



## Wiri to Quay Park Project

Notice of Requirement

IA233800-NP-RPT-0001 | C

July 2020

KiwiRail Holdings Limited



## Project Name

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A	5/6/2020	First Draft	TH TM	LL	LL	
B	9/6/2020	Draft for Client Review	TH TM	LL	LL/MM	PW
C	5/7/2020	Release Version	TH TM	LL/KM	LL	PW

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## Glossary of terms and abbreviations

Term/abbreviation	Definition
AEE	Assessment of Environmental Effects
AT	Auckland Transport
Auckland Plan	The Auckland Plan 2050
AUP(OP)	Auckland Unitary Plan (Operative in Part)
CMDHB	Counties Manukau District Health Board
CNVMP	Construction and Vibration Management Plan
CRL	City Rail Link
CTMP	Construction Traffic Management Plan
EMU	Electric Motor Unit
ESCP	Erosion and Sediment Control Plan
Flood Plain	Area projected to flood during a 1 in 100 AEP Event
GD01	Auckland Council Guidance Document 01 <i>"Stormwater Management Devices in the Auckland Region"</i>
GD05	Auckland Council Guidance Document 05 <i>"Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region"</i>
HNZ	Heritage New Zealand Pouhere Taonga
KiwiRail	KiwiRail Holdings Limited
NIMT	North Island Main Trunk Line
NoR	Notice of Requirement
NPS-FM	National Policy Statement for Freshwater Management
NPS-UDC	National Policy Statement on Urban Development Capacity
NZTA	New Zealand Transport Agency/Waka Kotahi
OLE	Overhead Line Equipment
OLFP	Overland Land Flow Path
P2P	Papakura to Pukekohe Project
POA	Ports of Auckland Limited
PWA	Public Works Act
RMA	Resource Management Act 1991
SH20	State Highway 20
TEU	Twenty-Foot Equivalent
TP108	Auckland Council Technical Publication 108 <i>"Guidelines for stormwater runoff modelling in the Auckland Region"</i>
Vodafone	Vodafone New Zealand
W2QP	Wiri to Quay Park Project
Watercare	Watercare Services Limited

## Executive Summary

KiwiRail Holdings Limited (KiwiRail), is the State-Owned Enterprise responsible for the construction, maintenance and operation of New Zealand's rail network. KiwiRail is currently undertaking significant investment to improve Auckland's rail network. This investment is driven by the importance of heavy rail to delivering a quality compact urban form for Auckland, to meet demands for additional passenger service capacity and to address growth in freight volumes.

Heavy rail is critical infrastructure that is recognised for its ability to efficiently and safely transport large numbers of passengers and significant volumes of freight. Investment in Auckland's rail network is needed to provide for current and forecasted population growth (particularly in south Auckland), support Auckland's economy and contribute to a reduction in greenhouse gas emissions. The benefits of heavy rail are recognised by strategic, spatial and statutory planning documents, including the Auckland Plan 2050 and the Auckland Unitary Plan (Operative in Part) (AUP(OP)).

This assessment of environment effects (AEE) supports the Notice of Requirement (NoR) to alter AUP(OP) designation 6302, thereby enabling the Wiri to Quay Park Project (W2QP). This NoR responds to KiwiRail's need to acquire and use land that is adjacent to, but outside of the existing corridor. KiwiRail requires this land for construction activities (e.g. access and laydown areas) and permanent occupation by rail infrastructure (e.g. retaining walls, tracks, signals). The alteration to designation includes land located along the existing designated rail corridor at Middlemore Station, Mangere East, Papatoetoe Station, Bridge Street/Puhinui Station, Manukau and Wiri. The NoR also seeks to designate an area that runs below State Highway 20 (SH20), which is currently not shown as being designated (but forms part of the rail corridor) due to a previous mapping error.

Specifically, the alteration to designation will support the delivery of works associated with W2QP, including rail improvements at Quay Park, Westfield Junction, Wiri Junction and between Middlemore Station and Wiri. These works have been developed into four distinct packages of works located between Quay Park and Wiri Junction which are subject to individual resource consent applications and Outline Plans. The additional land required by this NoR is required to provide for the delivery of Package 2 (as described in Section 1) and the assessment is therefore limited to those environmental effects associated with the construction and operation of Package 2 outside the existing rail designation (i.e. Middlemore to Wiri Junction.)<sup>1</sup>. This NoR is seeking an alteration to the existing designation enabling and the acquisition of 3.53 ha of land (1.38 ha permanent and 2.15 ha temporary) outside the existing designated rail corridor to enable the Package 2 works.

During the development of W2QP and in particular this NoR, KiwiRail has engaged with a range of stakeholders, including mana whenua, the Māngere-Ōtāhuhu and Ōtara-Papatoetoe local boards, affected landowners, the Counties Manukau District Health Board (CMDHB) and Auckland Transport (AT). This engagement is ongoing and will continue as design progresses and as additional statutory approvals are sought.

This NoR addresses the statutory requirements of the RMA, including an assessment of alternatives, a review of relevant Auckland Council strategic and statutory planning documents, National Policy Statements and an assessment of the project's environmental effects. The AEE is supported by a range of technical assessments including noise and vibration, flooding, historic heritage, arboricultural, traffic and contamination. The AEE concludes that the project works will have no more than minor adverse effects overall, which can be largely managed with the implementation of good practice construction management measures. This AEE also confirms that the works are consistent with section 171 and Part 2 of the RMA.

Given the above factors, it is considered that Auckland Council can recommend that KiwiRail confirm the alteration to designation 6302, as proposed by this NoR.

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<sup>1</sup> As noted in Section 1, Package 2 involves the works between Middlemore Station and Wiri Junction. It does not include the works at Wiri Junction, Westfield Junction or Quay Park.

## PART A: NOTICE OF REQUIREMENT

Pursuant to Section 168(1), (2) and Clause 4 of the First Schedule, Resource Management Act 1991

To: Auckland Council

### 1. Notice of Requirement

KiwiRail Holdings Limited gives notice of requirement (NoR) to alter their designation referenced as follows in the Auckland Unitary Plan: Operative in Part:

*ID:6302 - North Island Main Trunk (NIMT) Railway Line from Buckland to Britomart Station, Auckland Central.*

A copy of the existing designation is provided as Appendix A.

### 2. The sites to which the NoR applies

The affected sites that relate to this NoR are detailed in Table 1 and the record of titles are provided in Appendix B and the land requirement plans for the Project are provided at Appendix C.

The NoR provides for an alteration to the existing designation and the addition of 3.53ha of land to the rail corridor's current 175 ha footprint. Approximately 1.38 ha of this is permanently required with 2.15 ha required temporarily to support construction.

Table 1: Sites affected by the NoR

Property address	Legal Description	Type of Ownership	Temporary or Permanent Acquisition
64 Rosella Road, Mangere East	Lot 13 DP 19494	Private	Permanent (1,014 m <sup>2</sup> )
100 Hospital Road, Papatoetoe	Allotment 237 Parish of Manurewa, Part Lot 13 DP 2989	Public	Permanent (2624 m <sup>2</sup> ) Temporary (193 m <sup>2</sup> )
Road Reserve – Orakau Road	N/A	Public	Permanent (23 m <sup>2</sup> ) Temporary (40 m <sup>2</sup> )
18R Gordon Road, Papatoetoe	Lot 53 DP 20068, Pt Allot 36 Psh of Manurewa	Public	Temporary (2,274 m <sup>2</sup> )
1 Station Road, Papatoetoe	Lot 7 DP 111628	Private	Temporary (129 m <sup>2</sup> )
5 Station Road, Papatoetoe	Lot 6 DP 111628	Private	Permanent (717 m <sup>2</sup> )
9 Station Road, Papatoetoe	Lot 5 DP 111628	Private	Permanent (781 m <sup>2</sup> )

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Property address	Legal Description	Type of Ownership	Temporary or Permanent Acquisition
11 Station Road, Papatoetoe	Lot 4 DP 111628	Private	Temporary (139 m <sup>2</sup> )
15 Station Road, Papatoetoe	Lot 3 DP 111628	Private	Temporary (129 m <sup>2</sup> )
17 Station Road, Papatoetoe	Lot 2 DP 111628	Private	Temporary (116 m <sup>2</sup> )
19 Station Road, Papatoetoe	Lot 1 DP 111628	Private	Temporary (134 m <sup>2</sup> )
21R Station Road, Papatoetoe	Lot 9 DP 111628	Public	Temporary (52 m <sup>2</sup> )
12 Wyllie Road, Papatoetoe	Lot 1 DP 152288	Private	Permanent (1,165 m <sup>2</sup> ) Temporary (4,720 m <sup>2</sup> )
14 Wyllie Road, Papatoetoe	Pt Lot 1 P 136372	Private	Temporary (924 m <sup>2</sup> )
74D Kenderdine Road, Papatoetoe	Lot 5 DP 327717, ¼ SH Lot 6 DP 327717	Private	Temporary (41 m <sup>2</sup> )
76 Kenderdine Road, Papatoetoe	PT Lot 30 DP 16605	Private	Temporary (62 m <sup>2</sup> )
1/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 1 DP 80955		
2/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 2 DP 80955		
3/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 3 DP 80955		
4/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 4 DP 80955		
78 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Pt Lot 31 DP 16605	Private	Permanent (64 m <sup>2</sup> )
80 Kenderdine Road, Papatoetoe	Lot 1 DP 135948	Private	Permanent (63 m <sup>2</sup> )
1/80 Kenderdine Road, Papatoetoe	Lot 1 DP 135948, FLAT 1 DP 135948		
2/80 Kenderdine Road, Papatoetoe	Lot 1 DP 135948, FLAT 2 DP 135948		



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Property address	Legal Description	Type of Ownership	Temporary or Permanent Acquisition
3/80 Kenderdine Road, Papatoetoe	Lot 1 DP 135948, FLAT 3 DP 135948		
84 Kenderdine Road, Papatoetoe	Lot 1 DP 70381	Private	Temporary (97 m <sup>2</sup> )
1/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 1 DP 10238		
2/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 2 DP 10238		
3/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 3 DP 10238		
4/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 4 DP 10238		
5/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 5 DP 10238		
6/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 6 DP 10238		
7/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 7 DP 10238		
8/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 8 DP 10238		
9/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 8 DP 10238		
88 Kenderdine Road, Papatoetoe	Lot 2 DP 70381	Private	Permanent (103 m <sup>2</sup> )
90 Kenderdine Road Papatoetoe	Lot 34 DP 16605	Private	Temporary (103 m <sup>2</sup> )
1/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 1 DP 102388,		
2/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 2 DP 102388,		
3/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 3 DP 102388, CARPORT 3 DP 102388		

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Property address	Legal Description	Type of Ownership	Temporary or Permanent Acquisition
4/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 4 DP 102388,		
5/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 3 DP 102388, CARPORT 5 DP 102388		
6/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 6 DP 102388,		
7/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 7 DP 102388,		
8/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 8 DP 102388, CARPORT 8 DP 102388		
9/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 9 DP 102388,		
10/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 10 DP 102388,		
11/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 11 DP 102388, CARPORT 11 DP 102388		
92 Kenderdine Road, Papatoetoe	Lot 2 DP 82259	Private	Temporary(106 m <sup>2</sup> )
1/92 Kenderdine Road, Papatoetoe	Lot 2 DP 82259, FLAT 1 DP 89779, CARPORT 1 DP 89779	Private	Temporary (106 m <sup>2</sup> )
2/92 Kenderdine Road, Papatoetoe	Lot 2 DP 82259, FLAT 2 DP 89779,		
3/92 Kenderdine Road, Papatoetoe	Lot 2 DP 82259, FLAT 3 DP 89779,		
8 Bridge Street, Papatoetoe	Lot 21 DP 21411	Private	Temporary (77 m <sup>2</sup> )
9 Bridge Street, Papatoetoe	Lot 27 DP 21411	Private	Permanent (858 m <sup>2</sup> )
10 Bridge Street, Papatoetoe	Lot 22 DP 21411	Private	Permanent (841 m <sup>2</sup> )

Property address	Legal Description	Type of Ownership	Temporary or Permanent Acquisition
Puhinui Road – Unformed Road	Road Reserve	Public	Permanent (5172 m <sup>2</sup> )
Puhinui Road – Council Reserve	N/A	Public	Temporary (1764 m <sup>2</sup> )
212 Cavendish Drive, Manukau	Sect 8 SO 501086	Private	Temporary (6838 m <sup>2</sup> )
Section of SH20/Rail Corridor	N/A	Public	Permanent (486 m <sup>2</sup> )
12 Langley Road, Manurewa	Lot 2 DP 371368	Private	Temporary (3565 m <sup>2</sup> )

In summary the following land areas are required by this NoR for the W2QP as compared the land area of the existing designation:

Total area of existing NIMT designation	Total Temporary Acquisition	Total Permanent Acquisition
175 hectares	1.38 hectares	2.15 hectares

A further description of the environment is provided in Section 4 of the AEE.

### 3. The nature of the proposed public work

The wider project includes proposed public works at Quay Park, Westfield Junction, Wiri Junction and between Middlemore Station and Wiri Junction. These works include new tracks, crossovers, signals, overhead electrical infrastructure (OLE) and other associated rail assets. Further detail of the wider project is provided in Section 1 of the AEE.

The NoR will specifically provide for the construction of a third track for the North Island Main Trunk Line (NIMT) including:

- Installation of a new 3.6 km track between Middlemore Station and Wiri Junction;
- An upgraded Middlemore Station, including an extension of an existing pedestrian bridge and the provision of a 6-car platform (with provision for a future 9-car platform);
- Reorganisation of car parking at Middlemore Hospital to address physical severance;
- Installation of above ground rail infrastructure;
- The construction of retaining walls to stabilise railway cuttings;
- Utility relocations; and

- Stormwater infrastructure.

The NoR also provides the opportunity to correct the following mapping error in the AUP(OP):

- The previous exclusion of the designation from the outer northbound track beneath SH20 at Wiri.

Refer to Section 6 of the AEE for further detail on the proposed works.

#### 4. The nature of the proposed conditions that will apply

The NoR provides for an alteration to the existing designation and the addition of 3.53 ha of land to the rail corridor's current 175 ha footprint. Most of the physical works required for the third main (e.g. OLE, tracks, drainage) will be located inside the existing designation, where rail operations have occurred for over 100 years. There are no relevant conditions attached to the existing designation and any potential adverse effects associated with works within the designation managed by the district plan provisions in the AUP(OP) are managed via the Outline Plan process. Due to the minor addition of 3.53 ha with only 1.38 ha of this being permanently required (with more than 0.5 ha of this permanent land take being unformed road adjacent to Puhinui Station), it is proposed that this approach continues, and no further conditions are proposed.

It is also noted that regional resource consents are required for bulk earthworks, disturbance of contaminated soil, stormwater discharges and minor streamworks. These resource consents will be supported by conditions of consent as they relate to the potential adverse effects of construction related activities.

The scope and scale of works required will be further refined through the detailed design process and the mitigation, management plans or offsetting required will be implemented via by consent conditions.

#### 5. The effects that the public work will have on the environment and the ways in which any adverse effects will be mitigated

Refer to section 7 of the AEE for detail on the effects of the proposal. In summary, the project will have significant positive effects on the environment associated with the resulting increased capacity of the NIMT. The additional land required will enable additional passenger and freight services to be safely constructed to support the provision of quality compact urban growth in Auckland, assist in mitigating the causes of climate change and improve the integrated functioning of Auckland's strategic transport network.

The project will have localised adverse environmental effects that are considered to be no more than minor in extent. These include those resulting from:

- Construction noise and vibration;
- Construction traffic;
- The potential disturbance of contaminated soil;
- Visual amenity;
- Temporary loss of dwellings; and
- Temporary disruption to the operation of Middlemore Hospital.

## 6. The extent to which alternative sites, routes, and methods have been considered

Three potential key options to improve network capacity on this section of the NIMT were considered:

1. Do nothing; or
2. Construct an additional track along the western side of the existing corridor; or
3. Construct an additional track along the eastern side of the existing corridor.

Option 2 has been selected as it meets the project's objectives. Further detail regarding the assessment of alternatives is provided in Section 5 of the AEE.

## 7. Reasonable necessity for the public work and designation

The public work and alteration to the designation are reasonably necessary for achieving the objectives of the Requiring Authority. This is discussed in detail in section 10 of this AEE.

In summary, the public work and alteration to designation is reasonably necessary for achieving the following project objectives:

1. Facilitate the expected/planned growth of freight and passenger services on the Auckland Metro rail network.
2. Operate rail services in a manner which protects the safety of operators, passengers and adjoining residents/workers.
3. Operate rail services in a manner which minimises adverse environmental effects.
4. Future-proofs the corridor for additional rail capacity improvements.

The alteration to the designation and work is necessary to achieve these objectives as the proposed infrastructure is not specifically provided for under the AUP(OP)'s zone-based controls or the specific provisions for infrastructure (Chapter E26). Permanently extending the designation to include the additional 3.53 ha of land will ensure that the corridor is protected for the ongoing construction, operation and maintenance of the national rail infrastructure and that this is not altered by changes to the AUP(OP), or limited by development on adjacent sites. In addition, it provides the flexibility required to develop the corridor in a manner which supports the project's objectives.

Furthermore, the use of a designation as a planning tool enables flexibility and for detailed design to be confirmed at a later date but through its identification on the AUP(OP)'s planning maps will provide notice to the public that a public work is intended.



## 8. Consultation with parties that are likely to be affected

Consultation has been undertaken including with the following parties:

- Iwi;
- Auckland Transport;
- Counties Manukau District Health Board;
- Māngere-Ōtāhuhu and the Ōtara-Papatoetoe Local Boards;
- Auckland Council Community Facilities; and
- Private landowners.

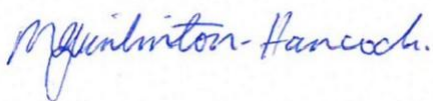
Refer to Section 8 of the AEE for detail.

## 9. Information required

KiwiRail attaches the following information required to be included in this notice by a plan or proposed plan, or any regulation made under the Resource Management Act 1991:

- Land Requirement Plans;
- Assessment of Effects on the Environment Report;
- Records of Title;
- Site Plans;
- Transport Impact Assessment;
- Historic Heritage Assessment;
- Flooding Assessment;
- Arboricultural Assessment;
- Ground Contamination Assessment; and
- Noise and Vibration Assessment.

Signed for KiwiRail by Michelle Grinlinton-Hancock, Senior RMA Advisor, under delegated authority of KiwiRail Holdings Limited.



Dated – 14 July 2020

## Notice of Requirement for W2QP

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Address for Service:

Attention: Michelle Grinlinton-Hancock

KiwiRail Holdings Limited

2 Bunny Street, Wellington 6011

PO Box 593, Wellington 6140

Michelle.Grinlinton-Hancock@kiwirail.co.nz

## PART B: ASSESSMENT OF ENVIRONMENTAL EFFECTS

## 1. Introduction

KiwiRail Holdings Limited (KiwiRail) is undertaking a series of improvements across Auckland's Metro rail network, collectively referred to as the Wiri to Quay Park (W2QP) Project (the 'project'). With a capital expenditure of \$315 million, the project will help ease congestion on some of the busiest sections of Auckland's Metro rail network, as well as provide for future growth demand for both passenger and freight services. The project will also improve network resilience and assist in reducing greenhouse gas emissions (by reducing private and heavy vehicle use).

W2QP is broken down into four separate spatially based packages of work (running northwards from Wiri):

- Package 1: *Wiri Junction* - Additional tracks and crossovers to improve the functioning of Wiri Junction.
- Package 2: *Wiri to Middlemore* - A new 3.6 km section of track between Middlemore Station and Wiri Junction, as well as the upgrading of Middlemore Station. These works will increase the capacity of the NIMT and future proof Middlemore Station for 9-car services.
- Package 3: *Westfield Junction* - A new layover track on the NIMT eastern line to provide timetable flexibility to cross the Westfield Junction, as well as works within the Westfield Yard to ensure that freight operations do not foul the mainline and impact other rail services.
- Package 4: *Quay Park* - A 1 km track extension and mainline connections into the Ports of Auckland (POA) freight facility, thereby allowing for faster entry and exit into and out of the Port.

Works are due to commence mid to late 2020 and will take approximately three years to complete<sup>2</sup>.

This NoR is seeking an alteration to the existing designation and the acquisition of 3.53 ha of land (1.38 ha permanent and 21.4 ha or temporary) outside the existing designated rail corridor to enable the works provided by Package 2. This acquisition will enable construction access and works and/or structures associated with the third main, including the upgrading of Middlemore Station. As such, KiwiRail proposes to alter the existing designation (AUP(OP) ID 6302) to incorporate the additional land required for these works. A copy of the land requirement plans detailing the extent of the proposed alteration and the temporary/permanent occupation requirements of KiwiRail are provided as Appendix C.

This assessment of environment effects (AEE) details the following:

- The roles and responsibilities of KiwiRail;
- The reasons for the works;
- A description of the existing environment;
- A description of the proposed works and supporting technical drawings;
- An assessment of alternatives;
- An assessment of actual and potential effects, supported by technical reports;
- A summary of consultation undertaken by KiwiRail;
- A notification recommendation; and
- An assessment of the proposal against section 171 and Part 2 of the RMA.

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<sup>2</sup> It should be noted that the works addressed by the NoR are scheduled to commence in mid-2021.

## 2. KiwiRail’s Role and Responsibilities

### 2.1 KiwiRail’s National Role and Network

KiwiRail is the 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, while also providing the network infrastructure for passenger rail services in Auckland, Wellington and some intercity services. KiwiRail also supports New Zealand’s tourism sector with the Northern Explorer (Auckland to Wellington), Tranz Alpine (Christchurch to Greymouth) and Coastal Pacific (Picton to Christchurch) services. Lastly, 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 network (Figure 2-1) includes more than 3700 km of track and 1300 bridges, with over 200 locomotives available to transport both freight and passengers. Additionally, KiwiRail employs more than 3,700 New Zealanders<sup>3</sup>.

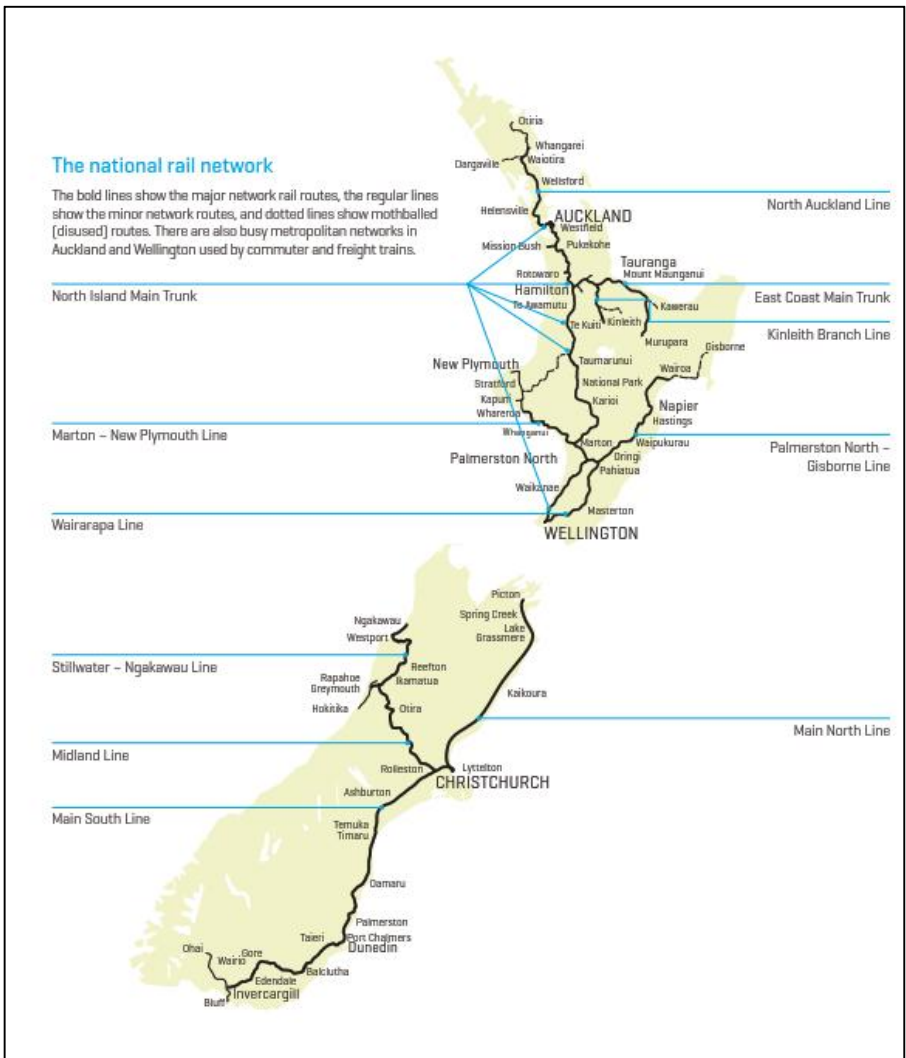


Figure 2-1: New Zealand Rail Network

<sup>3</sup> Draft New Zealand Rail Plan, KiwiRail, 2019.



