapes (ONFL) in proximity to the Freight Hub and Special Amenity values (SAL's) in the One Plan and the Palmerston North District Plan or the Manawatū District Plan (MDP) it is confirmed that there are no outstanding natural features and landscapes affected by the Freight Hub.
(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna	Having reviewed the operative Horizons Regional Council One Plan (One Plan) it is confirmed that the Freight Hub will not affect any significant indigenous vegetation and

[32] https://www.horizons.govt.nz/about-our-region-and-council/iwi-and-hapu/statutory-acknowledgements

Matter	Comment
	significant habitats of indigenous fauna in close proximity.
(d) the maintenance and enhancement of public access to and along the coastal marine area, *lakes, and rivers*	The land is currently held in private ownership and there is no public access along any of the watercourses. The Landscape Plan indicates potential recreational paths which could link to opportunities for the Mangaone Stream.
(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, *. waahi tapu, and other taonga*	Consultation with tangata whenua has been undertaken. The relationship of Maori and the culture and traditions is recognised and will be developed further through ongoing engagement with iwi who are participating in the Freight Hub project on an ongoing basis. An accidental discovery protocol will be used to ensure there are appropriate processes in place in the event archaeological sites are discovered during initial site investigations including specific procedures in the event that any Tangata or taonga are discovered.
(f) the protection of historic heritage from inappropriate subdivision, use, and development	As outlined in the Archaeological Assessment there are no known sites or features or any scheduled features under the District Plan. Relevant archaeological authorities under the archaeological provisions of the HNZPTA will be sought as required, before works commence.
(g) the protection of protected *customary rights*	The Freight Hub is not expected to affect any protected customary rights.
(h) the management of significant risks from natural hazards.	The risks related to a seismic event and from flood have been considered as part of the initial work in determining the location and layout of the Freight Hub. A conservative approach has been adopted to ensure any flood risks for those upstream and downstream of the site have been considered and can be avoided or remedied.

10.5.2 Section 7 Assessment

An assessment of the Freight Hub against the relevant other matters from the RMA's section 7 is provided below.

Matter	Comment
a) kaitiakitanga *(aa) the ethic of stewardship*	In recognising the role of mana whenua as kaitiaki, consultation has been undertaken with respect to the Freight Hub (refer to section 7 of the AEE). Engagement with mana whenua will be ongoing and a mana whenua engagement framework has been proposed

Matter	Comment
	to recognise and provide for mana whenua values affected by the Freight Hub.
(b) the efficient use and development of natural and physical resources	The Freight Hub is an efficient use of the land and resources as it will provide for development of a Freight Hub that will support the removal of freight traffic from the road with related benefits described in section 9 of the AEE including enabling the Existing Freight Yard to be redeveloped and aligning with the council's strategic plans in terms of providing for large scale industry in the north east of the city
(c) the maintenance and enhancement of amenity values *(f) maintenance and enhancement of the quality of the environment*	While the change in land use will result in initial reduction in amenity values for the immediate area, the landscaping with the increase in indigenous biodiversity and stormwater management proposed will result in long term enhancement of the quality of the environment
(d) intrinsic values of ecosystems	Although the Freight Hub involves removal of vegetation and piping and diversion of watercourses, the ecologist has assessed the majority of it as being of low ecological value as outlined in Technical Report F.
(i)the effects of climate change	There are existing issues with the capacity of culverts under the NIMT and Railway Road that cause upstream flooding. These culverts were not designed with climate change in mind. The project has and will continue to consider the effects of climate change as it provides the opportunity to reduce upstream flood effects in future climate change events.

10.5.3 Section 8 Assessment

Section 8 of the RMA requires those exercising powers or functions under the RMA to consider the principles of the Treaty of Waitangi. A core principle of the Treaty is partnership. KiwiRail is committed to engaging with Mana Whenua in relation to the design and development of the Freight Hub.

10.5.4 Section 5 Assessment

Section 9 of this AEE outlines the various effects of the Freight Hub, including those generated during construction as well as the ongoing effects, including positive effects, which will enable people and communities to provide for their wellbeing and health and safety.

Included with the NoR are a range of proposed conditions which set out the various mitigation measures KiwiRail will implement to avoid, remedy, or mitigate any adverse effects on the environment because of the Freight Hub.

The assessments above, also conclude that the Freight Hub project is consistent with the relevant matters of national importance, other matters, and the Treaty of Waitangi, in accordance with Part 2 of the RMA.

Taking the above into account it is considered the Freight Hub will promote the sustainable management purpose of the RMA.

11. Conditions

Proposed Conditions are contained in Appendix 3 to the NoR which set out the measures KiwiRail will implement to avoid, remedy, or mitigate any adverse effects on the environment because of the Freight Hub.