## 2.2 The Benefits and Importance of KiwiRail's National Network

The importance of the rail network to New Zealand's economy is demonstrated by the significant volume of freight and passengers it carries every year. On an annual basis, KiwiRail transports approximately 25% of New Zealand's exports, carries over 1 million tourists and provides the infrastructure for 34 million commuter journeys<sup>4</sup>.

The use of rail for the above-mentioned freight and passenger services delivers a variety of benefits to New Zealand, including environmental and safety benefits. 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<sup>5</sup>. A reduction in emissions is also achieved by commuter passenger services which reduce the number of private vehicles on the roads and improve local air quality conditions. These environmental benefits are enhanced by the increasing use of electric motor units (EMUs) for commuter services, which use electrical power rather than diesel.

Rail freight services also support community health and wellbeing goals set by the New Zealand Government, particularly the target to reduce the national road toll. Work by EY Limited estimates that rail has the potential to eliminate approximately 271 road safety incidents a year as a result of a reduced dependence on road freight transport<sup>6</sup>. As such, by reducing heavy vehicles on New Zealand's roads and state highways, KiwiRail's network helps provide a safer environment for smaller private vehicles, cyclists and pedestrians.

Community wellbeing is also supported by the inclusive nature of rail passenger services. Passenger rail provides improved accessibility to places of learning, earning and community participation for a broad range of residents in the Wellington and Auckland regions. The inclusive nature of rail has also been increased by the gradual upgrading of train stations and rolling stock to provide step-free access, enabling the differently abled to enjoy the connectivity benefits of rail. A program is also underway to increase the availability of bicycle parking facilities at stations to enable the safe and secure parking of bicycles while patrons use rail services.

Rail services are also critical to the growth of the national economy and regional productivity given its role as an efficient transport mode for freight and people. The current rail network transports approximately 25% of New Zealand's exports per annum and provides a vital connection between primary producers and the nation's ports. Current export volumes are expected to continue to grow over the coming decades, with freight tonnage anticipated to increase up to 55% by 2042<sup>7</sup>.

## 2.3 National Rail Challenges and Future Investments

The current national rail network faces several challenges to meet the forecasted growth of freight. Line capacity, aging assets and missing connections all impact its ability to meet this growing demand. Despite these challenges, the New Zealand Government has identified the national rail network as a critical component of the nation's wider transport sector and has provided funding to assist the network to meet future growth demands. Given this strategic direction set by central government, KiwiRail and the Ministry of Transport have produced the Draft New Zealand Rail Plan (the Rail Plan), which identifies several areas in which investment is required.

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<sup>4</sup> *Ibid*

<sup>5</sup> *Ibid*

<sup>6</sup> The Value of Rail in New Zealand, EY for the Transport Agency, 2016.

<sup>7</sup> Transport Outlook Future State, Ministry of Transport, November 2017.

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;
- A programme of safety improvements at level crossings;
- Replacement of locomotives and wagons with more an efficient and reliable fleet;
- Improvement and upgrading of maintenance facilities, including those at Hutt Valley, Auckland and Christchurch; and
- New Inter-islander vessels and docking facility upgrades.

Further ahead, other potential investments 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; and
- Increased regional services.

While the Rail Plan is still draft and undergoing a public consultation process, it provides a clear direction for the future of New Zealand's rail network and will allow rail investment to be aligned with both the upcoming Government Policy Statement 2021 and future budget decisions.

## 2.4 The Auckland Rail Network

At a regional level, KiwiRail's network is critical infrastructure for Auckland's economic wellbeing, provision of managed growth and social cohesion. Within the Auckland Region, KiwiRail is responsible for the operation and maintenance of both the Metro rail network and sections of the NIMT outside the urban area, although Auckland Transport (AT) is responsible for the operation of passenger services and related station investment.

As shown in Figure 2-2, the Auckland Metro Network consists of four lines:

- The Southern Line, which runs from Pukekohe to Britomart<sup>8</sup>;
- The Eastern Line, which runs from Manukau to Britomart;
- The Western Line, which runs from Swanson to Britomart; and
- The Onehunga Line, which runs from Onehunga to Britomart.

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<sup>8</sup> Services between Pukekohe and Papakura are currently reliant on a diesel locomotive shuttle service. However, the planned Papakura to Pukekohe Project will introduce the corridor infrastructure needed to support EMUs.

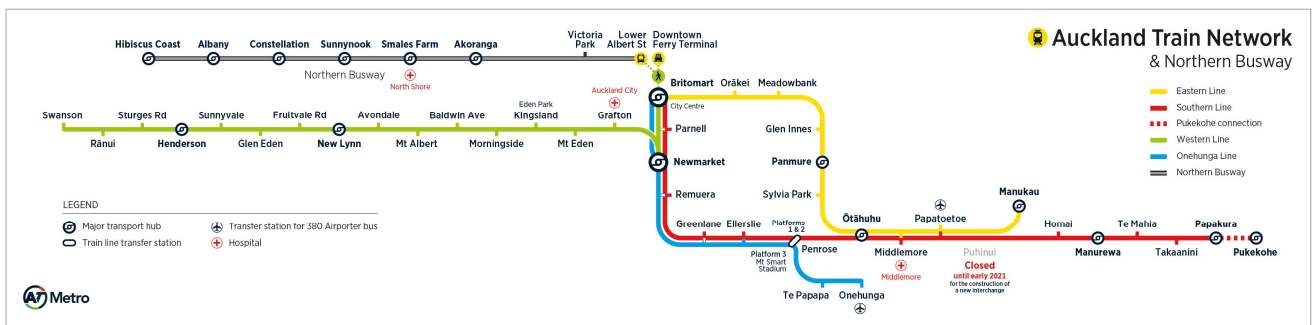


Figure 2-2: Auckland Metro Rail Network

Currently the 41<sup>9</sup> stations across the Auckland network serve between 1.7 and 1.9 million commuter journeys per month, with patronage varying on public holidays, during school/tertiary institute holidays and currently due to restrictions associated with and the public response to Covid-19. Significant investment in this network is currently underway with the construction of City Rail Link (CRL) in Auckland, that includes a new 3.45 km tunnel between Britomart and Mt Eden station and extending eight station platforms to accommodate nine car trains (current passenger trains have a maximum of six cars).

The CRL project is New Zealand’s largest infrastructure project and will transform the Auckland rail network by doubling passenger capacity. By turning Britomart into a through station (rather than a terminus), and providing two new stations on the network (Aotea and Karangahape Road) peak hour passenger numbers are expected to rise to 54,000/hr. The extra demand expected to be generated by CRL, requires upgrades to other sections of the rail network to accommodate both an increase in the number of passenger services and increased train length.

It is noted that rail is also critical to managing the growth of Auckland. Strategic planning documents, such as the Auckland Plan 2050, highlight the role that passenger rail has in the coming decades. As the population of Auckland approaches two million, passenger rail becomes more critical for the efficient movement of people. Given Auckland’s existing high levels of road congestion and private motor vehicle dependency, these strategic documents identify the need for passenger rail services to have greater capacity, improved resilience and greater frequency.

The urban growth plans for Auckland also rely on the development of transit orientated developments (TODs) at public transport hubs, including train stations. An example of the future role of rail is provided at Mount Eden Station, where the rail upgrades associated with CRL also provide for a TOD. This urban growth model will require additional infrastructure investment to meet rail passenger service demands.

The New Zealand Government is planning to reintroduce intercity services between Auckland and Hamilton. These services are due to commence in the second half of 2020, with one morning service from Hamilton to Auckland and a return service operating in the early evening. Depending on the success of this trial, reintroduction of additional intercity services may occur. While these services provide community and environmental benefits, they rely on the same corridors as current freight and passenger services. As such, they place additional pressure on the network’s capacity.

The limited track capacity and crossovers also impacts on network resilience, as a malfunctioning train has the potential to shut down the corridor to other services. Currently, the Auckland rail network can experience a number of service cancellations per month due to train breakdowns and other network issues. The resultant service cancellations impact the reliability of rail and reduces public confidence in rail as an alternative to private vehicle use, thereby undermining the rail passenger targets sought by AT.

<sup>9</sup> Puhinui Station is currently closed for upgrade works.

It is also noted that the Auckland rail network is important for the movement of freight. Freight movements through and across Auckland are dominated by both movements to and from the inland port at Te Papapa and the POA on the Waitemata Harbour. During 2019, the POA handled more than 939,000 TEUs<sup>10</sup>, with 107,800 of these moved via rail. Currently, the POA features four parallel rail lines, each of which are 500m long and which hold 128 rail wagons. However, the POA's 30-year plan seeks to undertake significant automation of its operations, which will increase port capacity to 1.6 million TEUs. As such, additional capacity for freight will be required within Auckland's rail network to minimise the volume of freight movements via the region's roads and state highways.

The passenger and freight rail services described above are required to share the same tracks and rail corridors. While scheduling and larger capacity trains (e.g. switching from 6-car to 9-car passenger services) can alleviate some of the demand pressures on the network, investment in additional track capacity is also required. This investment can allow faster passenger services (including potential express services) to leapfrog slower trains.

At a micro level, there are several key junctions on the Auckland rail network which experience high demand and illustrate the capacity issues facing KiwiRail. The most highly trafficked of these is at Westfield, where the NIMT, the North Auckland Line (NAL) and a spur to the Te Papapa inland port all converge at the same junction.

KiwiRail (in conjunction with AT) is planning significant investment into the network to increase the capacity and improve resilience. The planned investment and its benefits are detailed in Table 2-1.

**Table 2-1: Planned Rail Investment for the Auckland Region**

Major Projects / Investments	Works Proposed	Summary of Benefits
Wiri to Quay Park	Construction of a third main on sections of the NIMT, junction upgrades at Wiri and Westfield.	<p>Increased corridor capacity.</p> <p>Ability to provide future 9-car services at Middlemore.</p> <p>Additional siding capacity for Port of Auckland.</p> <p>Supports urban intensification.</p> <p>Increased network resilience.</p>
Papakura to Pukekohe	<p>Electrification of 19 km of NIMT in South Auckland.</p> <p>Establishing three new stations for greenfield growth areas.</p> <p>Upgrades of Pukekohe Station.</p> <p>Track and bridge upgrading/replacement.</p>	<p>EMUs will be able to travel from Pukekohe, removing need for a diesel locomotive based service between Papakura and Pukekohe.</p> <p>Rail infrastructure will be in place to service new growth areas.</p> <p>Improved network resilience.</p>
CRL	Construction of a new rail link between Mount Eden Station and Britomart.	Increased capacity for passenger services.

<sup>10</sup> Twenty-Foot Equivalent Units – this is the standard measure for a shipping container.

Major Projects / Investments	Works Proposed	Summary of Benefits
	<p>New stations at Karangahape Road and Albert Street.</p> <p>TODs at Karangahape Road and Mount Eden Stations.</p>	<p>Reduced travel times to city on Western Line.</p> <p>Britomart Station no longer a terminus.</p> <p>Increased range of services on rail network.</p> <p>Supports urban intensification.</p>
Station Upgrades	Upgrading of 8 stations (excluding Middlemore) <sup>11</sup> to accommodate 9-car passenger services.	Increased passenger capacity on the network.

Overall, while the Auckland rail network faces a number of challenges, not least due to the region's population growth, a range of investments are planned to alleviate demand pressures and support Auckland Council's strategic vision for the city. A critical component of this infrastructure investment is the current project, with a description of its objectives and role in meeting the network's challenges detailed in Project Objectives 3.3 of the AEE.

<sup>11</sup> Middlemore Station is excluded given its inclusion in this NoR.



## 3. Reasons for the Works

### 3.1 Issues and Potential Responses

As discussed in Section 2 of the AEE, the NIMT is a nationally significant transport corridor. It connects the POA to inland ports and the regions, while also supporting the provision of frequent passenger services. Currently the demand for both freight and passenger services generates scheduling difficulties, given the need to ensure minimum safe distances between trains and the limited number of sidings and crossovers to allow services to pass each other.

The demand pressures on the NIMT are projected to increase significantly over the coming decades as Auckland grows. This demand will be driven by the following:

- Increased TEU traffic to and from the Port of Auckland;
- Increased bulk freight (e.g. timber, aggregate) moving through Auckland;
- Increased Metro passenger rail services to accommodate commuter demand;
- A regional growth model which relies on transit orientated development and urban intensification dependent on high frequency public transport;
- Auckland Council's strategic goals to increase patronage of public transport services; and
- The reintroduction of intercity rail services between Auckland and Hamilton (and potentially other centres).

These demands place additional pressure on the existing rail network and its ability to maintain safe operations. In order to address these demands, a variety of potential responses are possible and can be split between methods to make current rail services more efficient or investment in new/upgraded heavy rail infrastructure.

The first potential response is the reduction in safety distances between rail services. This could allow for additional rail services but comes with increased risk to safety of KiwiRail staff, AT rail crews and passengers. Adequate separation distances are required between rail services to enable trains to stop safely should lines be blocked by other services. Without these separation distances there is an increased risk of collisions, resulting in injuries, fatalities and property damage. As such, this response is not considered appropriate to relieve pressure on the NIMT.

Another option is to increase the number of carriages on passenger services, thereby increasing service capacity without needing to increase the frequency of services. This option is being employed slowly across the rail network, with the current project future proofing for 9-car services (above the maximum 6-car services currently operating) at Middlemore Station. However, this option will require AT to purchase additional carriages and the upgrading of a number of stations across the entire Metro network to increase their length to accommodate the longer trains. This option will provide for additional passenger capacity but it will not address the freight service demands. While this investment will partially resolve some capacity issues, other options are still needed to help alleviate overall pressure on the NIMT.

Given the clash between freight and passenger services, another option is to schedule more freight services outside of work hours (i.e. 7 am to 7 pm). Currently, the majority of freight services operate outside these hours, with the majority of freight services occurring during the late evening and early morning. However, while this use of scheduling helps minimise service clashes, the increased demand for freight services could potentially require more services during working hours. In addition, efficient freight transport is time dependent and delays caused by current freight service scheduling can negatively impact the suitability of moving higher value goods by rail and also impacts on businesses willingness to use rail over road.

In addition to investment in passenger services, investment in heavy rail infrastructure was also identified as a potential option. This includes constructing a new rail corridor or improving the capacity of the existing corridor. The area within Auckland's Rural Urban Boundary (RUB) includes a lack of significant areas of undeveloped land, which limits potential to build a new rail corridor. While the AUP(OP) includes a designation for the Avondale to Southdown Line (AUP(OP) Reference: ID6303), operating a service along this corridor will not decrease capacity issues on the NIMT between Middlemore and Wiri Junction, while the topography between Mount Roskill and Onehunga would make providing a heavy rail corridor on this alignment difficult<sup>12</sup>. Constructing an additional corridor through South Auckland (i.e. between Westfield and Wiri Junctions) would require the acquisition of numerous private properties. A new corridor would be costly and has the potential to result in community severance and other environmental effects. Given these factors, the construction of new rail corridor is not a practicable option at this time.

The option to increase the number of tracks within the existing corridor is both an affordable and practicable option. The majority of the existing designated corridor has adequate space to incorporate a third main, with only minimal property acquisitions required. The construction of a third main provides the following benefits:

- Minimises the need to take significant areas of land;
- Allows the third main works to leverage off existing rail investment on the NIMT (e.g. the works at Puhinui Station);
- Reduced construction costs;
- Minimisation of environmental impacts;
- Reduced community severance and disruption;
- Provides an opportunity to improve existing infrastructure assets (e.g. Middlemore Station); and
- Alignment with Auckland Council's regional growth strategy and plans.

Given the above benefits, this NoR for the amendment of the existing designation has been prepared to provide for the construction of a third main between Middlemore and Wiri Junction for the NIMT.

### 3.2 Need to alter Designation

Through the design process, KiwiRail has sought to limit the number of permanent land acquisitions, with the majority of sites required only for temporary occupation. Land acquisition cannot be avoided altogether due to:

- The minimum clearance requirements between the third main and existing rail assets;
- The need to provide retaining walls to stabilise earthworks cut/fill areas;
- The lack of available space in the existing corridor to provide a platform at Middlemore Station capable of accommodating nine cars in the future;
- The need to provide suitable pedestrian access across the corridor to new and altered platforms; and
- The need to provide safe construction access to the designated corridor.

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<sup>12</sup> It is noted that this designation is currently subject to an appeal by AT (ENV-2016-AKL-000277).

Table 3-1 details the specific reason each property is required, as well as whether acquisition is temporary or permanent:

**Table 3-1: Proposed Land Take**

Property address	Legal Description	Reasons for Land Take	Temporary or Permanent Acquisition
64 Rosella Road, Mangere East	Lot 13 DP 19494	Required to provide construction access and long-term maintenance access to the corridor.	Permanent (1,014 m <sup>2</sup> )
100 Hospital Road, Papatoetoe	Allotment 237 Parish of Manurewa, Part Lot 13 DP 2989	Required to provide space for the third main, the extension of the pedestrian bridge and improved pedestrian connections to Orakau Road.	Permanent (2624 m <sup>2</sup> ) Temporary (193 m <sup>2</sup> )
Road Reserve – Orakau Road	N/a	Required to provide space for the third main.	Permanent (23 m <sup>2</sup> ) Temporary (40 m <sup>2</sup> )
18R Gordon Road, Papatoetoe	Lot 53 DP 20068, Pt Allot 36 Psh of Manurewa	Construction access and likely to be a site yard.	Temporary (2,274 m <sup>2</sup> )
1 Station Road, Papatoetoe	Lot 7 DP 111628	Required for retaining wall construction.	Temporary (129 m <sup>2</sup> )
5 Station Road, Papatoetoe	Lot 6 DP 111628	Required for retaining wall construction and occupation.	Permanent (2,274 m <sup>2</sup> )
9 Station Road, Papatoetoe	Lot 5 DP 111628	Required for retaining wall construction and occupation.	Permanent (781 m <sup>2</sup> )
11 Station Road, Papatoetoe	Lot 4 DP 111628	Required for retaining wall construction.	Temporary (139 m <sup>2</sup> )
15 Station Road, Papatoetoe	Lot 3 DP 111628	Required for retaining wall construction.	Temporary (129 m <sup>2</sup> )

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Property address	Legal Description	Reasons for Land Take	Temporary or Permanent Acquisition
17 Station Road, Papatoetoe	Lot 2 DP 111628	Required for retaining wall construction.	Temporary (116 m <sup>2</sup> )
19 Station Road, Papatoetoe	Lot 1 DP 111628	Required for retaining wall construction.	Temporary (134 m <sup>2</sup> )
21R Station Road, Papatoetoe	Lot 9 DP 111628	Required for retaining wall construction.	Temporary (52 m <sup>2</sup> )
12 Wyllie Road, Papatoetoe	Lot 1 DP 152288	Required for corridor access.	Permanent (1,165 m <sup>2</sup> ) Temporary (4,720 m <sup>2</sup> )
14 Wyllie Road, Papatoetoe	Pt Lot 1 P 136372	Required for retaining wall construction and corridor access.	Temporary (924 m <sup>2</sup> )
74D Kenderdine Road, Papatoetoe	Lot 5 DP 327717, ¼ SH Lot 6 DP 327717	Access for retaining wall construction.	Temporary (41 m <sup>2</sup> )
76 Kenderdine Road, Papatoetoe	PT LOT 30 DP 16605	Access for retaining wall construction.	Temporary (62 m <sup>2</sup> )
1/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 1 DP 80955		
2/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 2 DP 80955		
3/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 3 DP 80955		
4/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 4 DP 80955		
78 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Pt Lot 31 DP 16605	Required for retaining wall construction and occupation.	Permanent (64 m <sup>2</sup> )
80 Kenderdine Road, Papatoetoe	Lot 1 DP 135948	Access for retaining wall construction.	Permanent (63 m <sup>2</sup> )
1/80 Kenderdine Road, Papatoetoe	Lot 1 DP 135948, FLAT 1 DP 135948		

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Property address	Legal Description	Reasons for Land Take	Temporary or Permanent Acquisition
2/80 Kenderdine Road, Papatoetoe	Lot 1 DP 135948, FLAT 2 DP 135948		
3/80 Kenderdine Road, Papatoetoe	Lot 1 DP 135948, FLAT 3 DP 135948		
84 Kenderdine Road, Papatoetoe	Lot 1 DP 70381	Access for retaining wall construction.	Temporary (97 m <sup>2</sup> )
1/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 1 DP 10238		
2/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 2 DP 10238		
3/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 3 DP 10238		
4/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 4 DP 10238		
5/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 5 DP 10238		
6/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 6 DP 10238		
7/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 7 DP 10238		
8/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 8 DP 10238		
9/84 Kenderdine Road Papatoetoe Auckland	Lot 1 DP 70381, FLAT 8 DP 10238		
88 Kenderdine Road, Papatoetoe	Lot 2 DP 70381	Access for retaining wall construction.	Permanent (103 m <sup>2</sup> )
90 Kenderdine Road Papatoetoe	Lot 34 DP 16605	Access for retaining wall construction.	Temporary (103 m <sup>2</sup> )
1/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 1 DP 102388,		
2/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 2 DP 102388,		

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Property address	Legal Description	Reasons for Land Take	Temporary or Permanent Acquisition		
3/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 3 DP 102388, CARPORT 3 DP 102388				
4/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 4 DP 102388,				
5/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 3 DP 102388, CARPORT 5 DP 102388				
6/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 6 DP 102388,				
7/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 7 DP 102388,				
8/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 8 DP 102388, CARPORT 8 DP 102388				
9/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 9 DP 102388,				
10/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 10 DP 102388,				
11/90 Kenderdine Road, Papatoetoe	Lot 34 DP 16605, FLAT 11 DP 102388, CARPORT 11 DP 102388				
92 Kenderdine Road, Papatoetoe	Lot 2 DP 82259			Access for retaining wall construction.	Temporary (106 m <sup>2</sup> )
1/92 Kenderdine Road, Papatoetoe	Lot 2 DP 82259, FLAT 1 DP 89779, CARPORT 1 DP 89779			Access for retaining wall construction.	Temporary (106 m <sup>2</sup> )
2/92 Kenderdine Road, Papatoetoe	Lot 2 DP 82259, FLAT 2 DP 89779,				
3/92 Kenderdine Road, Papatoetoe	Lot 2 DP 82259, FLAT 3 DP 89779,				
8 Bridge Street, Papatoetoe	Lot 21 DP 21411	Access to 10 Bridge Street.	Temporary (77 m <sup>2</sup> )		

Property address	Legal Description	Reasons for Land Take	Temporary or Permanent Acquisition
9 Bridge Street, Papatoetoe	Lot 27 DP 21411	Required for retaining wall construction and occupation.	Permanent (858 m <sup>2</sup> )
10 Bridge Street, Papatoetoe	Lot 22 DP 21411	Required for retaining wall construction and occupation.	Permanent (841 m <sup>2</sup> )
Puhinui Road – Unformed Road	Road reserve	Required for construction access and laydown	Permanent (5172 m <sup>2</sup> )
Puhinui Road – Council Reserve	N/A	Required for rail infrastructure, including tracks, OLE and signals.	Temporary (1764 m <sup>2</sup> )
212 Cavendish Drive, Manukau	Sect 8 SO 501086	Required for construction access	Temporary (6838 m <sup>2</sup> )
Section of SH20/Rail Corridor	N/A	Mapping correction	Permanent (486 m <sup>2</sup> )
12 Langley Road, Manurewa	Lot 2 DP 371368	Required for construction access	Temporary (3565 m <sup>2</sup> )

This NoR is seeking an alteration to the existing designation and the acquisition of 3.38 ha of land (1.38 ha permanent and 2.53 ha or temporary) outside the existing designated rail corridor to enable the works provided for in Package 2. This acquisition will enable construction access and works and/or structures associated with the third main, including the upgrading of Middlemore Station

### 3.3 Project Objectives

KiwiRail has identified the following Project objectives:

- Facilitate the expected/planned growth of freight and passenger services on the Auckland Metro rail network.
- Operate rail services in a manner which protects the safety of operators, passengers and adjoining residents/workers.
- Operate rail services in a manner which minimises adverse environmental effects.
- Future-proof the corridor for additional rail capacity improvements.

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These objectives were developed to reflect:

- The strategic pressures facing the current NIMT corridor;
- The safety requirements of KiwiRail given its role as a transport service provider;
- KiwiRail's good neighbour goals; and
- Potential future rail investment.

These objectives were used to inform the assessment of alternatives discussed in section 5 of this AEE, as well as to support the development of the project's design and environmental mitigation/management measures.



## 4. Description of the Environment

The following section describes the physical location of the project, including the land required for this alteration to designation and the existing designated corridor for the NIMT. While the statutory assessment of the NoR is limited to the effects of acquiring the land identified in Table 3-1, the surrounding environment has been described and detailed to provide context. The various physical and AUP(OP) features detailed were also used when undertaking the assessment of alternatives (discussed in Section 5).

As discussed in Section 1, W2QP includes four distinct packages of works located between Quay Park and Wiri Junction. The additional land required by this NoR is required to provide for the delivery of Package 2. The following section is therefore limited to those environmental features associated with the construction and operation of Package 2 (i.e. Middlemore to Wiri Junction<sup>13</sup>. The land take required for the project (i.e. where works are located outside the existing corridor) is also detailed by the land requirement plans (Appendix C).

### 4.1 Location

Package 2 is located along the NIMT corridor from Middlemore Station to Wiri Junction (Figure 4-1). Running through the central urban core of South Auckland, this section of the NIMT corridor includes three passenger stations (Middlemore, Papatoetoe and Puhinui), tracks, OLE assets and supporting infrastructure<sup>14</sup>.

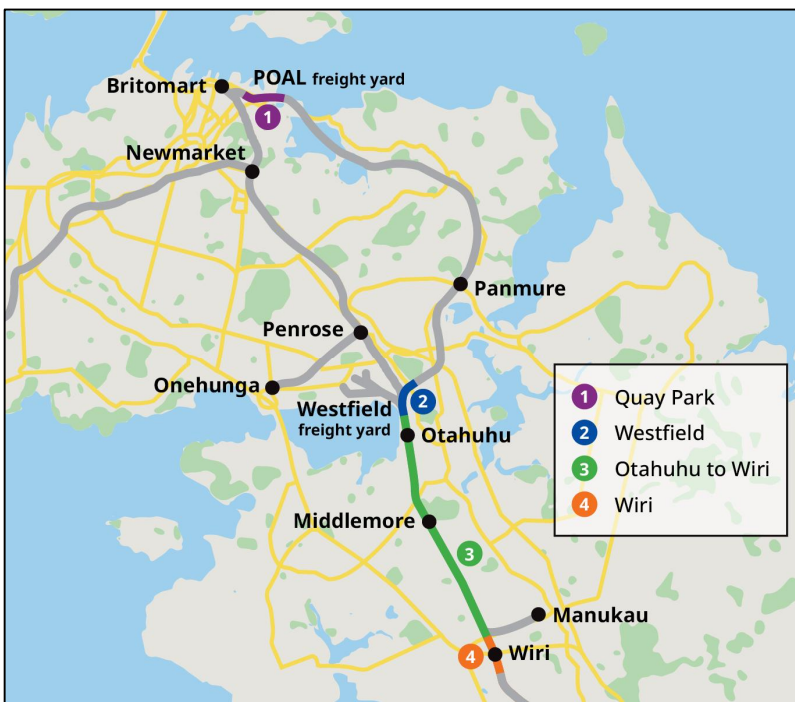


Figure 4-1: Location of Proposed Works (Source: KiwiRail)<sup>15</sup>

The NIMT was established in the late 19<sup>th</sup> century, connecting South Auckland to the old City of Auckland. This facilitated the urban growth of Auckland and this is seen by the current post-World War 2 development surrounding the corridor. This development includes the Middlemore Hospital, large areas of suburban housing

<sup>13</sup> As noted in Section 1, Package 2 involves the works between Middlemore Station and Wiri Junction. It does not include the works at Wiri Junction, Westfield Junction or Quay Park.

<sup>14</sup> Puhinui Station is currently closed due to upgrade works by AT.

<sup>15</sup> It is noted that the works between Otahuhu and Middlemore were addressed via previous RMA approvals.

and the industrial activities at Wiri. The character of each location affected by this NoR are detailed in the following sub-sections.

#### 4.1.1 Middlemore Station

The areas surrounding the project at Middlemore transition between a variety of land uses. As shown in Figure 4-2 below, Middlemore Station is largely surrounded by medical facilities associated with Middlemore Hospital. The hospital grounds are bisected by the rail corridor and Hospital Road. The western campus of the hospital is made up of one and two-storey buildings, a multi storey car park (Figure 4-3) and at-grade parking areas (Figure 4-4).



Figure 4-2: Middlemore Station and Surrounds (Source: Auckland Council GeoMaps)

A range of medical related activities occur at the site, including out-patient renal services. Access to the western campus is provided off Orakau Road, which terminates in a cul-de-sac at the boundary of the rail corridor. Also located to the west of the corridor are large areas of suburban housing, mainly detached single and two-storey dwellings. 12 Orakau Road is used as a drug and alcohol treatment facility. To the south is De La Salle College, a private Catholic school catering for approximately 1000 boys in Years 7 to 13.

To the east of the corridor is the main campus of Middlemore Hospital, including the Galbraith Building which faces directly onto Hospital Road and houses gynaecology and maternity services<sup>16</sup>.

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<sup>16</sup> It is noted that long-term plans for Middlemore Hospital feature the demolition of this building and its replacement with new medical facilities.





Figure 4-3: View of at-grade parking



Figure 4-4: Multi-storey car park for hospital staff

The rail corridor at Middlemore is largely at grade with the surrounding properties, although at Middlemore Station the tracks are in a trench to enable step-free access between the platforms and trains. The station features two platforms, with one either side of the corridor. A pedestrian bridge provides access over the corridor, with elevator towers and stairways present at either end. Also present at the station is a small building at the northbound platform's northern end. This building is currently leased to Vodafone to house telecommunications equipment.



To the south of Middlemore is a proposed construction access off Gray Avenue. Gray Avenue is a two-lane public road, with a flush median and on-street parking. The area to be occupied by the construction access is currently a wide grassed berm which abuts the NIMT. The surrounding area is a mixture of residential properties and hospital parking as can be seen in Figure 4-5.

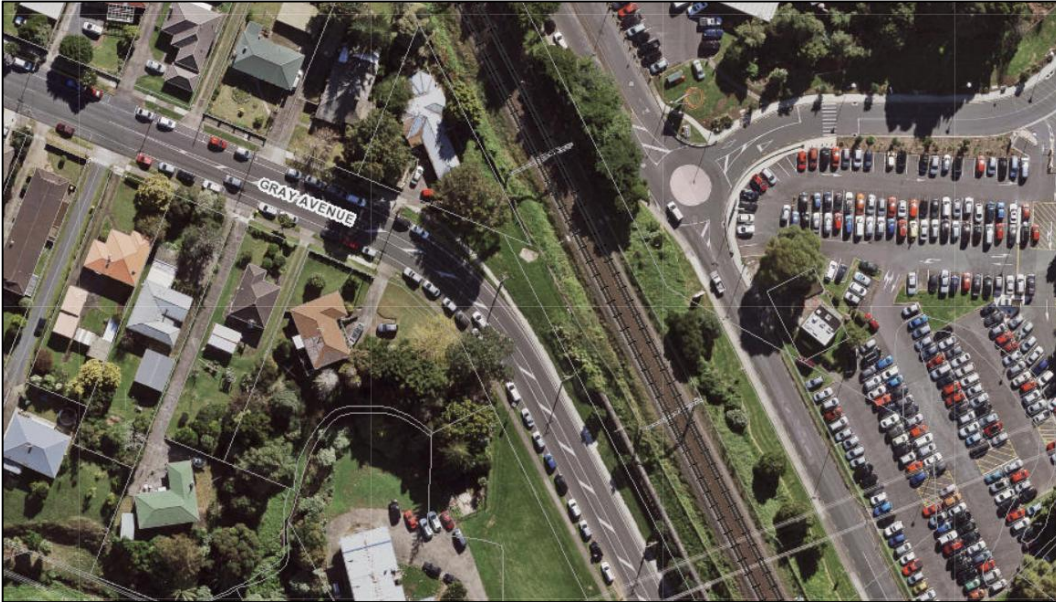


Figure 4-5: Gray Avenue (Source: Auckland Council GeoMaps)

#### 4.1.2 Gordon Park

The next area of works located outside the current NIMT is at Gordon Park, Papatoetoe (Figure 4-6). Gordon Park is a small local council reserve and is accessed via Gordon Road. The reserve does not feature any formal recreation infrastructure (e.g. a playground or community hall) and directly abuts the NIMT. Gordon Road is a residential cul-de-sac, with surrounding land uses including a church and residential properties.



Figure 4-6: Gordon Park (Source: Auckland Council GeoMaps)



#### 4.1.3 Papatoetoe Station

Moving further south to Papatoetoe Station, the surrounding land use changes to a mixture of residential and light commercial activities (Figure 4-7). To the west of the rail corridor is a “Park and Ride” commuter facility, an Auckland Council reserve and several heritage cottages used for residential accommodation. Further to the west is Papatoetoe West School, which has 600 students from Years 1 to 6.

To the east of the station is “Old Papatoetoe”, a town centre consisting of one and two-storey commercial buildings. To the east is the original Papatoetoe Station building, which was relocated during an earlier station upgrade.



Figure 4-7: Papatoetoe Station and Surrounds (Source: Auckland Council GeoMaps)



Figure 4-8: NIMT looking south from Papatoetoe Station

Papatoetoe Station is accessed via a ramped pedestrian bridge, with a platform located in the centre of the corridor. While the rail corridor is largely at grade towards the station, as the corridor moves south it drops into a deep cut, which is crossed by the St George Street bridge (Figure 4-8).

#### 4.1.4 Bridge Street

This location is formed a by a number residential properties on Bridge Street and Kenderdine Road (Figure 4-9). This area features a mix of single and multi-dwelling residential properties. To the west of the corridor is Papatoetoe South School, which has 600 students attending Years 1 to 6. Adjoining the school is Murdoch Park, an Auckland Council reserve.

The rail corridor at this location runs in a trench several metres below the surrounding residential properties (Figure 4-10), before reaching grade towards Puhinui Station. The rail corridor is crossed by Bridge Street, which is a short bridge crossing between two dog legs of the Puhinui Road corridor.



Figure 4-9: Bridge Street and Surrounds (Source: Auckland Council: GeoMaps)





Figure 4-10: View North from Bridge Street

#### 4.1.5 Puhinui Station

This site is located adjacent to the existing NIMT corridor at Puhinui Station. The parcels required include an unformed road corridor running along the eastern boundary of the NIMT and a small council reserve at the corner of Puhinui Road and Clendon Avenue (as shown in Figure 4-11). Surrounding land uses include residential properties, a childcare centre and a dairy.

The area is undergoing substantial change with the construction of the Puhinui Interchange. Puhinui Station is currently closed to passenger services, with construction yards located on both sides of the NIMT corridor.

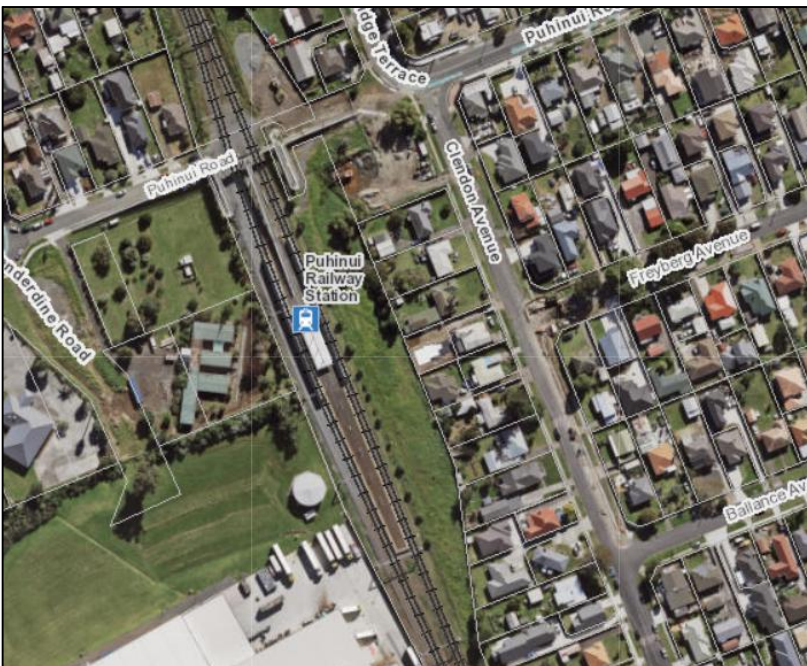


Figure 4-11: Puhinui Station and Surrounds (Source: Auckland Council GeoMaps)

#### 4.1.6 212 Cavendish Drive

As shown in Figure 4-11, 212 Cavendish Drive is located within a light industrial area which is bordered by two transport corridors (Cavendish Drive and the NIMT) and Puhinui Stream. The site is occupied by a large factory, a private road (accessed via traffic signals) and staff car parking. The surrounding area features similar land uses, with a number of sites occupied by large-format manufacturing plants. The area is relatively flat, with the NIMT running level to 212 Cavendish Drive.

As noted above, Puhinui Stream is located immediately to the south of this site. This stream has been subject to restoration projects to address its poor water quality and degraded ecological functions<sup>17</sup>.

Cavendish Drive is a regional arterial road, providing a road connection between Manukau and SH20/Auckland Airport. Given this role, it features multiple traffic lanes, signalised intersections and is designed to accommodate heavy vehicles.



Figure 4-12: 212 Cavendish Drive and Surrounds (Source: Auckland Council GeoMaps)

#### 4.1.7 State Highway 20

This site is formed by the existing NIMT corridor as it runs below SH20. At this location, the NIMT features several existing tracks and associated rail infrastructure. The NIMT sits below two road bridges, as SH20 runs between the Cavendish Drive and Lambie Drive interchanges.

The surrounding area is a mix of transport infrastructure (including Wiri Junction) and undeveloped margins of Puhinui Stream.

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<sup>17</sup> <https://www.stuff.co.nz/auckland/local-news/manukau-courier/106966357/comeback-continues-for-waterway-once-named-aucklands-most-polluted>





Figure 4-13: SH20 and surrounds (Source: Auckland Council GeoMaps)

#### 4.1.8 12 Langley Road

As shown in Figure 4-14, 12 Langley Road and the adjoining sites are currently used for heavy manufacturing and crane storage. Other nearby land uses include the disused Wiri quarry sites, which are being refilled by cleanfill prior to their redevelopment for industrial land uses. Langley Road is a standard two-way formed carriageway, connecting a number of industrial sites to Wiri Station Road and Roscommon Road.

The surrounding area is relatively flat, with the NIMT running level to 12 Langley Road. To the west are the remains of a scoria cone, which is now held as a conservation reserve.



Figure 4-14: 12 Langley Road and surrounds (Source: Auckland Council GeoMaps)

## 4.2 Auckland Unitary Plan (Operative in Part) – zoning, overlays, controls and designations

The zoning, overlays, controls and designations in relation to the proposed works outside of the existing NIMT designation (6302) are identified and summarised in Table 4-1, Table 4-2, Table 4-3 and Table 4-4 below.

It is noted that the zoning, overlays, controls and designations within the designation 6302 have not been considered in this section, as works within the existing corridor will be addressed by an Outline Plan and related resource consent applications. As such the following section only addresses the AUP(OP) zones, overlays and controls affecting the land subject to this alteration to the designation.

**Table 4-1: AUP(OP) zoning description and location**

Zone	Location of works
Special Purpose - Healthcare Facility and Hospital	100 Hospital Road
Residential – Terrace Housing and Apartment Building	12 Wyllie Road 14 Wyllie Road
Residential – Mixed Housing Urban	74D Kenderdine Road 76 Kenderdine Road 1-4/76 Kenderdine Road 78 Kenderdine Road 80 Kenderdine Road 1-3/80 Kenderdine Road 84 Kenderdine Road 88 Kenderdine Road 90 Kenderdine Road 1-11/90 Kenderdine Road 92 Kenderdine Road 1-3/92 Kenderdine Road 8 Bridge Street 9 Bridge Street 10 Bridge Street
Open Space – Informal Recreation	18R Gordon Road 21R Station Road
Residential – Single House	1 Station Road 5 Station Road 9 Station Road 11 Station Road 15 Station Road

Zone	Location of works
	17 Station Road 19 Station Road Council Reserve, Puhinui Road
Business – Mixed Use	64 Rosella Road
Business – Light Industry	212 Cavendish Drive
Business – Heavy Industry	12 Langley Road
Strategic Transport Corridor	SH20
Unzoned – Road	Formed road – Orakau Road Unformed road - Puhinui Station

Table 4-2: AUP(OP) Overlays description and location

Overlays	Description of the overlay	Location of works outside the designation
High-Use Aquifer Management Areas Overlay – Manukau Waitemata and Wiri Volcanic Aquifer	<p>Aquifers are important as direct sources of water supply for domestic, industrial and rural use. They are the major contributors to the base flow of many streams, particularly in the southern parts of Auckland. Aquifers also contribute to the overall quality and diversity of surface waterbodies.</p> <p>Some aquifers are highly allocated, providing water to users as well as being major sources of spring and stream flow. They are currently adversely affected by over pumping or are likely to become highly allocated over the life of the Plan. These aquifers are identified as High-Use Aquifer Management Areas.</p> <p>Aquifers in the High-Use Aquifer Management Areas Overlay require careful management of water availability to meet user needs and at the same time maintain base flows for surface streams.</p> <p>However, it is noted that no groundwater diversion or dewatering is proposed at this time.</p>	<p>1 Station Road 5 Station Road 9 Station Road 11 Station Road 15 Station Road 17 Station Road 19 Station Road 21R Station Road 12 Wyllie Road 14 Wyllie Road 74D Kenderdine Road 76 Kenderdine Road 1-4/76 Kenderdine Road 78 Kenderdine Road 80 Kenderdine Road 1-3/80 Kenderdine Road 84 Kenderdine Road 88 Kenderdine Road 90 Kenderdine Road 1-11/90 Kenderdine Road</p>

Overlays	Description of the overlay	Location of works outside the designation
		92 Kenderdine Road 1-3/92 Kenderdine Road 8 Bridge Street 9 Bridge Street 10 Bridge Street 212 Cavendish Drive 12 Langley Road
Aircraft Noise Overlay – Aircraft noise notification area (ANNA), Auckland Airport and Moderate aircraft noise area (MANA) and High aircraft noise area (HANA)	The purpose of the Aircraft Noise Overlay is to manage the subdivision of land and location of activities sensitive to aircraft noise in areas of high cumulative noise around the region’s airports and airfields, so that the continued operation of the airports and airfields is not compromised, and reverse sensitivity issues are addressed.	This overlay is not relevant to the proposed works as the project is not sensitive to aircraft noise.
Special Character Area Overlay Residential and Business – Residential Station Road Papatoetoe	The purpose of this Overlay is to retain and manage the special character values of specified residential and business areas identified as having collective and cohesive values, importance, relevance and interest to the communities within the locality and wider Auckland Region.  The overlay area is a group of railway workers’ cottages located on Station Road, Papatoetoe. The extent includes a row of seven residential sections (numbers 1, 5, 9, 11, 15, 17 and 19 Station Road).	1 Station Road 5 Station Road 9 Station Road 11 Station Road 15 Station Road 17 Station Road 19 Station Road

Table 4-3: AUP(OP) Controls description and location

Control	Description of the control	Location of works outside the designation
Macroinvertebrate Community Index – Native, Urban and Rural	The Macroinvertebrate Community Index is a guideline for freshwater ecosystem health associated with different land uses within catchments.	This control is not relevant to the proposed works and will be addressed in any future stormwater related resource consent applications for the project.
Stormwater Management Area Control – Flow 2	The Stormwater management area control – Flow 1 and Flow 2 identifies rivers and streams (and their contributing catchments) that are particularly susceptible to the effects of development or have relatively high values.	This control is not relevant to the proposed works and will be addressed in any future stormwater related resource

Control	Description of the control	Location of works outside the designation
	Stormwater management area control – Flow 2 areas typically discharge to streams with moderate to high values and sensitivity to stormwater, but generally with higher levels of existing impervious area within the catchment.	consent applications for the project.

**Table 4-4: AUP(OP) Designation description and location**

Designation	Requiring Authority	Description of the designation	Location of works outside the designation
1102	Auckland International Airport Limited	The purpose of this designation is to protect aeronautical functions.	This designation is not relevant to the proposal as none of the structures proposed are beyond the stipulated height control.
6708	New Zealand Transport Agency/Waka Kotahi (NZTA)	The purpose of this designation is to undertake maintenance, operation, use and improvement to the State Highway network (specifically SH20).	Discussions are ongoing with NZTA regarding the proposed alteration to designation.

### 4.3 Infrastructure and network utilities

Given its urban location, a range of infrastructure and network utilities are present in or adjacent to the corridor. Identified infrastructure assets include:

**Table 4-5: Identified Infrastructure Assets**

Location	Asset Type	Impact
Middlemore Station	Telecommunication Equipment Building	It is proposed to demolish the small building housing Vodafone telecommunication equipment. Given this building is leased, but not owned, by Vodafone New Zealand the relocation of their equipment is being addressed through commercial negotiations.
	ARTA Fibre Optic Cable	A fibre optic cable runs along the western side of the rail corridor, within the area proposed for the third main. This cable will be relocated as part of the proposed works.
	Vector Gas Main	A Vector gas main passes beneath the rail corridor in proximity to Orakau Road. It is not proposed to relocate or alter this asset.
	Culverts	There are two stormwater culverts located at the northern end of the station's footprint. It is proposed to extend both



Location	Asset Type	Impact
		culverts to accommodate the additional track and associated works
	Wastewater	Construction access from Gray Avenue will require crossing over a 1200 mm wastewater pipe. Any on-site wastewater pipes and manholes will be relocated as required.
	Potable Water	No trunk potable water infrastructure is affected by the proposed works, noting that construction access from Gray Avenue will run across an existing water main. Any on-site potable water pipes and manholes will be relocated as required.
Papatoetoe Station	Wastewater	No trunk wastewater infrastructure is affected by the proposed works. Any on-site wastewater pipes and manholes will be relocated as required.
	Potable Water	A 200 mm water main is located immediately south of the St George Street bridge. However, the proposed works will not impact this water main.  Any on-site potable water pipes and manholes will be relocated as required.
	Cell Tower	A large cell site is located within the Park and Ride facility. However, it is outside the area of works and will be unaffected by the project.
	ARTA Fibre Optic Cable	A fibre optic cable runs along the western side of the rail corridor, within the area proposed for the third main.  This cable will be relocated as part of the proposed works.
Bridge Street	Potable Water	No trunk potable water infrastructure is affected by the proposed works. Any on-site potable water pipes and manholes will be relocated as required.
	Wastewater	No trunk wastewater infrastructure is affected by the proposed works. Any on-site wastewater pipes and manholes will be relocated as required.
	ARTA Fibre Optic Cable	A fibre optic cable runs along the western side of the rail corridor, within the area proposed for the third main.  This cable will be relocated as part of the proposed works.
Puhinui Station	ARTA Fibre Optic Cable	A fibre optic cable runs along the eastern side of the rail corridor, within the area proposed for the third main.  This cable will be relocated as part of the proposed works.
212 Cavendish Drive	Potable Water	No trunk potable water infrastructure is affected by the proposed works. Any on-site potable water pipes and manholes will be relocated as required.