12. Other Statutory Authorisations

Many of the recommendations in the Technical Reports relate to future actions that are required because of other processes that KiwiRail must observe, such as:

- Obtaining relevant authorities from Department of Conservation under the Wildlife Act 1953 in relation to the management of lizards.
- Future regional consents - in relation to structures in streams, diversions, stormwater discharge and earthworks.
- Compliance with codes of practice and regulations under the Hazardous Substances and New Organisms Act 1996 and the Health and Safety at Work Act 2015 and KiwiRail's own standards in relation to these requirements.
- Obtaining relevant authorities from Heritage New Zealand Pouhere Taonga under the Heritage New Zealand Pouhere Taonga Act 2014

KiwiRail is required to obtain relevant statutory approvals before it can proceed with development of the Freight Hub.

13. Conclusion

This NoR served by KiwiRail, seeks to designate the land, and provide for the Works associated with the construction, operation, and ongoing maintenance of the new Regional Freight Hub.

The NoR is based on concept design, indicative landscaping, indicative operation outline and likely Construction Methodology. Assessing these has enabled the identification of an "envelope" of actual and potential effects. In determining this envelope and assessing the effects the works, a conservative or worst-case approach has been adopted in terms of the activities to be undertaken on the land.

The NoR provides for the construction of an operating intermodal freight hub over approximately 130 ha connected to the NIMT and the northern and southern end of the hub; forming of stormwater ponds downstream of the freight hub to manage stormwater discharged from new impervious surfaces , provision of road access to the freight hub and noise mitigation around the freight hub boundaries and where necessary beyond this immediate area. It also provides for the works associated with culverting a significant watercourse under the freight hub and the relocation of the NIMT with changes to alignment both horizontal and vertical. There are also consequential changes to access arrangements for specific properties located on the eastern side of the NIMT affected by the closure of Railway Road.

It also provides for the operation of the intermodal freight hub on a 24/7 basis with the implementation of appropriate noise and vibration management regime and the provision of an upgraded road network that will require KiwiRail to integrate its works with those planned by PNCC and Waka Kotahi in the wider area.

The Land Requirement Plans included with the NoR indicate the area of land required both temporarily and permanently. The area includes areas anticipated to be required to provide for the stormwater and water flowing through and under the intermodal freight hub to discharge to existing streams. It is anticipated that these areas will also include ecological, noise and visual amenity mitigation planting and landscaping works and the provision of possible ancillary activities and structures typically associated with the operation of roads and paths for cyclists and pedestrians.

The details of the works and structures will be determined through future investigations , including site investigations (for geotech and potential soil contamination) hydraulic and noise modelling and detailed design processes required to obtain regional consents and develop the various management plans required in the proposed conditions submitted with the NOR. There will be severance effects associated with closing Railway Road and this has been a concern of many of those in the community consulted. When the project is completed an alternative, clear, logical route will be available.

Landscape effects associated with the altered landform and introduction of new structures and activities; increased stormwater runoff due to the new impermeable surfaces; potential effects of the Freight Hub being in flood prone areas; and effects (movement, safety and behavioural) associated with the change

in activity . The adverse effects are primarily associated with the construction of the freight hub, particularly in relation to the change in vertical level of the land and associated earthworks. They are also associated with the change in activity from the level of intensity and character which is currently rural to a large-scale industrial activity. In this regard it is noted that around 1/3 of the area subject to this NoR is already zoned North East Industrial Zone.

Matters that are considered relevant to the assessment of the effects of the works enabled through the NoR have been addressed within this AEE and the appended technical reports.

As outlined in this AEE, these effects can be managed through the detailed design and mitigated such that overall, the NoR meets the purpose and principles of the RMA.

There are several local and wider regional benefits from the construction and operation of the Freight Hub. These range from increasing employment opportunities and contributing directly to economic growth in Palmerston North and the wider region to reducing carbon emissions by reducing reliance on roads for the transport of freight as a greater volume of freight will be moved by rail. There will also be improved transport safety benefits related to removing long distance freight movements on roads, as well as localised benefits in the immediate area of the Freight Hub.

The relocation of freight operations from the Existing Freight Yard to the north east of the city will support PNCCs strategic plans.

The relocation of the NIMT and the piping of water under or through the Freight Hub will also reduce the potential flooding risk to upstream properties and the proposed stormwater management approach will potentially have consequential ecological improvements.

It is considered that the mitigations proposed, and the wider beneficial effects will in the longer term counter the immediate effects of the construction process and changes in amenity.

It is considered that subject to provision of the detailed OPW, management plans required in conditions and regional consents the NOR is consistent with the relevant planning provisions. As set out in the AEE adequate consideration has been given to alternative site locations and methods of consenting. It is identified that the highest adverse effects are on the amenity values of the community, but it is considered that the mitigation proposed will address this effect in the long term.

It is considered that the Work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought and overall it is considered that enabling the construction, operation and maintenance of the Freight Hub will promote the purpose and principles of the RMA.

Auckland

Level 3 Stantec House, 111 Carlton Gore Road
Newmarket, Auckland 1023
PO Box 13-052, Armagh
Christchurch 8141
Tel +64 9 580 4500

Please visit **www.stantec.com** to learn more about how Stantec design with community in mind.

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