Location	Asset Type	Impact
	Wastewater	No trunk wastewater infrastructure is affected by the proposed works. Any on-site wastewater pipes and manholes will be relocated as required.
SH20	Wastewater	No trunk potable water infrastructure is affected by the proposed works.
	Potable Water	No trunk potable water infrastructure is affected by the proposed works.
12 Langley Road	Wastewater	No trunk wastewater infrastructure is affected by the proposed works. Any on-site wastewater pipes and manholes will be relocated as required.
	Potable Water	No trunk potable water infrastructure is affected by the proposed works. Any on-site potable water pipes and manholes will be relocated as required.

In addition to the network utilities described above, two key transport infrastructure assets are located in the area of works considered by this alteration to designation, as noted in Table 4-6<sup>18</sup>. KiwiRail is cognisant of its duties under the Utilities Act and other regulations and is engaging with both AT and other infrastructure providers.

**Table 4-6: Transport Infrastructure in Works Areas**

Location	Asset Type	Impact
Papatoetoe Station	St George Street Bridge	No changes are proposed to this bridge.
Bridge Street	Bridge Street bridge	No changes are proposed to this bridge.
SH20	Road bridges	Minor changes are proposed to these bridges, with these changes subject to ongoing discussions with NZTA.

## 4.4 Notable site features

### 4.4.1 Historic and Cultural Heritage

As detailed in Table 4-2, there are a number of old railway cottages (numbers 1, 5, 9, 11, 15, 17 and 19 Station Road) located at Papatoetoe Station, as well as the original station building which was relocated to 1 St George Street. As such, the original station building, and railway cottage sites feature AUP(OP) historic heritage and special character area overlays respectively. It is noted that the none of the sites affected by this NoR are identified as a 'sites of significance to mana whenua' in the AUP(OP) nor are any within a Statutory Acknowledgement Area. Furthermore, there are no notable trees located in the work areas.

<sup>18</sup> Outside the NoR footprint, the NIMT runs beneath SH20 and over Cavendish Drive.

A review of the Heritage New Zealand (Pouhere Taonga) List indicates that there are no listed or identified heritage places within the proposed works area.

A review of the Cultural Heritage Inventory (CHI List)<sup>19</sup> (Auckland Council GeoMaps) indicates that there are a number of historic structures located within the proposed works area and/or in close proximity to the works area and are summarised in Table 4-7.

**Table 4-7: Summary of the CHI List**

CHI ID	Category	Approximate Location	Description of Works
12488	Historic Structure – Papatoetoe Railway Bridge	Within the rail corridor near Papatoetoe Station	No works proposed.
22893	Archaeological Site – Papatoetoe Railway Station	Within the rail corridor	Works to occur as part of resource consent/Outline Plan of works package.
20007	Historic Structure – building/ dwelling	1, 5, 9, 11, 15, 17 or 19 Station Road	Minor works proposed at rear. Possible partial demolition of modern structures.
20008	Historic Structure – building/ dwelling	1, 5, 9, 11, 15, 17 or 19 Station Road	Minor works proposed at rear. Possible partial demolition of modern structures.
20010	Historic structure – building	1, 5, 9, 11, 15, 17 or 19 Station Road	Minor works proposed at rear. Possible partial demolition of modern structures.
20005	Historic Structure – building/ dwelling	1, 5, 9, 11, 15, 17 or 19 Station Road	Minor works proposed at rear. Possible partial demolition of modern structures.
20009	Historic Structure – building/ dwelling	1, 5, 9, 11, 15, 17 or 19 Station Road	Minor works proposed at rear. Possible partial demolition of modern structures.

<sup>19</sup> The accuracy of coordinates is very variable; some are translations from NZMS 1 or NZ Topo map references. For some places the coordinates only indicate the general vicinity of the place. The information for archaeological sites is shared with the New Zealand Archaeological Association (NZAA) and used in the dataset with their cooperation. As such it is only viewable at 1:25000 and above on the external viewer.



CHI ID	Category	Approximate Location	Description of Works
20006	Historic Structure – building/ dwelling	1, 5, 9, 11, 15, 17 or 19 Station Road	Minor works proposed at rear.  Possible partial demolition of modern structures.
12487	Historic Structure – building/ station	Close to Papatoetoe Station	No works proposed to original station building.
19381	Historic structure – Puhinui Station footbridge	Close to Puhinui Road	No works proposed.
17015	Archaeological Site – Cambria World War Two Camp	Between Puhinui Road (West) and the NIMT	No works proposed outside the NIMT corridor.

#### 4.4.2 Soil Contamination

A Preliminary Site Investigation (PSI) has been undertaken for the affected sites and is attached as Appendix D. A review of historic aerial photography, current land use and Auckland Council records has concluded that most sites are unlikely to contain contaminated soils. The exception to this is 74D Kenderdine Road, which was previously used for greenhouse-based horticulture which is listed as a HAIL activity in the NESCS. As noted in Section 7.4, KiwiRail propose to employ a Site Management Plan (SMP) during construction to address any potential risks/effects associated with the disturbance of contaminated soil during works at this site.

Additional contamination investigations will be undertaken in support of a future land use and discharge consents for the project.

#### 4.4.3 Hydrology

##### 4.4.3.1 Floodplains and overland flow paths

The hydrological features (floodplains and overland flow paths) on the affected properties are described in Table 4-8.

**Table 4-8: Summary of hydrological features**

Location of works	Summary of hydrological features
64 Rosella Road, 100 Hospital Road and Orakau Road	There is a floodplain that covers the entire works area and several overland flow paths that intersect the site.
18R Gordon Road	An overland flowpath intersects the south-western corner of the site and the entire site is a floodplain.

Location of works	Summary of hydrological features
Kenderdine Road properties (74, 1-3/76, 78, 1-3/80, 84, 88, 1-3/92, 1-11/90)	There is an overland flow path at the rear of the properties running from 80 through to 78, 76 and 74. There are no floodplains within the proposed works area and there are no hydrological features within 1-3/92 and 1-11/90.
Station Road properties (1, 5, 9, 11, 15, 17, 19, 21R)	There are no hydrological features within 1-15 Station Road. A minor overland flow path is located within the rear of 17, and another major overland flow path intersects 19 and 21R. A small extent of a floodplain is also located within 19 and 21R.
12 and 14 Wyllie Road	There are two overland flow paths located within the works area on 12 Wyllie Road. However, no floodplains are located within the works area.  There are no hydrological features within 14 Wyllie Road.
Bridge Street properties (8, 9, 10)	There are no hydrological features within the Bridge Street properties.
Puhinui Station	There are two overland flow paths that run parallel to the rail corridor. In addition, a floodplain covers the entire site.
Cavendish Drive	An overland flow path transects the site. However, no floodplains are located within the works area.
SH20	There are no hydrological features within this area of the rail corridor.
Langley Road	There are no hydrological features within the works area.

#### 4.4.4 Watercourses

A single watercourse is located within the land affected by this NoR. This unnamed stream is located at Middlemore Station and runs beneath the NIMT via two culverts that are located at the northern edge of Middlemore Station. These culverts connect to a small section of piped network discharging to a small open stream at the eastern side of the rail corridor, which connects to a tributary of the Tamaki River. These culverts are identified in Figure 4-15 and any works required within the stream are subject the AUP(OP) streamworks rules (a resource consent application will be made at a later date if required). The NIMT also crosses Puhinui Stream near to Wiri Junction. However, no works are proposed to take place in this stream as part of this NoR.



Figure 4-15: Culverts at Middlemore Station

## 5. Assessment of Alternatives

### 5.1 Introduction

When considering a NoR by a Requiring Authority, Auckland Council is required under section 171(1)(b) of the RMA to have particular regard to whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if either:

- a) The Requiring Authority does not have an interest in the land sufficient for undertaking the work; or
- b) It is likely the work will have a significant adverse effect on the environment.

In this instance, KiwiRail does not currently have an interest in the land through which sections of the Project will be constructed and operated as it does not currently own the parcels of land required. An assessment of alternative options was undertaken including the assessment of a “do-nothing” scenario. These are elaborated on in the following section.

### 5.2 Consideration of Alternatives

As discussed in Section 3, KiwiRail has been investigating rail investment options for the Auckland Metro network for more than 10 years. Initial investigations were undertaken to explore whether investment should be targeted at the construction of a new network corridor or redeveloping the existing corridor to accommodate additional rail movements to meet the increasing network demands of both freight and passenger services.

The strategic issues which have affected the decision to upgrade the existing corridor (to accommodate additional rail services) include the following:

- A lack of contiguous undeveloped land in the Auckland urban area providing for an additional north-south rail corridor;
- Significant costs associated with acquiring land and constructing a new corridor;
- Significant risks associated with the designating and consenting a new corridor under the RMA;
- Significant costs associated with the infrastructure required to support a new corridor (e.g. bridges across the Tamaki River or Manukau Harbour);
- Specific engineering requirements required for rail services (e.g. gradients) and the limits that are imposed by relevant New Zealand standards;
- Cost benefits associated with being able to co-locate freight hubs with the existing corridor (e.g. the inland port at Te Papapa);
- Auckland’s current strategic planning framework aligns urban intensification with the existing corridor; and
- The existing corridor can accommodate the majority of works needed to increase network capacity.

While highlighting the benefits associated with improving the function and capacity of the existing corridor (i.e. the NIMT), these reasons limit the practicality of constructing a new heavy rail corridor through Auckland’s urban area.



Having confirmed that investment would focus on upgrading the existing corridor, further investigation and assessment was undertaken to establish the different options available and which one is preferred. Three options were identified within the existing corridor; a 'do nothing' option and a third main being provided along either a western or an eastern alignment. These options are detailed below.

### 5.2.1 Option 1 – Do Nothing Approach

This option does not require additional land outside the existing corridor and relies on current infrastructure to meet the projected demand for both passenger and freight services. This option would rely on maximisation of timetabling and other managerial options to provide additional capacity.

### 5.2.2 Option 2 – Western Alignment

This option is based on the construction of a third main along the western edge of the existing rail corridor and includes the taking of some private and public land (for both temporary construction and permanent occupation), overhead electrified infrastructure, new signals and associated structures, all based on required clearance between and above tracks. It also includes an extended platform at Middlemore Station.

### 5.2.3 Option 3 – Eastern Alignment

This option is based on the construction of a third main along the eastern edge of the existing rail corridor and includes the taking of some private and public land (both for temporary construction and permanent occupation), overhead electrified infrastructure, new signals and associated structures, all based on required clearance between and above tracks. It also includes an extended platform at Middlemore Station.

### 5.2.4 Assessment of Options

A workshop took place on 12 May 2020 and included participants from both KiwiRail and the Jacobs design team. The purpose of the workshop was to enable the team to review the three design options (as described above) and assess them against a series of criteria. The assessment criteria were based on the following areas of interest:

- Operational aspects – improving network capacity and ensuring safety standards;
- Land take – consideration of land requirements and impacts on other infrastructure providers;
- Environmental aspects – impacts from construction, operation, stormwater management and urban design;
- Cultural – impacts on sites, landscape features and environmental values of interest to iwi; and
- Future proofing – future potential rail investment and the 'locking out' of such investments.

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The workshop focused on the areas of each option which would require the acquisition of land outside the existing corridor<sup>20</sup>, with the resulting qualitative assessments detailed below. It is noted that no site-specific mitigation was considered as part of the assessment.

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<sup>20</sup> These areas were the corridor within the vicinity of Middlemore Station, Papatoetoe Station and Bridge Street.

Table 5-1: Summary of Option Assessments

Type of Criteria	Criteria	Option 1 - Do Nothing	Option 2 – Western Alignment	Option 3 – Eastern Alignment
Operational	Provides for increased capacity on rail network.	This option provides limited potential for increased capacity.	A third main line provides for additional services, including express services.	A third main line provides for additional services, including express services.
	Provides for the safe maintenance operations within the rail corridor.	<p>Reduced opportunities for line closures due to demand pressures on the existing network.</p> <p>Limited opportunities to undertake safe and regular maintenance.</p>	<p>Adequate space is provided for maintenance crews to work in a live corridor.</p> <p>Allows for the closure of one track for maintenance and inspections, while still maintaining services on remaining two tracks.</p>	<p>Adequate space is provided for maintenance crews to work in a live corridor.</p> <p>Allows for the closure of one track for maintenance and inspections, while still maintaining services on remaining two tracks.</p> <p>If the middle track is being worked on, due to proximity to third track, it may not be possible to maintain services on the outer tracks</p>
	Provides for the safety of rail users and operators.	Increased services could be provided if separation distances between services are reduced. Increased risk of collisions due to reduction in separation distances.	<p>Additional capacity is provided while still allowing for adequate separation distances between services.</p> <p>Upgrades at Middlemore provide more space for passengers,</p>	<p>Additional capacity is provided while still allowing for adequate separation distances between services.</p> <p>Upgrades at Middlemore provide more space for</p>

Type of Criteria	Criteria	Option 1 - Do Nothing	Option 2 – Western Alignment	Option 3 – Eastern Alignment
		No improvements to existing stations limits opportunities to address station access and CPTED issues.	improved accessibility and provision of security (e.g. CCTV)	passengers, improved accessibility and provision of security (e.g. CCTV)
Land Take Requirements	Minimises or avoids the taking of land	This option would not require any land outside the corridor.	<p>Requires approximately 60 properties, including permanent acquisitions at Middlemore, Papatoetoe and Bridge Street<sup>21</sup>.</p> <p><u>Middlemore Station:</u> Land take required from CMDHB and Kainga Ora. Includes removal of house at Rosella Road in order to provide access to CMDHB site.</p> <p>Permanent acquisition of two residential properties on Station Road (given presence of dwellings in project footprint). Permanent acquisition of business land sought of St George Street bridge.</p>	<p>Requires directly at least 19 properties, including permanent acquisitions at Middlemore, Papatoetoe and Bridge Street.</p> <p><u>Middlemore Station:</u> Would require acquisition of parts of Hospital Road corridor and realignment of road/hospital entrances. A number of properties between Middlemore and Papatoetoe would likely to be affected given proximity of dwellings to the designated corridor.</p> <p><u>Papatoetoe Station:</u> Impacts on Shirley Road properties, given</p>

<sup>21</sup> It should be noted that only 11 of these properties require permanent acquisition, with four of these being able to be redeveloped as residential sites at a later date. Furthermore, 35 of these “sites” are actually held as cross-leases or unit titles, representing 5 underlying land parcels.



Type of Criteria	Criteria	Option 1 - Do Nothing	Option 2 – Western Alignment	Option 3 – Eastern Alignment
			<p>Temporary access required to rear of several residential properties and a Council reserve on Station Road.</p> <p><u>Bridge Street:</u> Requires partial permanent acquisition of five residential properties and permanent acquisition of two entire residential properties. Temporary occupation of four residential properties (Noted that these properties are Unit Title/Cross-leased with multiple ownership).</p>	<p>need to widen the road corridor to east (to address occupation of sections of existing road corridor).</p> <p>Requires permanent acquisition of 1 Station Road, given scale of cut and retaining wall.</p> <p><u>Bridge Street:</u> Would require land from at least seven properties given the need to undertake retaining and the proximity of dwellings to the edge of the designated corridor.</p>
	<p>Minimises or avoids impacts on other infrastructure</p>	<p>The option would not require alterations to other infrastructure assets outside the corridor.</p>	<p><u>Middlemore Station:</u> Requires modification of CMDHB car park, including altering layout and the multi-storey building.</p> <p>Requires the relocation of a telecommunications equipment.</p> <p><u>Papatoetoe Station:</u> Temporary occupation of the rear the Rotary West Reserve is required.</p> <p><u>Bridge Street:</u> No impacts identified.</p>	<p><u>Middlemore Station:</u> Requires partial closure and/or realignment of Hospital Road given location of new station platform.</p> <p>Potential modification of the Middlemore Hospital main building required due to Hospital Road impacts.</p> <p><u>Papatoetoe Station:</u> Requires realignment and/or closure of Shirley Road. This would involve relocation of any</p>

Type of Criteria	Criteria	Option 1 - Do Nothing	Option 2 – Western Alignment	Option 3 – Eastern Alignment
				<p>network utilities in road corridor.</p> <p>Replacement of the St George Street bridge would require relocation of any network utilities present on structure.</p> <p>Relocation of old station building at 1 St George Street likely to be relocated.</p> <p>Potential impacts on Alan Brewster Recreation Centre and Tavern Lane, including construction traffic and noise/vibration. This would impact the amenity of the recreation centre and its usefulness to the local community.</p> <p><u>Bridge Street:</u> No impacts identified.</p>
Environmental	Minimises or avoids adverse construction effects on adjoining sites	Not applicable as no works undertaken.	<p><u>Middlemore Station:</u> Temporary noise and vibration impacts on hospital operations at Orakau Road facilities.</p> <p>Construction traffic impacts on Rosella Road and Gray Avenue. Noted that De La Salle College is</p>	<p><u>Middlemore Station:</u> Temporary noise and vibration impacts on hospital operations at Middlemore Hospital main site.</p>

Type of Criteria	Criteria	Option 1 - Do Nothing	Option 2 – Western Alignment	Option 3 – Eastern Alignment
			<p>located on Gray Avenue near works.</p> <p>Works in corridor occurring in close proximity to a drug treatment centre (12 Orakau Road).</p> <p><u>Papatoetoe Station:</u> Construction traffic impacts on Station Road. Noted that works in close proximity to Papatoetoe West Primary School.</p> <p>Works planned in close proximity to residential properties on Station Road.</p> <p>Potential disturbance of archaeological items at rear of Station Road properties.</p> <p><u>Bridge Street:</u> Works occurring in proximity to residential properties along corridor.</p> <p>Construction traffic on Kenderdine Road could impact residents and Papatoetoe South Primary School.</p>	<p>Construction traffic impacts on Middlemore Hospital and Kings College.</p> <p><u>Papatoetoe Station:</u> Potential construction effects on residents on Shirley Road.</p> <p>Construction traffic impacts on St George Street, including any diversions while road bridge is replaced (nearest alternative rail crossings are at Bridge Street and Massey Road).</p> <p><u>Bridge Street:</u> Works occurring in proximity to residential properties along corridor.</p> <p>Construction traffic on Kenderdine Road could impact residents and Papatoetoe South Primary School</p>

Type of Criteria	Criteria	Option 1 - Do Nothing	Option 2 – Western Alignment	Option 3 – Eastern Alignment
	<p>Minimises or avoids adverse operational effects on adjoining sites</p>	<p>No change to existing situation.</p> <p>No works undertaken to reduce effects.</p>	<p><u>Middlemore Station:</u> Potential long-term noise and vibration effects on Orakau Road CMDHB facilities.</p> <p>Increased traffic flows on Rosella Road, given new car park access off this corridor.</p> <p>Potential long-term noise and vibration effects on 12 Orakau Road.</p> <p><u>Papatoetoe Station:</u> Increased noise and vibration effects on Station Road properties.</p> <p><u>Bridge Street:</u> Increased noise and vibration effects on residential properties adjoining rail corridor.</p>	<p><u>Middlemore Station:</u> Potential long-term noise and vibration effects on Middlemore Hospital main site.</p> <p>Community severance if Hospital Road is closed/modified given its key role in providing access to Massey Road rail overbridge.</p> <p>Requires removal of mature trees present along the rail corridor boundary.</p> <p><u>Papatoetoe Station:</u> Increased noise and vibration effects on Shirley Road properties.</p> <p>Relocation of old station building from 1 St George Street reduces amenity of road corridor and Old Papatoetoe town centre.</p> <p><u>Bridge Street:</u> Increased noise and vibration effects on residential properties adjoining rail corridor.</p>

Type of Criteria	Criteria	Option 1 - Do Nothing	Option 2 – Western Alignment	Option 3 – Eastern Alignment
	Provides for adequate stormwater treatment	No change to existing stormwater treatment and attenuation infrastructure.	New stormwater infrastructure built to Auckland Council's treatment and attenuation standards.	New stormwater infrastructure built to Auckland Council's treatment and attenuation standards.
	Provides for positive urban design outcomes	No change to existing environment.	<p><u>Middlemore Station:</u> Modifications of CMDHB car park facilities provides an opportunity to improve pedestrian linkages (between Orakau Road and Hospital Road) and landscaping.</p> <p>Mature trees on Hospital Road retained.</p> <p><u>Papatoetoe Station:</u> Improved station facilities and pedestrian access provided.</p> <p>Mature trees on Shirley Road retained.</p> <p><u>Bridge Street:</u> Limited impact on local streetscape and built form.</p>	<p><u>Middlemore Station:</u> Improved station access from Middlemore Hospital main site.</p> <p>Loss of mature trees on Hospital Road adversely effects streetscape amenity values.</p> <p><u>Papatoetoe Station:</u> Improved station facilities and pedestrian access provided.</p> <p>Would require removal of mature trees on Shirley Road affecting amenity values.</p> <p>Requires significant retaining south of St George Street bridge with subsequent adverse visual effects.</p> <p>Relocation of old station building at 1 St George Street</p>

Type of Criteria	Criteria	Option 1 - Do Nothing	Option 2 – Western Alignment	Option 3 – Eastern Alignment
				adversely impacts the amenity of Old Papatoetoe town centre.  <u>Bridge Street:</u> Limited impact on local streetscape and built form.
Cultural	Minimises or avoids adverse effects on cultural values	To be completed upon mana whenua engagement.	<u>Middlemore Station:</u> To be detailed upon mana whenua engagement.  <u>Papatoetoe Station:</u> To be detailed upon mana whenua engagement.  <u>Bridge Street:</u> To be detailed upon mana whenua engagement.	<u>Middlemore Station:</u> To be detailed upon mana whenua engagement.  <u>Papatoetoe Station:</u> To be detailed upon mana whenua engagement.  <u>Bridge Street:</u> To be detailed upon mana whenua engagement.
Future Proofing	Does not prevent the future development of the rail corridor.	Does not exclude future corridor improvements.	Does not exclude future corridor improvements.	Would require relocation of numerous existing rail assets, including OLE structures.

### 5.2.5 Summary of Assessment

Considering the assessment detailed in Table 5-1, a "do nothing" option fails to meet the project's objectives. While it does not result in additional environmental effects outside the corridor, it does not provide for the increased demand created both freight and passenger services. In addition, it fails to provide for the redevelopment of Middlemore station and the provision of nine-car EMU services.

Both Options 2 and 3 do provide for additional rail services and future 9-car EMU services at Middlemore station. However, it is considered that Option 2 has reduced environmental effects over Option 3 due to the following:

- It avoids works immediately outside the Galbraith building at Middlemore Hospital;
- It avoids the rearrangement/modification of both Shirley Road and Hospital Road;
- It avoids the replacement of the St George Street bridge;
- It avoids the need to relocate the original Papatoetoe station building;
- It avoids disruptions to the Alan Brewster Centre and Tavern Lane; and
- It avoids the removal of mature trees on Hospital Road and Shirley Road.

### 5.3 Identification of preferred option

Given the results of the assessment process, the preferred option identified to progress to design was the Western Alignment. This route allows the rail corridor to meet additional service demands and accommodate future rail investment, while also minimising potential adverse environmental effects. The chosen alignment does require the acquisition of land outside the corridor, but it avoids significant permanent effects on the functioning of local road networks and the operation of Middlemore Hospital. The Western Alignment also avoids impacting the local amenity values of Old Papatoetoe, allowing for the retention of the original station building in its present location.

Based on the attention given to the consideration of alternatives as summarised above the Project satisfies the requirements of section 171(1)(b) of the RMA.

## 6. Description of Works

The following provides a detailed description of all the works required for the third main between Middlemore and Wiri Junction. It should be noted that most of these works will occur within the existing rail corridor (i.e. are not within the scope of this NoR) and will be subject to a future outline plan and or resource consent applications as required. Any works located outside the existing designated corridor will be highlighted, including within the sites identified by the Land Requirement Plans (Appendix C). In addition, plans of the works are provided as Appendix E.

### 6.1 Finished Works

#### 6.1.1 Third Main

The works include 3.6 km of new rail track between Middlemore and Wiri Junction. This track will be standard New Zealand gauge of 1,067 mm (3 ft 6 in), set on a base of stabilised metal. It will be largely identical in appearance to the two existing tracks in the NIMT corridor.

In addition to the new track, a series of connections and crossovers between the new third main and other track will be constructed. These will enable the movement of trains between the tracks, enabling express or Metro services to bypass slower services and increase network resilience, allowing one train to bypass another immobile train on the NIMT.

Lastly, new OLE structures and signals will be installed along the corridor to enable the safe movement of trains and control rail traffic.

#### 6.1.2 Middlemore Station

As shown in Figure 6-1, Middlemore Station features the largest amount of works outside the existing designation and will be the most recognisable change for both passengers and the general public. It is proposed to extend the station footprint to the west of the existing northbound platform, with both the new third main and an extended northbound platform sitting on land currently used as car parking by CMDHB.

The new third main itself, will sit within an engineered trench to the west of the current northbound platform. It will sit on a stabilised metal base and will be at a level to enable step-free access between trains and the station platform. At the northern end of the station, the third main works will require the extension of two culverts and the minor reclamation of an open watercourse. The final design of these culverts and associated works is still being developed and will be addressed through a future resource consent application under section 13 of the RMA.

The northbound platform will be extensively modified. The northbound platform will be extended by 51m (giving the platform a total length of approximately 206m). In addition, the platform and corridor will be future-proofed for 9-car services.

Given the addition of a new track to the west of the existing northbound platform, it is also proposed to extend to pedestrian footbridge. A new bridge span will be constructed above the third main, with stairs and a lift providing continued pedestrian access from Mangere East to Middlemore Hospital. The new bridge span is proposed to be identical to the existing span, both in width and height. A pedestrian bridge is also proposed at the northern end of the station, connecting to Hospital Road.

Further modifications are proposed at the southern end of the site, with a new entrance/exit from the staff-only multi-storey carpark building. These works are required given the clash between the extended pedestrian bridge



and the current entry/exit to the carpark building. Other minor works at this location include improving the footpaths between Orakau Street and the station.

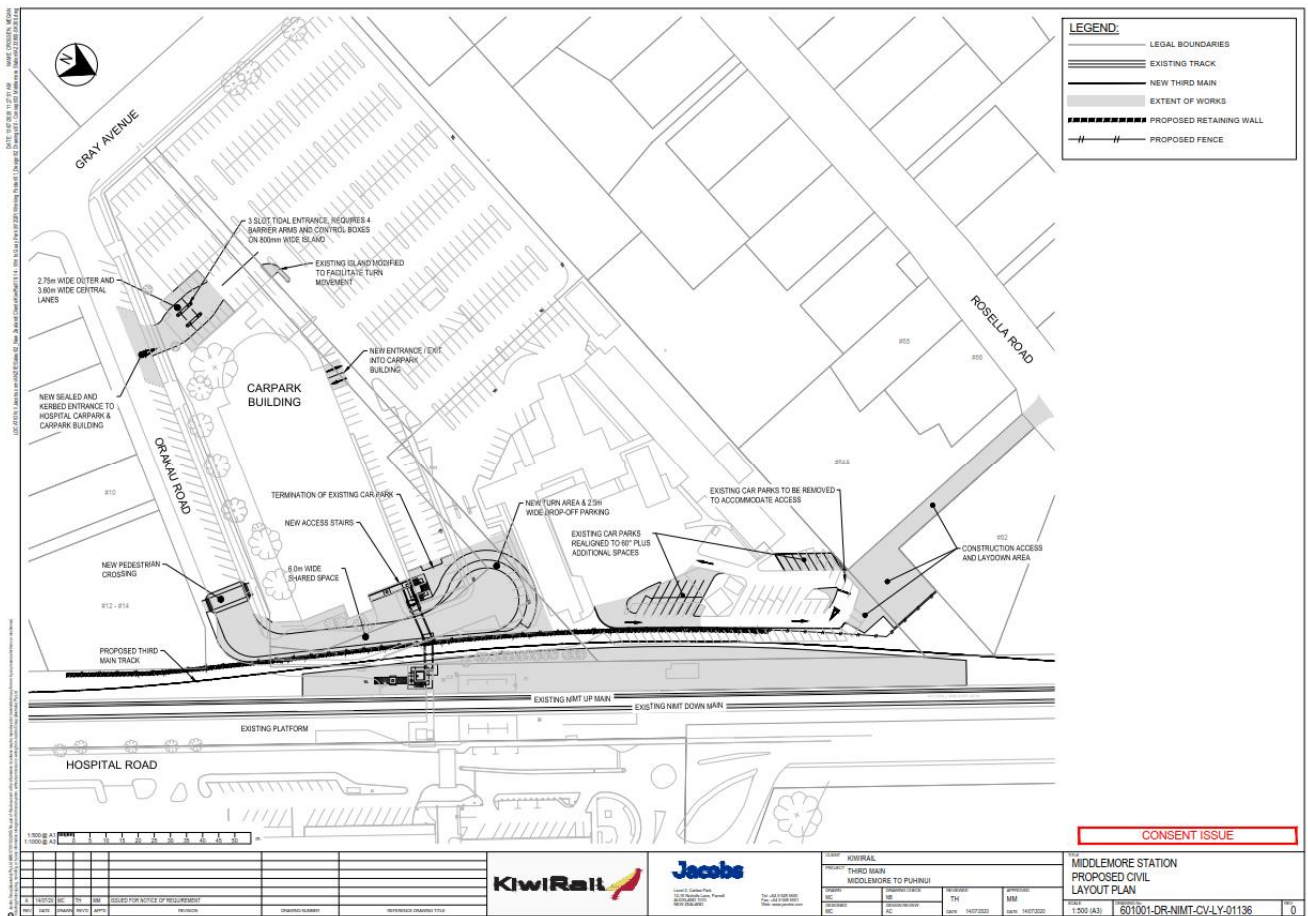


Figure 6-1: Proposed Works at Middlemore Station

### 6.1.3 Papatōetoe Station

Minor works are proposed at Papatōetoe Station, principally to accommodate the third main. These works are largely limited to new retaining walls on the western edge of the corridor (at the rear of Station Road properties). The third main will run below the existing St George Street bridge, with minor retaining and slope stabilisation proposed south of the bridge.

The station platforms, shelters and pedestrian bridge will remain unchanged by the proposed works.

### 6.1.4 Puhinui Station

Minor works are proposed at Puhinui Station to accommodate the third main. These works include a short length of a fourth main and the construction of a turnout<sup>22</sup> in the existing NIMT designation. It is also proposed to include an area of road reserve (an unformed road) into the designation to allow for future proofing. Lastly, the eastern access to the site will be provided across a council reserve, with this reserve also being used as a laydown area<sup>23</sup>.

<sup>22</sup> A turnout is a mechanical installation enabling trains to be guided from one track to another.

<sup>23</sup> This area of council reserve is currently occupied by the laydown area and construction accessway for the Puhinui Interchange project.

### 6.1.5 Utilities

Minor utility relocation works will be required during construction. As noted in Table 4-5, the proposed works largely avoid any trunk infrastructure (with the exception of crossing over a 1200 mm wastewater pipe at Gray Avenue and a 200 mm water main at St George Street).

The majority of utility works will entail the relocation of minor wastewater and potable water reticulation assets, such as manholes and associated connections. Any such works will be discussed with affected landowners and utility providers to ensure that the relocated or new assets meet relevant standards.

### 6.1.6 Overhead Works

The third main will be equipped with the OLE infrastructure required to operate EMUs. This will include high voltage overhead lines and their support poles along the length of the corridor. In addition, safety shields will be installed on any bridges crossing the corridor to prevent vandalism or falling debris from hitting the lines.

### 6.1.7 Stormwater Infrastructure

The NIMT will be serviced by a variety of stormwater infrastructure. This infrastructure will be purposed to address stormwater quality and volumes in accordance with relevant Auckland Council regulations and guidance documents. Resource consents will be obtained if required.

As mentioned in Section 5.1.2, the works at Middlemore will require the extension of two culverts. These culverts currently run under the NIMT, connecting a small watercourse to a tributary of the Tamaki River. Engagement with Auckland Council's Healthy Waters department will be undertaken, and the relevant resource consents sought once detailed design has been completed.

### 6.1.8 Bridges

As described in Section 5.1.2, the pedestrian bridge at Middlemore Station will be extended to provide access over the new third main. The extension will feature an additional lift tower and stairway to connect the bridge to Orakau Street and the CMDHB car park. In addition, a new emergency egress bridge is proposed at the northern end of the station.

No other works to bridges along the corridor (e.g. St George Street or Bridge Street) are proposed.

## 6.2 Construction Phase

### 6.2.1 Timing and Duration of Works

Construction of the works provided for by Package 2 is proposed to commence in mid-2021 and will take up to three years to complete<sup>24</sup>. The works will be completed in four stages to minimise disruption to rail services and the wider community.

While most works will occur during standard construction hours (i.e. Monday to Saturday - 7.30 am to 6.00 pm), some night-time, Sunday and public holiday works will be needed to enable line closures (Blocks of Line). These

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<sup>24</sup> Other works at Quay Park, Wiri Junction and Westfield Junction are scheduled from mid-2020 onwards.

non-standard construction hours are required given the need to protect workers safety and the inability to undertake some works in a live rail corridor. Additional detail regarding management and mitigation of effects will be provided as required as part of the Outline Plan process.

### 6.2.2 Site Yards

Three site yards are proposed for the project. The main site yard will be located at Middlemore, with secondary yards located at Gordon Park, Papatoetoe Station and Puhinui Station. The yards will be securely fenced to prevent public access and will be disassembled at the completion of works.

### 6.2.3 Access

As noted in the Transport Impact Assessment (TIA), construction access will be provided at several locations along the corridor. Given the grade differences between the rail and neighbouring road corridors along most of the project, it is necessary to provide access through neighbouring sites (e.g. the Papatoetoe Station Park and Ride). Alternatively, access is needed to undertake top down construction (e.g. Bridge Street works) or demolition. A summary of construction access arrangements is provided as Table 5-1 below.

Any vehicle crossings for construction vehicles will be built in accordance with AT standards, with kerbs and crossings being reinstated to residential/commercial standards at the completion of works if required. In addition, KiwiRail will employ a Construction Traffic Management Plan (CTMP) for the duration of works and proposes to submit a draft CTMP with the outline plan. The CTMP will also address project vehicle volumes and types, any restrictions on vehicle movements (e.g. during school drop off/pick up hours) and construction traffic routes to and from the project.

**Table 6-1: Construction Access Arrangements**

Location	Purpose	Involves land take
64 Rosella Road, Mangere East	Construction of third main at Middlemore and extension of Middlemore Station.	Yes
100 Hospital Road, Mangere East	Construction of third main at Middlemore, extension of Middlemore Station and alterations to CMDHB car park.	Yes
Road Reserve – Orakau Road	Access to rail corridor.	Yes
Road Reserve – Opposite 115A Gray Avenue	Access to rail corridor from road reserve.	No
18 Gordon Road	Access to rail corridor from a Council reserve.	Yes
Park and Ride, Papatoetoe Station	Access to rail corridor.	Yes
5 and 9 Station Road, Papatoetoe	Demolition of rear structures to enable retaining wall works.	Yes

Location	Purpose	Involves land take
12 and 14 Wyllie Road, Papatoetoe	Access to rail corridor.	Yes
8 Bridge Street, Papatoetoe	Access to 10 Bridge Street to enable retaining wall construction.	Yes
Puhinui Road Terminus (West), Puhinui Station	Access to rail corridor from road reserve.	No
Puhinui Road Terminus (East) Puhinui Station	Access to rail corridor.	Yes
212 Cavendish Drive	Access to rail corridor.	Yes
12 Langley	Access to rail corridor.	Yes

#### 6.2.4 Erosion and Sediment Control

It is noted that given the projected scale of earthworks within the project's footprint, resource consent under section 9(2) of the RMA will be required. As part of this future resource consent application, a detailed Erosion and Sediment Control Plan (ESCP) will be prepared in accordance with Auckland Council's Guidance Document 05 (GD05).

#### 6.2.5 Contaminated Soil Management

As noted in Section 4.4.2, the only identified HAIL site (where earthworks are required) is located at 74D Kenderdine Road. The works at this site will be subject to a SMP, while resource consents under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS) and AUP)OP) will be sought.

## 7. Assessment of Effects on the Environment

Pursuant to the Fourth Schedule of the Resource Management Act 1991, the following assessment is provided on the actual and potential effects that can be reasonably expected from the proposed works.

The assessment of effects has taken into account the existing environment as detailed in Section 4, including<sup>25</sup>:

- The existing NIMT designed corridor, Strategic Transport corridor zone and associated rail services; and
- The Puhinui Interchange Project.

As the works proposed are already provided for by the existing designation, this assessment of effects is limited to those associated with land acquisition and works occurring on sites currently outside the existing corridor. All physical works will be addressed via an outline plan and resource consent application.

### 7.1 Positive Effects

The project will deliver significant benefits to the Auckland Region as described in Sections 2 and 3, given the increased capacity for both public transport and freight services. Increasing the capacity of the NIMT is critical for Auckland and will support the current and future demand on the existing services and leverage off existing rail investment in the existing rail corridor. A third main and new crossovers will enable bypassing, reducing the frequency of blocked track and cancelled services and improving the resilience of the rail network.

The positive environmental benefits include a reduction in greenhouse gas emissions, given the reduced emissions generated by rail freight when compared to road-based freight. Emission reductions will also be provided by helping move Aucklanders onto public transport and reducing dependence on private motor vehicles.

Community wellbeing is supported by the inclusive nature of passenger rail services, given that they will improve accessibility to places of learning, earning and community participation for rail users. In addition, moving freight onto rail will help reduce road accident rates and improve road safety.

The proposed works have also been designed to integrate with the local environment. At Middlemore Station, this has involved in ensuring safe pedestrian movements to and from the station, as well as improved linkages between both hospital sites. Elsewhere, the proposed works will be largely limited to retaining walls, while the public reserves affected by the works will be restored to their pre-construction state at the completion of works.

Overall, the proposed works are anticipated to have a positive effect by increasing the capacity and the resilience of the rail network for both passengers and freight, whilst also providing positive environmental benefits associated with reduced greenhouse gas emissions, increased community wellbeing and integration with the local environment.

### 7.2 Noise and Vibration

An assessment of the noise and vibration effects generated within the designation, including the additional land proposed to be acquired, has been undertaken by Marshall Day Acoustics (Appendix F). Given the difference in the source and scale of effects anticipated by the construction and operational phases of the project, both phases are discussed separately.

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<sup>25</sup> The assessment of a proposal's adverse effects against the existing environment is an established principle in law (Hawthorn Estate Limited NZRMA 424). Under this case, the existing environment may include unimplemented resource consents and utilisation of rights to carry out permitted activities under a district or regional plan. It does not include future possible resource consents or the ecological potential of waterbodies.

### 7.2.1 Construction Effects

Infrastructure related construction is a common activity in the Auckland urban area and is anticipated by the AUP(OP). While such noise and vibration effects can disrupt amenity value, they are generally short-lived and can be minimised through a variety of management practices.

Common noise and vibration activities are anticipated to include:

- Piling for retaining walls, the pedestrian bridge at Middlemore Station and OLE support structures;
- Demolition of existing structures;
- Bulk earthworks; and
- Laying of rail sleepers.

While most works will be undertaken during standard construction hours, it will be necessary to undertake some works during night-time hours or on public holidays. This is due to the need to protect worker and rail user safety within an active rail corridor, by avoiding clashes between trains and construction activities and minimising disruption of services while the works take place.

As noted by the noise and vibration assessment, a guide to related construction effects can be found in Rule E25.6.27 of the AUP(OP), which details general construction noise levels in the urban area<sup>26</sup>. This rule states that construction activities outside existing designated corridors should meet noise standards detailed in Table 7-1.

Table 7-1: Noise limits at occupied buildings sensitive to noise

Time of week	Time period	Noise criteria	
		dB L <sub>Aeq</sub>	dB L <sub>Amax</sub>
Weekdays	0630-0730	60	75
	0730-1800	75	90
	1800-2000	70	85
	2000-0630	50	80
Saturdays	0630-0730	50	80
	0730-1800	75	90
	1800-2000	50	80
	2000-0630	50	80
Sundays and public holidays	0630-0730	50	80
	0730-1800	60	90
	1800-2000	50	80
	2000-0630	50	80
All other buildings			
	0730-1800	75	-
	1800-0730	80	-

<sup>26</sup> This rule relates to "Construction noise levels for activities sensitive to noise in all zones except the Business – City Centre Zone and the Business – Metropolitan Centre Zone".



While these standards would generally apply outside a designated corridor, it is noted that the controls of Rule E25.6.29 provide a more useful baseline for assessment as they relate to infrastructure works within a road<sup>27</sup>. This rule states that while the noise levels detailed in Table 7-1 do apply, so do the following exemptions:

- Where the number of nights where the noise limits are exceeded at any one receiver is 20 days or less;
- If high noise activities, such as concrete cutting and breaking, are completed by 10.30pm;
- If the works cannot practicably be undertaken during the day, or the Requiring Authority requires the works to be undertaken at night;
- That a works access permit from the Requiring Authority is provided to Council; and
- A construction noise and vibration plan (CNVMP) is provided to the Council no less than five days prior to the works commencing in accordance with the applicable provisions of Standard E25.6.29 (5).

It is noted that the proposed construction methodology would meet these exemptions, with any night-time or public holiday works limited to those strictly required to occur during low rail traffic or line closures. Given this, KiwiRail proposes to follow the recommendation of the noise and vibration assessment, with the submission of a CNVMP with the future Outline Plan. The CNVMP would include:

- The performance standards that must, as far as practicable, be complied with to enable a consistent approach for adaptive management protocol;
- Predicted noise and vibration levels for relevant equipment and/or activities;
- Construction noise and vibration mitigation and management measures (e.g. noise barriers);
- Noise and vibration monitoring requirements; and
- Communication, consultation and complaints response procedures.

Furthermore, the CNVMP will also identify any incidences where works are predicted or measured in exceedance of 60 dB L<sub>Aeq</sub> at night. This noise level will be used as a trigger to identify potentially affected parties and introduce site specific mitigation as required. A similar management approach has been employed on earlier transport projects, including the Auckland Electrification Project (AEP), CRL and recent Puhinui Interchange Upgrade projects. It is noted that there are no activities affected by the NoR related works that would trigger an alternative approach.

The controls of E25.6.30.1 are a useful assessment baseline from which to assess the potential effects of vibration resulting from construction. E25.6.30.1 states that that construction vibration must be controlled to ensure it does not exceed the limits set out in *German Standard DIN 4150-3:1999 "Structural Vibration - Effects of Vibration on Structures"*. These limits are designed to avoid cosmetic damage, such as cracking plaster, and are much lower than those that cause structural damage (Table 7-2).

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<sup>27</sup> This rule relates to "Construction noise and vibration levels for work within the road".

Table 7-2: DIN – 4150 Cosmetic Building Damage Vibration Thresholds

Line	Type of structure	Guideline values for velocity, $v_i$ , in mm/s of vibration in horizontal plane of highest floor, at all frequencies
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	10
2	Dwellings and buildings of similar design and/or occupancy	5
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings under preservation order)	2.5

In addition, the AUP(OP) also recognises building occupants can be disturbed by vibration levels significantly below those identified above and so sets out the vibration amenity limits detailed in Table 7-3. However, these amenity vibration limits may be exceeded for periods of up to three days of intensive daytime works with a vibration limit of 5mm/s, provided receivers within 50 m of the works receive prior communication. In addition, given the proximity of the works to the existing rail corridor, it is highly likely that the 0.3mm/s limit is already exceeded by rail operations<sup>28</sup>.

Table 7-3: Occupied Building Amenity Vibration Limits

Receiver	Period	Peak Particle Velocity Limit (mm/s)
Occupied activity sensitive to noise (e.g. dwelling)	Night-time 10pm to 7am	0.3
	Daytime 7am to 10pm	2
Other occupied buildings	At all times	2

Using these controls as a baseline, the noise and vibration assessment has identified that the majority of construction vibration effects associated with the alteration to designation can be addressed through the use of a CNVMP. In addition to the CNVMP matters raised previously, the following measures will be included:

- Consultation with any predicted affected landowners to understand their sensitivities;
- Pre-construction building condition surveys prior to commencing activities with the potential to exceed the cosmetic building damage thresholds and monitoring undertaken to verify the predicted levels and compliance (or otherwise);
- Including measures to stop works and manage any cosmetic damage caused; and
- Avoiding, where possible, high vibration generating activities during night-time hours.

<sup>28</sup> It is noted that such vibrations are provided for by the current designation.

Given the use the CNVMP, the proposed works will have no more than minor construction noise and vibration effects, with these effects limited to the following sites:

- 100 Hospital Road;
- 12 Orakau Road;
- 62 and 64A Rosella Road;
- 16 and 16 Gordon Road; and
- 5 Clendon Avenue

### 7.2.2 Operational Effects

With regard to operational noise and vibration effects, it is noted that there are no applicable limits specified in the existing designation or adjoining Strategic Transport Corridor zone. As noted by the specialist assessment (Appendix F), the current AUP(OP) maximum noise limits are of limited use when assessing the project's noise limits. Rather, an assessment has been made using the following:

- KiwiRail Reverse Sensitivity Guidelines;
- New Zealand Rail Noise Performance Standards; and
- International Rail Noise Performance Standards.

Utilising these standards, the following noise thresholds have been developed and will be applied at the façade of any dwelling or care facility within 100m of the land subject to this alteration to the designation:

- Day (0700 – 2200): 65 dB  $L_{Aeq}$  and increase of 3 dBA, or 85 dB  $L_{AFmax}$  and increase of 3 dBA; and
- Night (2200 – 0700): 60 dB  $L_{Aeq}$  and increase of 3 dBA, or 85 dB  $L_{AFmax}$  and increase of 3 dBA

Where the above criterion cannot be complied with, mitigation will be employed. This would either be in the form of a noise barrier (where this is practicable) or improved sound insulation and/or mechanical ventilation to achieve an internal noise level of no more than:

- 40 dB  $L_{Aeq(0700 - 2200)}$  and 35 dB  $L_{Aeq(2200 - 0700)}$ ; or
- 60 dB  $L_{AFmax}$  at all times

Using these standards and modelling, the following properties have been identified as being potentially subject to operational noise effects:

- 100 Hospital Road;
- 10A Orakau Road
- 12 Orakau Road;
- 52 Rosella Road;
- 54 Rosella Road;
- 60 Rosella Road; and

- 3/64A Rosella Road.

KiwiRail proposes to undertake engagement with the owners of these properties in order to perform operational monitoring and enter into third party agreements (where needed) to address any potential noise and vibration effects on these properties.

In addition, it is noted that there are no operational vibration limits imposed on the existing designation or in the Strategic Transport Corridor zone. However, KiwiRail do employ their own reverse sensitivity guidelines to manage potential operational vibration effects.

Given the above, the project will have no more than minor adverse noise and vibration operational effects.

### 7.3 Effects from Land Disturbance

Land disturbance is proposed to occur within the land required by this alteration to designation, given the need to undertake works such as site clearances, laydown area establishment, station works at Middlemore, retaining wall construction and track laying (as described in Section 6). Land disturbance has the potential to generate adverse effects, primarily from dust generation and sediment laden discharges. While a land use consent for the bulk earthworks for the entirety of the third main works will be sought at a later date, KiwiRail can confirm that an Erosion and Sediment Control Plan (ESCP) will be employed for the duration of construction. The ESCP will be prepared in accordance with Auckland Council Guideline Document 2016/005 (GD05) and will be subject to council certification.

While the final controls employed through the ESCP cannot be confirmed at this stage, they are likely to include the following:

- Dust control measures;
- Avoiding the stockpiling of fill;
- Avoiding the stockpiling of fill in flood prone areas or overland flow paths (OLFPs);
- Removal of material to licensed cleanfill or managed fills; and
- Staged land disturbance.

Overall, given the scale and duration of the proposed works along with the implementation of an ESCP, any erosion and sediment runoff effects are less than minor.

### 7.4 Soil Contamination Related Effects

A Preliminary Site Investigation (PSI) has been prepared in support of this alteration to designation (Appendix D). This assessment found that soil contamination is only potentially present at 74D Kenderdine Road, given its historic use for horticulture.

Regardless, it is noted that resource consents under the NESCS and AUP(OP) will be likely required for the wider third main works and as part of this future resource consent application a site management plan (SMP) will be employed across the entire project footprint. The SMP will include the following controls:

- Dust minimisation;
- Certification of fill disposal;

- Contaminant testing protocols;
- Measures to protect public health; and
- Erosion and sediment controls.

Given the use of these standard controls, it is considered that any soil contaminant related effects are less than minor.

## 7.5 Transport Effects

Given the scale of works proposed and the potential for both construction and operation related transport effects, a transport impact assessment (Appendix G) has been undertaken. The effects of the proposal have been separated into those related to construction and those related to the ongoing operation of the local road network.

### 7.5.1 Construction effects

As noted in Table 6-1, a range of construction access points are proposed by this alteration to designation. The potential construction traffic effects from each of these access points include:

- Traffic congestion caused by construction related traffic;
- Temporary loss of on-street parking;
- Conflicts and safety risks arising between pedestrians and construction traffic at Middlemore Station and Middlemore Hospital;
- Conflicts and safety risks between construction traffic and industrial activity traffic at 212 Cavendish Drive;
- Traffic safety risks arising from heavy vehicles entering and exiting work areas; and
- Traffic safety risks associated with heavy vehicles operating near schools (e.g. Papatoetoe West School).

In order to limit these potential effects, KiwiRail proposes to utilise a Construction Traffic Management Plan (CTMP). The CTMP will be developed in consultation with AT and will include controls such as the following:

- Defined routes to and from construction sites for heavy vehicles to manage congestion and ensure road safety;
- Temporary traffic control measures employed to allow the safe entry and exit of construction traffic;
- Restrictions on traffic movements during peak hours/school drop off and pick up times;
- Safety measures to separate pedestrians from construction traffic at Middlemore Station, Gordon Reserve the Papatoetoe Park and Ride facility, Cavendish Drive, Langley Road and Puhinui Road; and
- The temporary relocation of bus stops.

The CTMP will be provided with a future Outline Plan for certification by Auckland Council. Given the use of a CTMP, it is considered that the construction traffic related effects will be less than minor.

### 7.5.2 Operational effects

The only permanent changes to traffic flows and access will occur at Middlemore Station, with:

- A new access off Rosella Road; and
- The alteration of Orakau Road's northern terminus.

As noted in the TIA, the proposed access of Rosella Road meets AUP(OP) access requirements and can provide the safe movement of vehicles to and from the road corridor. The TIA also identifies that the access will not degrade the safe operation of the local road network. Sightlines to and from the accessway allow for safe vehicle movements, while the intersections of Gray Avenue/Rosella Road and Massey Road/Rosella Road can safely accommodate any additional traffic generated by the proposed access. As such, it is not currently proposed to undertake any alterations to the carriageway of Rosella Road (e.g. install no-parking signs). Furthermore, adequate sightlines exist both to and from the accessway, thereby preventing any safety issues for pedestrians crossing the vehicle access. In addition, a minor alteration at the northern terminus of Orakau Road is also proposed, with the kerb line being pushed slightly to the south. This alteration will not affect the function of Orakau Road or any neighbouring vehicle crossings<sup>29</sup>.

Lastly, engagement with CMDHB<sup>30</sup> and AT is being undertaken in regard to the final design of the new Rosella Road accessway and modification to Orakau Road. The final design of both features will also be confirmed via a future Outline Plan and any required resource consent applications.

Given the above, it is considered that the operational traffic effects of the project will be less than minor.

### 7.6 Effects on Vegetation

With regard to effects on vegetation, it is noted that the majority of trees marked for removal or trimming are not subject to general tree protection in the AUP(OP), located in a significant ecological area or classified as notable trees. Regardless, an arboricultural assessment has been prepared in support of the alteration to designation (Appendix H). While the removal and alteration of mature vegetation has been minimised where possible, the requirement to provide clearance between vegetation and tracks/OLE will require specific works to three generally protected trees as part of this NoR<sup>31</sup>:

- Works within the rootzone of a Himalayan cedar (*Cedrus deodara*) on Orakau Road;
- Removal of a rimu (*Dacrydium cupressinum*) at Papatoetoe Station; and
- Works within the rootzone of a London plane tree (*Platanus x acerifolia*) at Papatoetoe Station.

As noted in the arborist report, additional works are proposed to trees within the corridor, but these are provided for by the existing designation.

The adverse effects of works to trees are limited. Tree removal has been limited to three trees (which are subject to AUP(OP) protection) with all works proposed to be undertaken in accordance with best practice as well as the opportunity to offset any loss of ecological services and carbon sequestration through the use of replacement planting. While only three replacement trees are required to offset the above works, KiwiRail will follow the

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<sup>29</sup> It is noted that a new vehicle crossing from 100 Hospital Road onto Orakau Road is proposed. However, this crossing does not form part of this NoR and will be addressed through a future resource consent package for the works.

<sup>30</sup> Ongoing discussions with CMDHB include potential leasing of the Rosella Road accessway and associated laydown area as car parking post-construction.

<sup>31</sup> As protected by the general protection rules of the AUP(OP)'s Chapter E26 (Infrastructure). These rules provide general protection for trees within open space zones and the road reserve. Trees in special purpose, residential, strategic transport corridor or business zones are not protected.



arborist recommendation to plant twelve 45 L trees to offset all the tree works proposed between Middlemore and Wiri.

In order to manage and mitigate the effects of these tree works, KiwiRail propose the following:

- The removal, trimming and rootzone works affecting mature trees will be undertaken by a suitably qualified arborist employing arboricultural best practice;
- Any pest species will be disposed of appropriately;
- A landscaping plan for Middlemore Station will be provided with the Outline Plan for certification by Auckland Council, including twelve 45 L replacement trees.

KiwiRail also proposes to engage with mana whenua, CMDHB and AT in the development of the Middlemore Station landscaping plan, to ensure that the it addresses both the cultural values associated with native flora and meets hospital and AT operational requirements.

Furthermore, works at Gordon Reserve and 21 Station Road will be addressed through further engagement with Auckland Council's Community Facilities team regarding preferred methods to protect other trees in these reserves.

Given the above, the alteration to the rail designation will have less than minor effects resulting from vegetation related works.

### 7.7 Historic Heritage

As noted in Section 4.4.1 and the desktop heritage assessment (Appendix I), there are a number of heritage sites and items of interest within and adjoining the NIMT. The greatest concentration of these heritage features is at Papatoetoe Station with:

- The railway cottages on Station Road;
- Archaeological remains of the pre-1900 Papatoetoe Station; and
- The original Papatoetoe station building.

As noted in the heritage assessment, the railway cottages were constructed in 1928. While this is later than the pre-1900 limit for archaeological protection under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA), given their proximity to the possible archaeological remains of the original station, the works at cottage sites (as well as works within the corridor) will be addressed through an archaeological authority from Heritage New Zealand Pouhere Taonga (HNZ). While further field investigations will be undertaken to determine what, if any, archaeological items of interest may be in-situ, the authority will detail the measures that KiwiRail will be required to employ for both archaeological preservation and recording.

In addition, the project's alignment avoids any adverse effects on the original Papatoetoe Station building at 1 George Street. An eastern alignment for the third main would have required significant modifications to 1 George Street (requiring relocation of the station building), however the selected western alignment avoids any such works and allows for the heritage values of this building to be retained at this location.

No other protected historic heritage items are known to be impacted by the NoR and given the above the alteration to the rail designation will have less than minor effects on historic heritage.

## 7.8 Visual Amenity

KiwiRail recognise the need to ensure that the finished Middlemore Station and associated work contributes to the visual amenity values of the surrounding area. The detailed design of the station is yet to be undertaken and will be provided to Auckland Council as part of a future Outline Plan. Visual amenity will be enhanced by:

- Incorporating elements of storytelling/cultural history into the design of the pedestrian bridges and station platform changes (e.g. using patterned pressed concrete panelling and story boards). These design aspects will be developed following further engagement with mana whenua and the Māngere-Ōtāhuhu local board;
- Preparation of a landscaping plan (to be provided to Auckland Council as part of the Outline Plan) that includes the use of native fauna to soften the station's appearance from Orakau Road;

Elsewhere along the NIMT, the works proposed by this alteration to designation are generally limited to new retaining walls or OLE related structures. These walls will be similar to those already present along the NIMT and will match existing amenity values. Furthermore, it is noted that the retaining walls at the Kenderdine Road and Bridge Street sites are located below the adjoining residential sites, limiting their ability to impact on the visual amenity of the surrounding area.

Some visual amenity effects will also occur at Gordon Park due to its use for corridor access and as a laydown area. However, these effects are temporary and the park will be restored to its current appearance following construction. In addition, the laydown area will be screened to obscure views of construction equipment and materials. KiwiRail will also explore the opportunity, through engagement with Auckland Council's Community Facilities team, to provide vegetation to screen the corridor from users of Gordon Park.

Similar to Gordon Park, some temporary visual effects will occur at the Puhinui Station works, primarily due to the use of the council reserve as a construction laydown yard and site accessway. However, the laydown yard will be screened to block views into the site and the site will be reinstated at the end of construction.

Lastly, it is noted that the proposed alignment avoids any effects on visually significant buildings, including the railway cottages on Station Road and the original station building at 1 St George Street. This ensures that the visual amenity values associated with these buildings are retained, further limiting the overall visual amenity effects of the proposed works associated with this alteration to designation.

Given the above, the overall visual effects of the alteration to designation are no more than minor.

## 7.9 Cultural Values

While there are several heritage features located within the works area, none of sites to be included in this are located within the Sites and Places of Significance to Mana Whenua overlay or have notable trees.

KiwiRail recognises the importance cultural sites and notes the pā at Mutukaroa (Hamblins Hill), Ōtāhuhu (Mount Richmond) and Matukutūruru (Wiri) given their proximity to the corridor. While considered to be unlikely, there is the potential that the earthworks in the land required by this NoR may result in the disturbance of cultural artefacts. Given this potential, KiwiRail will obtain an archaeological authority from HNZ.

Mana whenua have noted their interest in the detailed design of Middlemore Station and the landscaping that will be undertaken as part of the project. KiwiRail will continue to engage with mana whenua and incorporate appropriate cultural elements into Middlemore Station's design, as well as seek their feedback in response to the proposed species and layout of the project's landscaping.

Lastly, KiwiRail is working with mana whenua to gain further understanding of the project's cultural effects and what additional mitigation may be required.

### 7.10 Natural Hazards

There are two existing types of natural hazards that are present at sites within this alteration to designation – flooding and land instability.

With regard to flooding, a high-level flooding assessment has been prepared (Appendix J). It notes that the area around Middlemore Station is subject to flooding due to its proximity to the Tamaki River, the existing stormwater infrastructure (600mm and 1200mm diameter pipes) and the rail corridor acting as a dam. The detailed design of the project will address the stormwater attenuation requirements and the flooding issues associated with the Middlemore Station site. This attenuation will be designed in accordance with Auckland Council's Technical Standards (TP108).

KiwiRail infrastructure that will be located within overland flowpaths or floodplain will be designed to be flood resilient, thereby minimising the potential for flood water to impact on either rail service reliability or the safety of rail users. In addition, ensuring that any flood risk is not increased by the design nor shifting the risk to downstream properties.

With regard to land instability, retaining walls are required due to the slope from the residential properties to the rail corridor. The retaining walls will be subject to a fully engineered design process and subject to quality assurance checks during construction.

Overall, it is considered that any potential effects from flooding and/or land instability will be managed during the design and construction process to ensure that any hazard related effects are less than minor.

### 7.11 Effects on Housing Supply

It is noted that the proposed works will result in the partial or full demolition of six dwellings as shown in Table 7-4:

**Table 7-4: Effects on Housing Supply**

Site	Reason needed
62 Rosella Road	Required for construction access and laydown area.
5 Station Road	Required for retaining wall construction and occupation.
9 Station Road	Required for retaining wall construction and occupation.
3/80 Kenderdine Road	Required for retaining wall construction and occupation.
9 Bridge Street	Required for retaining wall construction and occupation.
10 Bridge Street	Required for retaining wall construction and occupation.

Although KiwiRail will seek to minimise the scale of demolition required, the above sites will be unavailable for residential purposes until at least the completion of works and the uplift of the designation. The six affected residential sites will be released back to the residential market at the completion of construction, with the three properties in the Residential – Mixed Housing Urban Zone having the potential to be redeveloped into multi-unit developments<sup>32</sup>. In addition, the two front cottages at 5 and 9 Station Road will be retained, allowing for their reuse as single dwellings. However, it is recognised that there will be direct effects on the occupants/owners of each of the abovementioned sites. Given this, KiwiRail has commenced engagement with these parties to both purchase the sites and negotiate handover dates to minimise disruption to occupants.

It is also noted that while the project will cause a temporary loss of six residential sites, it is critical to the sustainable delivery of the residential development across the entire Auckland region. As noted in Section 2.4, Auckland is experiencing significant population growth and will soon pass two million residents. Much of this population growth is planned to occur in South Auckland, both around existing town centres (like Old Papatoetoe) and in greenfield areas along the NIMT. Without W2QP, it would be difficult for the Metro rail network to support this urban growth and delays to the delivery of new housing would occur. This in turn would have a greater adverse effect on housing supply than the proposed temporary loss of six residential sites.

### 7.12 Summary

The proposed works will have positive effects associated with increasing the capacity and the resilience of the rail network for both passengers and freight, whilst also contributing to a quality compact urban environment, and limiting the potential effects on the environment.

The actual and potential effects associated with construction and operational noise and vibration, land disturbance/earthworks, contamination, construction traffic and operational traffic, visual, vegetation, historic heritage and special character, cultural values, natural hazards and housing supply can be appropriately managed and mitigated.

Overall, the effects of this alteration to designation 6302 are no more than minor.

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<sup>32</sup> 80 Kenderline Road, 9 Station Road and 10 Station Road.

## 8. Consultation and Engagement

KiwiRail has undertaken consultation with a range of stakeholders, including those directly affected by the proposed works. Unfortunately, the ability to undertake consultation has been impacted by the social isolation requirements of the Covid-19 lockdown and as a consequence, further consultation and engagement is proposed following the lodgement of this NoR.

The following section details the consultation and engagement undertaken at the time of lodgement and identifies what other interactions with stakeholders are planned in the later stages of the project.

### 8.1 Consultation with Landowners

Engagement with affected landowners (i.e. those whose land is required by this NoR) was commenced in mid-June 2020. This involved sending letters detailing the project, its impacts on their land, the Public Works Act (PWA) process and the planned RMA related approvals/processes. This engagement will be ongoing as the project's design is developed and the various steps associated with land under the PWA occur.

### 8.2 Consultation with Mana Whenua

A virtual hui was hosted by KiwiRail on 2 June 2020 with mana whenua identified by Auckland Council as having an interest in the Māngere-Ōtāhuhu and the Ōtara-Papatoetoe Local Board areas. At this hui matters included:

- Working towards an improved relationship;
- An overview of the project, including how it intersects with other Auckland Metro upgrade projects;
- The consenting process and progress made with technical assessments; and
- Areas of mana whenua interest.

A subsequent hui was held on 15 June 2020 in which a detailed walk through of the proposed works on the corridor was undertaken. Discussion was also had in relation to who would be completing the archaeological assessment and how a CIA for the project would be undertaken. A site visit was then organised for 9 July to visit sites of interest.

### 8.3 Consultation with CMDHB

KiwiRail has an ongoing programme of engagement with CMDHB, most recently involving a joint site walkover and workshop in late May 2020. Key issues for CMDHB include the effects of the alteration to designation on their site access and parking at Orakau Road, as well as the integration of the extended pedestrian bridge with the existing car park building. KiwiRail propose to continue engagement to secure a positive design outcome for CMDHB and KiwiRail.

#### 8.4 Consultation with Auckland Transport

KiwiRail also has an ongoing relationship and partnership with AT. Engagement with AT is focused on addressing their requirements for passenger safety and service requirements (given AT operate passenger services), as well as potential effects on the local road network. This engagement will continue as detailed design is undertaken.

#### 8.5 Pre-Application with Auckland Council Regulatory Services

A pre-application meeting was held by KiwiRail and its agents with Auckland Council regulatory staff on 21 May 2020. The meeting was used to brief Auckland Council's planning staff (from the Resource Consents and Plans and Places teams) on the wider W2QP Project. Matters discussed included the programme of works, the types of RMA applications that would be lodged with the council and the technical investigations being undertaken in support of those applications.

#### 8.6 Consultation with Local Boards

KiwiRail held meetings with both the Māngere-Ōtāhuhu and the Ōtara-Papatoetoe Local Boards in mid-May 2020. These meetings were used to brief Local Board members on the scope of the W2QP and on the potential impacts/land takes required to construct the third main of the NIMT. Issues raised by the Local Boards included:

- Interaction between Middlemore Station and hospital facilities;
- Potential for access improvements at Papatoetoe Station;
- The engagement of local residents as part of the construction workforce;
- Avoiding traffic disruption e.g. closure of the St George Street bridge;
- The importance of rail services to the local community; and
- The need to maintain public safety.

KiwiRail will continue to engage with the Local Boards through the remainder of the Project and will seek their input as detailed design is undertaken.



## 9. Notification Assessment

The test that must be considered by the Consent Authority when deciding whether or not to publicly notify a NoR are set out in section 169 of the RMA.<sup>33</sup>

With regard to notification, KiwiRail does not request public notification.<sup>34</sup> There are no relevant rules or national environmental standards which require notification,<sup>35</sup> and the proposal will generate no more than minor adverse effects<sup>36</sup>. It is acknowledged that the works will have effects on the sites identified in Table 9-1 given the undertaking of works within their boundaries.

As such, KiwiRail requests that Auckland Council gives notice of the NoR to the owners of these sites:

**Table 9-1: Landowner Details for Required Land**

Property address	Legal Description	Type of Ownership
64 Rosella Road, Mangere East	Lot 13 DP 19494	TBC
100 Hospital Road, Papatoetoe	Allotment 237 Parish of Manurewa, Part Lot 13 DP 2989	Public - CMDHB
Road Reserve – Orakau Road	N/a	Public – AT
18R Gordon Road, Papatoetoe	Lot 53 DP 20068, Pt Allot 36 Psh of Manurewa	Public - Auckland Council
1 Station Road, Papatoetoe	Lot 7 DP 111628	Private
5 Station Road, Papatoetoe	LOT 6 DP 111628	Private
9 Station Road, Papatoetoe	LOT 5 DP 111628	Private
11 Station Road, Papatoetoe	Lot 4 DP 111628	Private
15 Station Road, Papatoetoe	Lot 3 DP 111628	Private
17 Station Road, Papatoetoe	Lot 2 DP 111628	Private
19 Station Road, Papatoetoe	Lot 1 DP 111628	Private
21R Station Road, Papatoetoe	Lot 9 DP 111628	Public - Auckland Council
12 Wyllie Road, Papatoetoe	Lot 1 DP 152288	Private
14 Wyllie Road, Papatoetoe	Pt Lot 1 P 136372	Private
74D Kenderdine Road, Papatoetoe	Lot 5 DP 327717, ¼ SH Lot 6 DP 327717	Private
76 Kenderdine Road, Papatoetoe	PT LOT 30 DP 16605	Private

33 This cross refers to sections 149ZCB(1) to (4), 149ZCC(1) to (4), 149ZCE, and 149ZCF and provides that these sections apply with "all necessary modifications.

34 Section 149ZCB(2)(b).

35 Section 149ZCB(2)(c).

36 Section 149ZCB(2)(a).

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Property address	Legal Description	Type of Ownership
1/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 1 DP 80955	
2/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 2 DP 80955	
3/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 3 DP 80955	
4/76 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Flat 4 DP 80955	
78 Kenderdine Road, Papatoetoe	Pt Lot 30 DP 16605, Pt Lot 31 DP 16605	Private
80 Kenderdine Road, Papatoetoe	LOT 1 DP 135948	Private
1/80 Kenderdine Road, Papatoetoe	LOT 1 DP 135948, FLAT 1 DP 135948	
2/80 Kenderdine Road, Papatoetoe	LOT 1 DP 135948, FLAT 2 DP 135948	
3/80 Kenderdine Road, Papatoetoe	LOT 1 DP 135948, FLAT 3 DP 135948	
84 Kenderdine Road, Papatoetoe	Lot 1 DP 70381	Private
1/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 1 DP 10238	
2/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 2 DP 10238	
3/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 3 DP 10238	
4/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 4 DP 10238	
5/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 5 DP 10238	
6/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 6 DP 10238	
7/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 7 DP 10238	

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Property address	Legal Description	Type of Ownership
8/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 8 DP 10238	
9/84 Kenderdine Road Papatoetoe Auckland 2025	LOT 1 DP 70381, FLAT 8 DP 10238	
88 Kenderdine Road, Papatoetoe	Lot 2 DP 70381	Private
90 Kenderdine Road Papatoetoe 2025	LOT 34 DP 16605	Private
1/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 1 DP 102388,	
2/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 2 DP 102388,	
3/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 3 DP 102388, CARPORT 3 DP 102388	
4/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 4 DP 102388,	
5/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 3 DP 102388, CARPORT 5 DP 102388	
6/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 6 DP 102388,	
7/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 7 DP 102388,	
8/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 8 DP 102388, CARPORT 8 DP 102388	
9/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 9 DP 102388,	
10/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 10 DP 102388,	
11/90 Kenderdine Road, Papatoetoe	LOT 34 DP 16605, FLAT 11 DP 102388, CARPORT 11 DP 102388	
92 Kenderdine Road, Papatoetoe	LOT 2 DP 82259	Private
1/92 Kenderdine Road, Papatoetoe	LOT 2 DP 82259, FLAT 1 DP 89779, CARPORT 1 DP 89779	Private
2/92 Kenderdine Road, Papatoetoe	LOT 2 DP 82259, FLAT 2 DP 89779,	

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Property address	Legal Description	Type of Ownership
3/92 Kenderdine Road, Papatoetoe	LOT 2 DP 82259, FLAT 3 DP 89779,	
8 Bridge Street, Papatoetoe	Lot 21 DP 21411	Private
9 Bridge Street, Papatoetoe	Lot 27 DP 21411	Private
10 Bridge Street, Papatoetoe	Lot 22 DP 21411	Private
Council reserve, Puhinui	N/A	Public
Road Reserve – Puhinui Road	N/A	Public
212 Cavendish Drive, Manukau	Sect 8 SO 501086	Private
SH20	N/A	Public – KiwiRail/NZTA
12 Langley Road, Manurewa	Lot 2 DP 371368	Private

In addition to the above affected landowners, we consider that the other following parties (Table 9-2) should receive notice of the alteration to designation given the project's potential adverse effects (as identified in Section 7):

**Table 9-2: Other Potentially Affected Parties**

Property address	Legal Description	Reason
10A Orakau Road, Mangere East	LOT 1 DP 39040	Potential operational noise and vibration effects.
12 Orakau Road, Mangere East	LOT 1 DP 314756	Noise and vibration effects during construction and operation of the third main. Potential operational noise and vibration effects.
52 Rosella Road, Mangere East	LOT 7 DP 19404	Noise and vibration effects during construction and operation of the third main. Potential operational noise and vibration effects.
54 Rosella Road, Mangere East	LOT 8 DP 19404	Noise and vibration effects during construction and operation of the third main.
60 Rosella Road, Mangere East	LOT 11 DP 19404	Noise and vibration effects during construction and operation of the third main.

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Property address	Legal Description	Reason
		Potential operational noise and vibration effects.
62 Rosella Road, Mangere East	LOT 12 DP 19404	Noise and vibration effects during construction and operation of the third main.
Unit 1 64A Rosella Road, Mangere East	UNIT 1 DP 485779	Noise and vibration effects during construction and operation of the third main
Unit 2 64A Rosella Road, Mangere East	UNIT 2 DP 485779	Noise and vibration effects during construction and operation of the third main
Unit 3 64A Rosella Road, Mangere East	UNIT 3 DP 485779	Noise and vibration effects during construction and operation of the third main
Unit 4 64A Rosella Road, Mangere East	UNIT 4 DP 485779	Noise and vibration effects during construction and operation of the third main
Unit 5 64A Rosella Road, Mangere East	UNIT 5 DP 485779	Noise and vibration effects during construction and operation of the third main.
16 Gordon Road, Papatoetoe	LOT 54 DP 20068	Adjoins worksite and NIMT access point at Gordon Reserve.
1/16 Gordon Road, Papatoetoe Auckland	LOT 54 DP 20068, FLAT 1 DP 111700	Adjoins worksite and NIMT access point at Gordon Reserve.
2/16 Gordon Road, Papatoetoe Auckland	LOT 54 DP 20068, FLAT 2 DP 111700	Adjoins worksite and NIMT access point at Gordon Reserve.
5 Clendon Avenue, Papatoetoe	LOT 5 DP 18630	Adjoins worksite and NIMT access point at Puhinui Station.

Following iwi engagement, KiwiRail also requested the following hapū are included in the limited notification of the alteration to designation (in no particular order):

- Ngāi Tai ki Tāmaki Tribal Trust;
- Ngāti Maru Runanga Trust;
- Ngāti Tamaoho Trust;
- Ngāti Tamaterā Treaty Settlement Trust;
- Te Ara Rangatū o Te Iwi o Ngāti Te Ata Waiohū;
- Ngāti Whanaunga Incorporated;

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- Te Runanga o Ngāti Whātua;
- Te Kawerau Iwi Settlement Trust;
- Te Ākitai Waiohūa Iwi Authority;
- Te Patukirikiri Iwi Trust;
- Te Whakakitenga o Waikato Incorporated;
- Makaurau Marae Māori Trust;
- Ngāti Paoa Iwi Trust; and
- Ngāti Whātua o Ōrākei Trust Board.

It is noted that the NoR is for the alteration of an existing rail designation and the adverse effects of this alteration are limited to either the sites required for works or adjoining properties. Minor infrastructure upgrades are a common occurrence in the Auckland urban area and the works addressed by this NoR are similar in scale to other projects across the region. Furthermore, there are no unusual aspects to the works nor are works proposed in culturally or ecologically sensitive locations. As such, it is considered that there are no 'special circumstances' that exist to justify the public notification of this application<sup>37</sup>.

Thus, it is considered that public notification of the application is not required, and the application can be processed on a limited notified basis.

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37 Section 149ZCB(4).



## 10. Statutory Considerations

The following statutory assessment is provided in accordance with those sections of the RMA applicable to a NoR.

### 10.1 Section 171 Assessment

#### 10.1.1 Section 171(1) – Effects on the Environment

This section of the Act requires that regard is given to any actual and potential effects on the environment of allowing the requirement.

An assessment of the actual and potential environmental effects as a result of implementing the proposed works is included in Section 7 of this AEE. It was determined that the works associated with this alteration to designation would have no more than minor adverse effects, with these effects addressed through both the use of management plans and the project's detailed design. The AEE has also identified that the project will have significant positive effects for local communities and the wider Auckland region given the role it will have in providing improved rail services both intra and inter-regionally.

#### 10.1.2 Section 171(1)(a)(i) – National Policy Statement

It is noted that the following National Policy Statements are relevant to the proposed works:

National Policy Statement on Urban Development Capacity (NPS-UDC)

*Objective Group A – Outcomes for planning decisions*

*OA1: Effective and efficient urban environments that enable people and communities and future generations to provide for their social, economic, cultural and environmental wellbeing.*

*OA3: Urban environments that, over time, develop and change in response to the changing needs of people and communities and future generations.*

*Objective Group C – Responsive planning*

*OC1: Planning decisions, practice and methods that enable urban development which provides for social, economic, cultural and environmental wellbeing of people and communities and future generations in the short, medium and long term.*

Comment

The provision of effective and efficient urban environments is reliant on transport networks which can adequately serve the community. As noted in Sections 2 and 3 of the AEE, significant population growth is projected in the Auckland urban area of the next 30 years. When this population growth is coupled with the anticipated increase in freight demand, the proposed works are critical to delivering a rail network which meets the objectives of the NPS-UDC. Without the proposed works both the economic and social wellbeing of Aucklanders would be adversely affected, while a lack of adequate rail services would also likely result in increased greenhouse gas emissions.

Furthermore, the proposed works will provide greater opportunities for the efficient movement of freight and workers, greater accessibility for residents to recreation and education and provide improved connectivity for

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South Auckland's communities to the wider region. Lastly, improved rail services will also assist in reducing traffic congestion, greenhouse gas emissions and will help reduce road accident rates.

Given these factors, the alteration to the designation is consistent with the NPS-UDC.

National Policy Statement for Freshwater Management (NPS-FM)

### Objective A1

*To safeguard:*

- a) *The life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystem, of fresh water; and*
- b) *The health of people and communities, as affected by contact with fresh water;*

*In sustainably managing the use and development of land, and of discharges of contaminants.*

### Objective D1

*To provide for the involvement of iwi and hapū, and to ensure that tangata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.*

### Comment

While the effects on freshwater values from required streamworks and contaminant discharges will be addressed by future resource consent applications, it is noted that this NoR will provide for earthworks which could adversely affect freshwater values. In order to address this an ESCP will be developed in accordance with GD05 and implemented during construction to limit the potential discharge of sediment into the surrounding environment. The use of an ESCP will ensure that the freshwater values associated with any receiving environments (e.g. the stream at Middlemore Station or Puhinui Stream) will be safeguarded.

In addition, KiwiRail have engaged with local iwi to help identify key cultural issues associated with the project. This engagement will continue following lodgement of this alteration to designation and will inform the future outline plan and resource consents for the third main works.

Given the above, this alteration to the designation is consistent with the NPS-FM.

### 10.1.3 Section 171(1)(a)(ii) – New Zealand Coastal Policy Statement

This section of the Act requires that regard is given to any relevant provisions of a New Zealand Coastal Policy Statement (NZCPS). As the project is not located in the coastal environment, the NZCPS is not considered relevant.

### 10.1.4 Section 171(1)(a)(iii) – Regional Policy Statement or Proposed Regional Policy Statement

Section 104(1)(b)(v) of the Act requires that regard is given to any relevant provisions of a regional policy statement or proposed regional policy statement.

The relevant provisions of the AUP(OP) Regional Policy Statement are provided in Table 10-1.

**Table 10-1: Auckland Unitary Plan Regional Policy Statement provisions**

Reference	Objective/Policy	Is the Proposal Consistent	Comment
Urban growth and form	<p><u>Objectives B2.2.1</u></p> <p>(1) A quality compact urban form that enables all of the following:</p> <ul style="list-style-type: none"> <li>(a) a higher-quality urban environment;</li> <li>(b) greater productivity and economic growth;</li> <li>(c) better use of existing infrastructure and efficient provision of new infrastructure;</li> <li>(d) improved and more effective public transport;</li> <li>(e) greater social and cultural vitality;</li> <li>(g) reduced adverse environmental effects.</li> </ul> <p>(2) Urban growth is primarily accommodated within the urban area 2016 (as identified in Appendix 1A).</p> <p>(3) Sufficient development capacity and land supply is provided to accommodate residential, commercial, industrial growth and social facilities to support growth.</p> <p><u>Policies B2.2.2</u></p> <p>(4) Promote urban growth and intensification within the urban area 2016 (as identified in Appendix 1A), enable urban growth and intensification within the Rural Urban Boundary, towns, and rural and coastal towns and villages, and avoid urbanisation outside these areas.</p>	Yes	<p>The project enables a quality compact urban form given the role that public transport provides in serving both greenfield and brownfield development.</p> <p>Furthermore, the project provides for resilient and reliable transport connections through additional corridor capacity and reducing the service disruptions caused by malfunctioning locomotives. Such transport connections are critical to successful urban development given their role in reducing congestion and improving intra-regional connectivity.</p> <p>The project makes good use of existing infrastructure and through additional investment, provides additional network capacity for both freight and passenger services with minimal adverse environmental effects.</p> <p>In addition, by increasing network capacity the project increases the accessibility of Auckland's residents to work, study, cultural and recreational opportunities. This helps support greater social and cultural vitality in Auckland.</p> <p>The increased freight capacity will also support the economic development of the region, improves its economic linkages to other regions and supports the long-term plans of the POA.</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
			<p>Lastly, KiwiRail have also sought to minimise the environmental effects of the project, such as by avoiding the relocation of the historic Papatoetoe station building or the undertaking of significant alterations to the road corridor of Shirley Road. The use of management plans for both construction related traffic and noise/vibration will also assist in minimising its potential adverse effects.</p>
	<p><u>Objectives B2.3.1</u></p> <p>(1) A quality-built environment where subdivision, use and development do all of the following:</p> <ul style="list-style-type: none"> <li>(a) respond to the intrinsic qualities and physical characteristics of the site and area, including its setting;</li> <li>(b) reinforce the hierarchy of centres and corridors;</li> <li>(c) contribute to a diverse mix of choice and opportunity for people and communities;</li> <li>(d) maximise resource and infrastructure efficiency;</li> <li>(e) are capable of adapting to changing needs; and</li> </ul> <p><u>Policies B2.3.2</u></p> <p>(1) Manage the form and design of subdivision, use and development so that it does all of the following:</p> <ul style="list-style-type: none"> <li>(a) supports the planned future environment, including its shape, landform, outlook, location and relationship to its surroundings, including landscape and heritage;</li> <li>(b) contributes to the safety of the site, street and neighbourhood;</li> <li>(c) develops street networks and block patterns that provide good access and enable a range of travel options;</li> </ul>	<p>Yes</p>	<p>KiwiRail has sought to ensure that the upgrade of Middlemore Station aligns with other existing land uses.</p> <p>In particular, it is proposed to connect the extended pedestrian bridge to the CMDHB multi-storey car park. This will improve linkages between the two hospital sites and provide CMDHB staff a more direct route between the car park and the main hospital site. At ground level, the proposed works will include improved pedestrian movements to and from the station.</p> <p>While detailed design of Middlemore Station will be provided as a future Outline Plan, KiwiRail is cognisant of local board and community interest in the station design. Given this, KiwiRail will progress the station design in consultation with the Māngere-Ōtāhuhu Board, mana the CMDHB and mana whenua.</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<ul style="list-style-type: none"> <li>(d) achieves a high level of amenity and safety for pedestrians and cyclists;</li> <li>(e) meets the functional, and operational needs of the intended use; and</li> <li>(f) allows for change and enables innovative design and adaptive re-use.</li> </ul> <p>(2) Encourage subdivision, use and development to be designed to promote the health, safety and well-being of people and communities by all of the following:</p> <ul style="list-style-type: none"> <li>(a) providing access for people of all ages and abilities;</li> <li>(b) enabling walking, cycling and public transport and minimising vehicle movements; and</li> <li>(c) minimising the adverse effects of discharges of contaminants from land use activities (including transport effects) and subdivision.</li> </ul>		<p>Furthermore, a landscape plan will be provided to Auckland Council as part of a future Outline Plan.</p> <p>In addition, the detailed station design will incorporate Crime Prevention Through Environmental Design (CPTED) principles to ensure the safety of both CMDHB staff and the general public.</p> <p>The works at Middlemore Station will also maintain accessibility for people of all ages and abilities. This includes providing step free access to the station platforms and improved footpaths between the station and Orakau Road.</p> <p>KiwiRail has also sought to minimise the use of large retaining walls in the other sections of the corridor. While some additional walls are proposed, they will blend into the current character of the wider rail corridor.</p> <p>Lastly, KiwiRail will minimise any adverse effects from discharges of contaminants through future resource consent applications and an associated SMP.</p>
Infrastructure	<p><u>Objectives B3.2.1</u></p> <ul style="list-style-type: none"> <li>(1) Infrastructure is resilient, efficient and effective.</li> <li>(2) The benefits of infrastructure are recognised, including: <ul style="list-style-type: none"> <li>(a) providing essential services for the functioning of communities, businesses and industries within and beyond Auckland;</li> <li>(d) providing for public health, safety and the well-being of people and communities;</li> </ul> </li> </ul>	Yes	<p>The proposed works will ensure that the NIMT is resilient, efficient and effective given the extra network capacity provided.</p> <p>As noted in section 0, the proposed works will provide significant benefits to Auckland residents and businesses. The additional rail network capacity provided will allow for the projected service demands on the NIMT. The</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<p>(e) protecting the quality of the natural environment;</p> <p>(3) Development, operation, maintenance, and upgrading of infrastructure is enabled, while managing adverse effects on:</p> <p>(a) the quality of the environment and, in particular, natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character;</p> <p>(b) the health and safety of communities and amenity values.</p> <p>(4) The functional and operational needs of infrastructure are recognised.</p> <p>(8) The adverse effects of infrastructure are avoided, remedied or mitigated.</p> <p><u>Policies B4.2.2</u></p> <p>(1) Enable the efficient development, operation, maintenance and upgrading of infrastructure.</p> <p>(2) Recognise the value of investment in existing infrastructure.</p> <p>(6) Enable the development, operation, maintenance and upgrading of infrastructure in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character while ensuring that the adverse effects on the values of such areas are avoided where practicable or otherwise remedied or mitigated.</p> <p>(8) Avoid, remedy or mitigate the adverse effects from the construction, operation, maintenance or repair of infrastructure.</p>		<p>project also helps support the AUP(OP)'s urban growth model, thereby supporting the wider strategic objectives of Auckland Council.</p> <p>In addition, additional rail capacity helps reduce dependence on road vehicles to move both passengers and freight, thereby reducing congestion, road accidents and regionwide GHG emissions.</p> <p>While some minor adverse effects are anticipated, these are largely limited to the construction phase and can be addressed using standard management practices (e.g. a CTMP).</p> <p>Lastly, the works generally avoid any sensitive ecological, cultural or historic heritage items. Works at Papatoetoe Station will be undertaken in accordance with an archaeological authority from HNZ to ensure any heritage features are appropriately protected and recorded.</p> <p>Lastly, the streamworks at Middlemore Station will be addressed through a future resource consent application under s13 of the RMA.</p>
Transport	<p><u>Objectives B3.3.1</u></p> <p>(1) Effective, efficient and safe transport that:</p> <p>(a) supports the movement of people, goods and services;</p> <p>(b) integrates with and supports a quality compact urban form;</p>	Yes	<p>As previously discussed, the NoR will help provide additional rail network capacity, thereby supporting the ongoing movement of people, goods and services as Auckland grows. This additional capacity has been integrated with the planned quality compact urban</p>



Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<p>(c) enables growth;</p> <p>(d) avoids, remedies or mitigates adverse effects on the quality of the environment and amenity values and the health and safety of people and communities; and</p> <p>(e) facilitates transport choices, recognises different trip characteristics and enables accessibility and mobility for all sectors of the community.</p> <p><u>Policies B3.3.2</u></p> <p>(1) Enable the effective, efficient and safe development, operation, maintenance and upgrading of all modes of an integrated transport system.</p> <p>(2) Enable the movement of people, goods and services and ensure accessibility to sites.</p> <p>(3) Identify and protect existing and future areas and routes for developing Auckland’s transport infrastructure.</p> <p>(4) Ensure that transport infrastructure is designed, located and managed to:</p> <p>(a) integrate with adjacent land uses, taking into account their current and planned use, intensity, scale, character and amenity; and</p> <p>(b) provide effective pedestrian and cycle connections.</p> <p>(5) Improve the integration of land use and transport by:</p> <p>(a) ensuring transport infrastructure is planned, funded and staged to integrate with urban growth;</p> <p>(7) Avoid, remedy or mitigate the adverse effects associated with the construction or operation of transport infrastructure on the environment and on community health and safety.</p>		<p>growth model and provides a transport network which provides for TODs and urban intensification.</p> <p>The works are also integrated with existing land uses, such as ensuring that the extended pedestrian bridge connects to the CMDHB car park building. The station upgrade at Middlemore also provides for differently abled persons, with step free access available to and from trains.</p> <p>KiwiRail has also sought to minimise any adverse effects, including avoiding the relocation of the original Papatoetoe Station building, minimising the number of retaining walls required and employing a range of construction management practices.</p> <p>It is also noted that the use of the NoR is necessary to protect the upgraded NIMT from conflicting land uses. Without the additional area being designated development along the corridor alignment will prevent construction of the third main, having regionwide effects to further developing the integrated transport network.</p> <p>In particular, this would impact on KiwiRail’s ability to upgrade the corridor and meet projected rail service demand. In this situation, the ability for the rail corridor to provide the rail services required by future population growth and freight operators would be adversely affected, with subsequent adverse</p>

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Reference	Objective/Policy	Is the Proposal Consistent	Comment
			impacts on the economic and social wellbeing of the community.

10.1.5 Section 171(1)(a) – Plan or Proposed Plan

This section of the Act requires that regard is given to any relevant provisions of a plan or proposed plan.

The relevant provisions of the AUP(OP) are summarised in Table 10-2.

Table 10-2: Relevant AUP(OP) provisions

Reference	Objective/Policy	Is the Proposal Consistent	Comment
Water quality and integrated management	<p><u>Objectives E1.2</u></p> <p>(1) Freshwater and sediment quality is maintained where it is excellent or good and progressively improved over time in degraded areas.</p> <p>(2) The mauri of freshwater is maintained or progressively improved over time to enable traditional and cultural use of this resource by Mana Whenua.</p> <p>(3) Stormwater and wastewater networks are managed to protect public health and safety and to prevent or minimise adverse effects of contaminants on freshwater and coastal water quality.</p> <p><u>Policies E1.3</u></p> <p>(10) Avoid as far as practicable, or otherwise minimise or mitigate adverse effects of stormwater diversions and discharges, having particular regard to:</p> <ul style="list-style-type: none"> <li>(a) the nature, quality, volume and peak flow of the stormwater runoff;</li> <li>(b) the sensitivity of freshwater systems and coastal waters, including the Hauraki Gulf Marine Park;</li> <li>(c) the potential for the diversion and discharge to create or exacerbate flood risks;</li> <li>(d) options to manage stormwater on-site or the use of communal stormwater management measures;</li> <li>(e) practical limitations in respect of the measures that can be applied; and</li> <li>(f) the current state of receiving environments.</li> </ul> <p>(14) Adopt the best practicable option to minimise the adverse effects of stormwater discharges from stormwater network and infrastructure including road, and rail having regard to all of the following:</p> <ul style="list-style-type: none"> <li>(a) the best practicable option criteria as set out in section 2 of the Resource Management Act 1991;</li> </ul>	Yes	<p>The water quality effects of proposed works will be captured in future resource consents for both bulk earthworks and the potential disturbance and discharge of soil contaminants. While the detailed design of wider corridor improvements has yet to be confirmed, it is noted that KiwiRail proposes to employ both an ESCP and a SMP during construction.</p> <p>The details of both management plans will be addressed through future resource consent applications, but these documents will be consistent with relevant Auckland Council guidelines (e.g. GD05).</p> <p>The proposed stormwater design will also be developed in the detailed design phase. However, the stormwater management used for the works addressed by this alteration to the rail designation will be designed in accordance with relevant Auckland Council guidance documents (e.g. GD01).</p> <p>In addition, KiwiRail has engaged with mana whenua regarding the cultural effects of the proposed works. This engagement will be ongoing and used to develop the detailed design, which itself will be subject to both an Outline Plan and resource consent applications.</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<ul style="list-style-type: none"> <li>(b) the reasonable timeframes over which adverse effects can be avoided as far as practicable, or otherwise minimised or mitigated;</li> <li>(c) the scale and significance of the adverse effects;</li> <li>(d) infrastructure investment priorities and the consequences of delaying infrastructural improvements in other areas;</li> <li>(e) the ability to prevent or minimise existing adverse effects having regard to the effectiveness and timeframes of other feasible methods, including land use controls;</li> <li>(f) opportunities to integrate with other major infrastructure projects or works;</li> <li>(g) the need to maintain and optimise existing stormwater networks and provide for planned land use and development; and</li> <li>(h) operational requirements and space limitations.</li> </ul>		
Land disturbance - district	<p><u>Objectives E11.2</u></p> <p>(1) Land disturbance is undertaken in a manner that protects the safety of people and avoids, remedies or mitigates adverse effects on the environment.</p> <p><u>Policies E11.3</u></p> <p>(1) Avoid where practicable, and otherwise, mitigate, or where appropriate, remedy adverse effects of land disturbance on areas where there are natural and physical resources that have been scheduled in the Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character.</p> <p>(2) Manage the amount of land being disturbed at any one time, to:</p> <ul style="list-style-type: none"> <li>(a) avoid, remedy or mitigate adverse construction noise, vibration, odour, dust, lighting and traffic effects;</li> <li>(b) avoid, remedy or mitigate adverse effects on accidentally discovered sensitive material; and</li> </ul>	Yes	<p>As previously noted, an ESCP will be employed for the duration of the project's construction phase. The ESCP will be developed in accordance with the requirements of GDO5 and will be submitted as part of a future land use resource consent application for bulk earthworks. This resource consent application will also incorporate any related matters raised by mana whenua.</p> <p>While some earthworks are proposed to the properties at Station Road, land disturbance is limited to these site's rear boundaries and will be subject to the controls of an archaeological authority by HNZ.</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<p>(c) maintain the cultural and spiritual values of Mana Whenua in terms of land and water quality, preservation of wāhi tapu, and kaimoana gathering. maintain the cultural and spiritual values of Mana Whenua in terms of land and water quality, preservation of wāhi tapu, and kaimoana gathering.</p> <p>(3) Enable land disturbance necessary for a range of activities undertaken to provide for people and communities social, economic and cultural well-being, and their health and safety.</p> <p>(4) Manage the impact on Mana Whenua cultural heritage that is discovered undertaking land disturbance by:</p> <p>(a) requiring a protocol for the accidental discovery of kōiwi, archaeology and artefacts of Māori origin;</p> <p>(b) undertaking appropriate actions in accordance with mātauranga and tikanga Māori; and</p> <p>(c) undertaking appropriate measures to avoid adverse effects. Where adverse effects cannot be avoided, effects are remedied or mitigated.</p> <p>(5) Design and implement earthworks with recognition of existing environmental site constraints and opportunities, specific engineering requirements, and implementation of integrated water principles.</p> <p>(6) Require that earthworks are designed and undertaken in a manner that ensures the stability and safety of surrounding land, buildings and structures.</p>		<p>Furthermore, the use of a CTMP and CNVMP will address any potential adverse effects on neighbouring sites arising from land disturbance.</p> <p>Lastly, the proposed retaining walls and associated land disturbance will be undertaken in a manner which ensures the stability of the adjoining sites and structures.</p> <p>This includes the use of a managed quality assurance process to peer review all engineering designs, as well as the lodgement of building consent applications where applicable.</p>
Noise and Vibration	<p><u>Objectives E25.2</u></p> <p>(1) People are protected from unreasonable levels of noise and vibration.</p> <p>(2) The amenity values of residential zones are protected from unreasonable noise and vibration, particularly at night.</p> <p>(3) Existing and authorised activities and infrastructure, which by their nature produce high levels of noise, are appropriately protected from reverse sensitivity effects where it is reasonable to do so.</p>	Yes	<p>As detailed in the noise and vibration assessment (Appendix F), the construction noise and vibration effects of the project can be addressed via CNVMP.</p> <p>The CNVMP will be prepared and supplied to Auckland Council for certification as part of a future outline plan process. It will include measures to address noise and vibration</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<p>(4) Construction activities that cannot meet noise and vibration standards are enabled while controlling duration, frequency and timing to manage adverse effects.</p> <p><u>Policies E25.3</u></p> <p>(2) Minimise, where practicable, noise and vibration at its source or on the site from which it is generated to mitigate adverse effects on adjacent sites.</p> <p>(5) Prevent significant noise-generating activities other than roads and railway lines from establishing in or immediately adjoining residential zones.</p> <p>(6) Avoid activities sensitive to noise from establishing in industrial zones where adverse effects (including reverse sensitivity effects) arise that cannot be otherwise appropriately remedied or mitigated.</p> <p>(10) Avoid, remedy or mitigate the adverse effects of noise and vibration from construction, maintenance and demolition activities while having regard to:</p> <ul style="list-style-type: none"> <li>(a) the sensitivity of the receiving environment; and</li> <li>(b) the proposed duration and hours of operation of the activity; and</li> <li>(c) the practicability of complying with permitted noise and vibration standards.</li> </ul>		<p>outside of standard construction hours given the need to undertake some works during night-time or public holiday periods (due to line closure schedules).</p> <p>As part of the CNVMP's development, particular consideration will be given to CMDHB, 12 Orakau Road, 62 Rosella Road, 64A Rosella Road, 16 Gordon Road and 5 Clendon Avenue given their proximity to the works provided for by this alteration to the rail designation.</p> <p>With regard to operational effects generated by the works provided for this NoR, KiwiRail will undertake further engagement with potentially affected landowners to ascertain what mitigation measures are preferred and appropriate for the sites' current uses and enter into a third-party agreement outside of the consent process for the implementation of any mitigation where needed.</p>
Infrastructure	<p><u>Objectives E26.2.1</u></p> <p>(1) The benefits of infrastructure are recognised.</p> <p>(2) The value of investment in infrastructure is recognised.</p> <p>(3) Safe, efficient and secure infrastructure is enabled, to service the needs of existing and authorised proposed subdivision, use and development.</p> <p>(4) Development, operation, maintenance, repair, replacement, renewal, upgrading and removal of infrastructure is enabled.</p> <p>(5) The resilience of infrastructure is improved and continuity of service is enabled.</p>	Yes	<p>As previously detailed in section 0, the project will deliver significant benefits to the Auckland region, by providing increased capacity for both public transport services and freight. This increase capacity in rail services is critical to Auckland's ongoing sustainable management.</p> <p>In addition, the works covered by this alteration to the rail designation, have been selected and designed for the safe, efficient and secure operation of the NIMT. The proposed layout of the third main will allow</p>



Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<p>(9) The adverse effects of infrastructure are avoided, remedied or mitigated.  <u>Policies E26.2.2</u></p> <p>(1) Recognise the social, economic, cultural and environmental benefits that infrastructure provides, including:</p> <ul style="list-style-type: none"> <li>(a) enabling enhancement of the quality of life and standard of living for people and communities;</li> <li>(b) providing for public health and safety;</li> <li>(e) enabling growth and development;</li> <li>(f) protecting and enhancing the environment;</li> </ul> <p>(2) Provide for the development, operation, maintenance, repair, upgrade and removal of infrastructure throughout Auckland by recognising:</p> <ul style="list-style-type: none"> <li>(a) functional and operational needs;</li> <li>(b) location, route and design needs and constraints;</li> <li>(c) the complexity and interconnectedness of infrastructure services;</li> <li>(d) the benefits of infrastructure to communities within Auckland and beyond;</li> </ul> <p>(4) Require the development, operation, maintenance, repair, upgrading and removal of infrastructure to avoid, remedy or mitigate adverse effects, including, on the:</p> <ul style="list-style-type: none"> <li>(a) health, well-being and safety of people and communities, including nuisance from noise, vibration, dust and odour emissions and light spill;</li> <li>(b) safe and efficient operation of other infrastructure;</li> <li>(c) amenity values of the streetscape and adjoining properties;</li> <li>(d) environment from temporary and ongoing discharges; and</li> </ul> <p>(5) Consider the following matters when assessing the effects of infrastructure:</p> <ul style="list-style-type: none"> <li>(a) the degree to which the environment has already been modified;</li> </ul>		<p>for additional rail services which can operate without compromising the safety of rail users, KiwiRail staff or surrounding residents. This includes the extension of the pedestrian bridge at Middlemore Station, enabling the safe movement of pedestrians over the rail corridor.</p> <p>The resilience of the NIMT will also be improved, given that the works enable the installation of crossovers. These will allow for rail services to move around broken down locomotives, thereby reducing the frequency of blocked tracks and cancelled services.</p> <p>Regardless of the project's benefits, KiwiRail is aware of the need to avoid, minimise and mitigate any adverse effects. This has involved selecting an alignment which avoids taking land from existing road corridors and the relocation of the original Papatoetoe station building.</p> <p>While construction of the project will generate some minor adverse effects, these will be managed through the use of a CNVMP, a CTMP and an ESCP. Further controls on construction will be developed and imposed through the future resource consent conditions.</p> <p>Similarly, KiwiRail will continue engagement with both affected landowners and other</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<ul style="list-style-type: none"> <li>(b) the nature, duration, timing and frequency of the adverse effects;</li> <li>(c) the impact on the network and levels of service if the work is not undertaken;</li> <li>(d) the need for the infrastructure in the context of the wider network; and</li> <li>(e) the benefits provided by the infrastructure to the communities within Auckland and beyond.</li> </ul>		<p>stakeholders (e.g. mana whenua) to develop the project's detailed design. This will provide an opportunity to refine the design and layout of Middlemore Station, further reduce the scale of retaining walls and achieve appropriate offsetting for future streamworks at Middlemore.</p> <p>Lastly, it should be recognised that this NoR relates to the modification of an existing rail corridor. It is considered that investment in the upgrading of the NIMT, rather than the construction of a new corridor, represents a prudent use of existing infrastructure investment and avoids potentially significant environmental effects if such a new corridor was proposed.</p>
Transport	<p><u>Objectives E27.2</u></p> <ul style="list-style-type: none"> <li>(1) Land use and all modes of transport are integrated in a manner that enables: <ul style="list-style-type: none"> <li>(a) the benefits of an integrated transport network to be realised; and</li> <li>(b) the adverse effects of traffic generation on the transport network to be managed.</li> </ul> </li> <li>(2) An integrated transport network including public transport, walking, cycling, private vehicles and freight, is provided for.</li> <li>(6) Road/rail crossings operate safely with neighbouring land use and development.</li> </ul> <p><u>Policies E27.3</u></p> <ul style="list-style-type: none"> <li>(1) Require subdivision, use and development which:</li> </ul>	Yes	<p>The proposed works represent a significant improvement to the provision of both passenger and rail services. The increased capacity provided by the third main and other works will ensure that the NIMT supports the continued integrated planning of intensified land use, projected population growth and Auckland's transport networks.</p> <p>At a fine-grained level, the proposed works have been designed to integrate with the local environment.</p> <p>At Middlemore Station, this has involved in ensuring safe pedestrian movements to and</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<p>(a) generate trips resulting in potentially more than minor adverse effects on the safe, efficient and effective operation of the transport network;</p> <p>(b) are proposed outside of the following zones:</p> <ul style="list-style-type: none"> <li>i. the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone;</li> <li>ii. Residential – Terrace Housing and Apartment Buildings Zone;</li> <li>iii. the Centre Fringe Office Control as shown on the planning maps; or</li> </ul> <p>(c) do not already require an integrated transport assessment or have been approved based on an integrated transport assessment to manage adverse effects on and integrate with the transport network by measures such as travel planning, providing alternatives to private vehicle trips, staging development or undertaking improvements to the local transport network.</p>		<p>from the station, as well as improved pedestrian linkages between both hospital sites.</p> <p>Construction traffic related effects have also been considered and can be addressed through a CTMP. The CTMP will be provided with the Outline Plan and will incorporate measures to avoid conflicts with surrounding land users (e.g. schools), as well as to prevent conflict between pedestrians and construction traffic.</p>
Contaminated land	<p><u>Objectives E30.2</u></p> <p>(1) The discharge of contaminants from contaminated land into air, or into water, or onto or into land are managed to protect the environment and human health and to enable land to be used for suitable activities now and in the future.</p> <p><u>Policies E30.3</u></p> <p>(1) Identify and record the details of land containing elevated levels of contaminants in a public register.</p> <p>(2) Require any use or development of land containing elevated levels of contaminants resulting in discharges to air, land or water to manage or remediate the contamination to a level that:</p> <ul style="list-style-type: none"> <li>(a) allows contaminants to remain in the ground/groundwater, where it can be demonstrated that the level of residual contamination is not reasonably likely to pose a significant adverse effect on human health or the environment; and</li> </ul>		<p>While a resource consent application for contamination matters under the NESCS and the AUP(OP) will be sought at a later date, KiwiRail recognises the importance of controlling the potential discharge of contaminants to the environment. Given this, a SMP will employed during construction to manage potential discharges.</p> <p>The use of the SMP will address any potential risks to human health, water quality or cultural values. This is standard construction management approach and is considered appropriate both the scale of works proposed and the types of contaminants that may be present.</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<ul style="list-style-type: none"> <li>(b) avoids adverse effects on potable water supplies; and</li> <li>(c) avoids, remedies or mitigates significant adverse effects on ecological values, water quality, human health and amenity values; while taking into account all of the following:                             <ul style="list-style-type: none"> <li>(d) the physical constraints of the site and operational practicalities;</li> <li>(e) the financial implications of the investigation, remediation, management and monitoring options;</li> <li>(f) the use of best practice contaminated land management, including the preparation and consideration of preliminary and detailed site investigations, remedial action plans, site validation reports and site management plans for the identification, monitoring and remediation of contaminated land; and</li> </ul> </li> <li>(g) whether adequate measures are in place for the transport, disposal and tracking of contaminated soil and other contaminated material removed from a site to prevent adverse effects on the environment.</li> </ul>		
Natural Hazards	<p><u>Objectives E36.2</u></p> <ol style="list-style-type: none"> <li>1. Subdivision, use and development, including redevelopment in urban areas, only occurs where the risks of adverse effects from natural hazards to people, buildings, infrastructure and the environment are not increased overall and where practicable are reduced, taking into account the likely long-term effects of climate change.</li> <li>(4) Where infrastructure has a functional or operational need to locate in a natural hazard area, the risk of adverse effects to other people, property, and the environment shall be assessed and significant adverse effects are sought first to be avoided or, if avoidance is not able to be totally achieved, the residual effects are otherwise mitigated to the extent practicable.</li> <li>(5) Subdivision, use and development including redevelopment, is managed to safely maintain the conveyance function of floodplains and overland flow paths.</li> </ol>	Yes	<p>As previously discussed, the detailed design for the project will address the stormwater attenuation to address the flooding issues associated with the sites subject to this NoR. This attenuation will be designed in accordance with Auckland Council's technical standards (e.g. TP108) and in consultation with the Healthy Waters department.</p> <p>In addition, KiwiRail infrastructure in either overland flow paths or flood plains will be designed to be flood resilient, thereby minimising the potential for flood waters to impact on either rail service reliability or the safety of rail users.</p>

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<p>(6) Where appropriate, natural features and buffers are used in preference to hard protection structures to manage natural hazards.</p> <p><u>Policies E36.3</u></p> <p>(1) Identify land that may be subject to natural hazards, taking into account the likely effects of climate change, including all of the following:</p> <ul style="list-style-type: none"> <li>(b) flood hazards;</li> </ul> <p>(2) Consider all of the following, as part of a risk assessment of proposals to subdivide, use or develop land that is subject to natural hazards:</p> <ul style="list-style-type: none"> <li>(a) the type, frequency and scale of the natural hazard and whether adverse effects on the development will be temporary or permanent;</li> <li>(b) the type of activity being undertaken and its vulnerability to natural hazard events;</li> <li>(c) the consequences of a natural hazard event in relation to the proposed activity;</li> <li>(d) the potential effects on public safety and other property;</li> <li>(e) any exacerbation of an existing natural hazard risk or the emergence of natural hazard risks that previously were not present at the location;</li> <li>(f) whether any building, structure or activity located on land subject to natural hazards near the coast can be relocated in the event of severe coastal erosion, inundation or shoreline retreat;</li> <li>(g) the ability to use non-structural solutions, such as planting or the retention or enhancement of natural landform buffers to avoid, remedy or mitigate hazards, rather than hard protection structures;</li> <li>(h) the design and construction of buildings and structures to mitigate the effects of natural hazards;</li> <li>(i) the effect of structures used to mitigate hazards on landscape values and public access;</li> </ul>		

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<ul style="list-style-type: none"> <li>(j) site layout and management to avoid or mitigate the adverse effects of natural hazards, including access and exit during a natural hazard event; and</li> <li>(k) the duration of consent and how this may limit the exposure for more or less vulnerable activities to the effects of natural hazards including the likely effects of climate change.</li> </ul> <p>(4) Control subdivision, use and development of land that is subject to natural hazards so that the proposed activity does not increase, and where practicable reduces, risk associated with all of the following adverse effects:</p> <ul style="list-style-type: none"> <li>(a) accelerating or exacerbating the natural hazard and/or its potential impacts;</li> <li>(b) exposing vulnerable activities to the adverse effects of natural hazards</li> <li>(c) creating a risk to human life; and</li> <li>(d) increasing the natural hazard risk to neighbouring properties or infrastructure</li> </ul> <p>(13) In existing urban areas require new buildings designed to accommodate more vulnerable activities to be located:</p> <ul style="list-style-type: none"> <li>(a) outside of the 1 per cent annual exceedance probability (AEP) floodplain; or</li> <li>(b) within or above the 1 per cent annual exceedance probability (AEP) floodplain where safe evacuation routes or refuges are provided.</li> </ul> <p>(14) Require redevelopment of sites where existing more vulnerable activities are located within the 1 per cent annual exceedance probability (AEP) floodplain to address all of the following:</p> <ul style="list-style-type: none"> <li>(a) minimise risks from flood hazards within the site;</li> <li>(b) minimise the risks from flood hazards to people and property upstream and downstream of the site;</li> </ul>		

Notice of Requirement for W2QP

Reference	Objective/Policy	Is the Proposal Consistent	Comment
	<p>(c) remedy or mitigate where practicable or contribute to remedying or mitigating flood hazards in the 1 per cent annual exceedance probability floodplain;</p> <p>(d) location of habitable rooms above flood levels; and</p> <p>(e) provide safe evacuation routes or refuges from buildings and sites.</p> <p>(15) Within existing urban areas, enable buildings containing less vulnerable activities to locate in the 1 per cent annual exceedance probability (AEP) floodplains where that activity avoids, remedies or mitigates effects from flood hazards on other properties.</p> <p>(28) Take into account any authorised earthworks or drainage infrastructure which avoids, remedies or mitigates flood hazards when assessing proposed subdivision, use or development. Overland flow paths</p> <p>(29) Maintain the function of overland flow paths to convey stormwater runoff safely from a site to the receiving environment.</p> <p>(30) Require changes to overland flow paths to retain their capacity to pass stormwater flows safely without causing damage to property or the environment</p>		



#### 10.1.6 Section 171(1)(b) – Assessment of Alternatives

As noted in Section 5, an assessment of alternatives was undertaken to determine the most appropriate design option. Three options to address the capacity issues facing the NIMT:

- Do nothing;
- Construct a third main using an alignment on the western edge of the existing NIMT; or
- Construct a third main using an alignment on the eastern edge of the existing NIMT.

From this assessment exercise, it was found that the construction of the “western alignment” works was the most appropriate method to address the issues facing the NIMT. This was due to several factors, such as the option avoiding impacts on the Shirley Road and Hospital Road corridors, as well as avoiding the removal of the original Papatoetoe Station building.

Given the above, KiwiRail has undertaken adequate consideration of alternative sites, routes and methods to satisfy section 171(1)(b).

#### 10.1.7 Section 171(1)(c) – Whether the Works and Designation are Reasonably Necessary

The designation and works are necessary to achieve the project’s objectives (Section 3.3) given that the proposed infrastructure is not specifically provided for under the AUP(OP)’s zone-based controls. The land subject to this alteration to designation is zoned for open space, mixed use and residential purposes<sup>38</sup>. None of these zones provide a suitable policy and rule framework associated with rail works and operation. Similarly, while Chapter E26 (Infrastructure) overrides each of these zones’ rules, the activities provided for by Chapter E26 are typically at a smaller scale than proposed (e.g. standalone utility structures) and do not reflect the range of activities and physical works that are required to construct and operate the third main.

In addition, KiwiRail currently does not have an interest in the sites included in this NoR. Given this, it is possible that land use changes or new structures could be established that would prevent the implementation of the proposed works. The application of a designation of the required areas of these sites secures the land needed to upgrade the NIMT corridor and ensures that members of the public are aware of the intended works.

#### 10.1.8 Section 171(1)(c) – Other Matters

Section 171(1)(d) requires the territorial authority to consider any other matter reasonably necessary to make its recommendation on the NoR.

##### Auckland Plan 2050

The Auckland Plan 2050 (the Auckland Plan) is “another matter” that is relevant. It is the guiding strategic document for the Auckland Region and was a statutory requirement under s69 of the Local Government (Auckland Council) Act 2009. While the inaugural version of the Auckland Plan was published in 2012, an updated Plan was released in February 2018 for public comment and confirmed by Council in July 2018.

A key component of the Auckland Plan is the identification and provision of growth and environmental management across the Auckland Region as supported by reliable transport infrastructure. In particular, the Auckland Plan’s “Transport and Access” chapter lists the following three directions for transport planning:

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<sup>38</sup> It is noted that the land required within the Orakau Road carriageway is unzoned under the AUP(OP).

- Better connect people, places, goods and services;
- Increase genuine travel choices for a healthy, vibrant and equitable Auckland; and
- Maximise safety and environmental protection.

It is noted that the proposed works support all three directions. The project will ensure that Auckland's rail network has increased capacity, thereby ensuring that people and goods are efficiently transported across Auckland and to other regions. The proposed works also provide for step-free train access, allowing Aucklanders of all abilities to access passenger services. Lastly, by supporting the modal shift from private to public transport, as well as moving more freight by rail, the proposed works will assist in reducing transport related injuries and deaths.

The Auckland Plan's Development Strategy also highlights the importance of public transport investment in delivering sustainable urban development, stating:

*"Ensuring that infrastructure networks have sufficient capacity to service growth is critical. The sequencing of future urban and development areas influences the timing of investment in the strategic networks needed to service these areas. Further investment in local infrastructure will be needed as these areas grow. This will require alignment between the expansion of strategic water and transport networks, and investment in local infrastructure, particularly to service development areas and future urban areas."<sup>39</sup>*

Given the importance of the NIMT in connecting both existing urban town centres and the greenfield areas of South Auckland, it is considered that works proposed by this alteration to the rail designation are consistent with the Development Strategy. Without the proposed infrastructure investment, it would become increasingly difficult to service planned growth areas or ensure the reliability of the services provided.

Given the above, the project is considered consistent with the Auckland Plan, and the Council should take this into account under s171(1)(d) when making its recommendation.

#### Heritage New Zealand Pouhere Taonga Act 2014

Under the HNZPTA no person shall modify or destroy an archaeological site unless an authority is granted by HNZ (whether or not a site is a recorded archaeological site).

It is noted in Section 4.4.1, several of the affected sites at Papatoetoe Station are located in historic heritage overlays. While no works are proposed to either the original Papatoetoe Station building or the railway cottages on Station Road (which were constructed in 1928), some earthworks will be undertaken in these overlays. In order to ensure that any archaeological items of interest are appropriately protected and recorded, an archaeological authority from HNZ will be sought.

## 10.2 Part 2 (Purposes and Principles) – Sections 5, 6, 7, and 8

Part 2 provides a common set of principles to be applied to the management of all resources. In relation to this NoR, section 171(1) provides that when considering the requirement and any submissions received, the Council must consider the effects on the environment of allowing the requirement, having "particular regard" to the various matters in section 171(1)(a) to (d), which have been addressed above. However, s171(1) makes it clear that these considerations are all "subject to Part 2".

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<sup>39</sup> Auckland Plan Development Strategy 2050, Auckland Council, 2018.

### 10.2.1 Section 5 Assessment

The RMA has a single overarching purpose: to promote the sustainable management of natural and physical resources. Sustainable management is defined in Section 5 of the RMA as:

*...managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*

- (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

#### Comment

The proposed works support the purpose of RMA as defined by section 5. In particular, the works provide the social, economic and cultural wellbeing of the community given the improved intra and inter-regional connectivity that will be provided. The works will also maintain step-free access to rail services, ensuring that the connectivity benefits of the project are available to all Aucklanders, in manner which protects their health and safety. Furthermore, the proposed works are an efficient use of existing infrastructure investment, allowing the NIMT to meet future transport demands in a manner which avoids the acquisition of significant areas of privately held land.

Lastly, the adverse effects of the proposed works will be addressed through the use of construction related management plans and the project's detailed design. This will include addressing the presence of contaminated soil, minimising noise and vibration effects on adjoining sites and providing stormwater attenuation.

### 10.2.2 Section 6 Assessment

Section 6 of the RMA requires that in achieving the purpose of the Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for matters of national importance. The specified matters of importance of relevance to this Project are:

- (c) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga;*
- (f) the protection of historic heritage from inappropriate subdivision, use, and development;*
- (h) the management of significant risks from natural hazards.*

#### Comment

The proposed works are consistent with section 6 of the RMA. KiwiRail is continuing to engage with iwi to address any potential cultural effects, such as effects on the mauri of freshwater. The results of this engagement will be incorporated into the project's detailed design and incorporated into future outline plan and resource consent applications. In addition, the works generally avoid any effects on historic heritage and the use of an archaeological authority will ensure that any uncovered heritage items are suitably protected. Lastly, the presence of both OLFPs and flood plains has been considered and stormwater attenuation will be addressed through the detailed design process.

### 10.2.3 Section 7 Assessment

Under Section 7 of the RMA (Other Matters) all persons exercising functions and powers under the Act, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to:

- (a) *kaitiakitanga*;
- (b) *the efficient use and development of natural and physical resources*;
- (c) *the maintenance and enhancement of amenity values*;
- (f) *maintenance and enhancement of the quality of the environment*.

#### Comment

As previously noted, KiwiRail is engaging with iwi to ensure that kaitiakitanga elements are incorporated into the project's detailed design. The proposed works present an efficient use of existing infrastructure investment and will support the quality compact urban growth of Auckland, thereby providing strategic support for the wider region's natural and physical resources.

Consideration has been given to amenity values, minimising the use of retaining walls and avoiding the relocation of the original Papatoetoe Station building. In addition, KiwiRail will work with iwi and other stakeholders to ensure the upgraded Middlemore Station contributes positively to amenity values and the quality of the local environment.

As such, the project is consistent with section 7 of the RMA.

### 10.2.4 Section 8 Assessment

Section 8 of the RMA requires that in achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi.

#### Comment

As previously discussed, KiwiRail is committed to ongoing engagement with iwi. Interested hapū will be provided an opportunity to contribute further to the project's detailed design, including the its stormwater management, landscaping and urban design elements.

Given these factors, the Project is consistent with section 8 of the RMA.

### 10.2.5 Lapse Date

While it is proposed to complete all works within a 3-year period following confirmation of the NoR, it is considered prudent that a 10-year lapse date is applied given the uncertain impacts of Covid-19. A 10-year lapse date will ensure that adequate time is given for the commencement of construction and matches the standard timeframe for a review of the AUP(OP).

It is also noted that KiwiRail will uplift the designation of those areas required only for construction upon the completion of works. This will avoid blighting these sites for future development.

## 11. Conclusion

KiwiRail has undertaken a thorough approach to the development of this NoR to alter an existing designation, having taken into regard the requirements of the RMA, the AUP(OP) and relevant national policy statements. In addition, early engagement by KiwiRail with key stakeholders will be used to further develop the project's detailed design and ensure it meets community expectations.

The project will deliver significant benefits to Auckland, helping meet the strategic outcomes sought by the Auckland Plan while also improving Auckland's connectivity with the rest of New Zealand. Auckland faces significant growth over the coming decades and investment in heavy rail is critical to serving both new greenfield and existing brownfield communities. The project is also vital to the economic success of New Zealand, including helping the POA meet projected growth in TEU movements.

The NoR has demonstrated the importance of the project and the need to designate land outside the existing NIMT corridor for rail purposes. While some minor adverse effects are anticipated, these will be addressed through the use of standard construction management practices, further engagement with directly affected parties and plan refinement through a detailed design process. Further RMA approval processes will also provide the opportunity for Auckland Council to impose any relevant conditions on the wider project, not least in relation to bulk earthworks, streamworks and discharges.

Given the factors above and the matters assessed in the AEE, Auckland Council will be able to recommend that the alteration to designation 6302 of the AUP(OP) can be confirmed without changes.

## Appendix A. Existing Designation for the North Island Main Trunk Line

## Appendix B. Records of Title



## Appendix C. Land Requirement Plans

## Appendix D. Preliminary Site Investigation (Contamination)

## Appendix E. Site Plans

## Appendix F. Noise and Vibration Assessment

## Appendix G. Transport Impact Assessment

## Appendix H. Arboricultural Assessment

## Appendix I. Historic Heritage Assessment



## Appendix J. Flooding Assessment