NOTICE OF REQUIREMENT FOR A DESIGNATION OF LAND

February 2022

Waka Kotahi NZ Transport Agency
Ōtaki to North of Levin Project – Section Between Queen Street East and Tararua Road

Notice of Requirement for a Designation of Land Under Section 168 of the Resource Management Act 1991

Section 145, 168(1), (2), 168A, and 181, and clause 4 of Schedule 1, Resource Management Act 1991

To: Horowhenua District Council
Private Bag 4002 Levin 5540
Levin 5540

From: Waka Kotahi NZ Transport Agency
PO Box 5084
Wellington 6140

Pursuant to section 168 of the Resource Management Act 1991 ("RMA") Waka Kotahi NZ Transport Agency ("Waka Kotahi") gives notice of a requirement for a designation for a project or public work.

The purpose of the proposed designation is to construct, operate, maintain, and improve a state highway, shared path and associated infrastructure.

Waka Kotahi is a network utility operator approved as a requiring authority under section 167 of the RMA. The relevant gazette notices are:

- Resource Management (Approval of Transit New Zealand as Requiring Authority) Order 1992 (NZ Gazette, Notice Number 1994-go1500) – and refer Schedule 2, Clause 29 of the Land Transport Management Act 2003 which confirms that the order applies to NZ Transport Agency; and
- Resource Management (Approval of NZ Transport Agency as a Requiring Authority) Notice 2015 (NZ Gazette, Notice Number 2015-go6742) – which confirms the NZ Transport Agency as a requiring authority for the purpose of constructing or operating (or proposing to construct or operate) and maintaining cycleways and shared paths.

Waka Kotahi is the corporate name used throughout this notice of requirement. The legal name for Waka Kotahi as a requiring authority is the New Zealand Transport Agency. When the designation is confirmed, the requiring authority name recorded in the Horowhenua District Plan should be the New Zealand Transport Agency.

The site to which the requirement applies is as follows:

The area of the proposed designation is shown on the plans included in **Appendix I** to the documentation accompanying of this notice of requirement.

The notice of requirement applies to an area of land of approximately 54 hectares located to the east of Taitoko/Levin, and parallel to, and east of, Arapaepae Road/State Highway 57 ("SH57") extending from Queen Street East in the north to Tararua Road in the south. The requirement applies to nine land parcels (including Crown land), being the land necessary for an approximately two kilometre section of the Ōtaki to north of Levin ("Ō2NL") Project.

The land directly affected by the requirement is identified in the 'Land Requirement Schedule' in the plans included in **Appendix I** to the documentation accompanying this notice of requirement and is as follows:

Land Parcel ID (as shown on the plans)	Legal Description	Record of Title	Required Area (ha)(approx.)
413	Part Lot 1 DP 4237	WN16A/319	18.2346
424	Lot 5 DP 77522	WN43D/745	2.3476
435	Lot 4 DP 77522	WN43D/744	2.5322
441	Lot 3 DP 77522	WN43D/743	2.4745
443	Lot 2 DP 77522	WN43D/742	2.1787
448	Lot 1 DP 63980	WN36C/865	2.4277
462	Part Lot 3 DP 6490	WNA4/1323	9.0219
465	Part Lot 1 DP 86925	WN52C/744	12.8396
479	Lot 2 DP 86925	WN52C/745	1.5586

The nature of the proposed work is:

The proposed work is the construction, operation, maintenance and improvement of a new state highway and shared use path and associated activities in a location to the east of Taitoko/Levin, and parallel to, and east of SH57 extending from Queen Street East in the north to Tararua Road in the south, being a two kilometre section of the wider Ō2NL highway (hereafter referred to as "the Project"). The Project is described in Section C of the accompanying documentation.

In summary, within the area subject to the notice of requirement, the proposed work includes:

- a four lane (two lanes in each direction), median divided road;
- the northern extent of a grade separated diamond interchange at Tararua Road;
- a shared use path for walking and cycling along the length of the new road;
- road lighting at Tararua Road and Queen Street East;
- median and edge barriers;
- stormwater treatment wetlands, stormwater swales, drains and sediment traps;
- culverts for drainage across the road; and
- sites for spoil disposal.

The Ō2NL Project as a whole is identified as key priority in the National Land Transport Programme 2018 - 2021, and as one of the 'Significant Inter-Regional Activities Between the Manawatū-Whanganui Region and Greater Wellington Region' in the Horizons Regional Land Transport Plan 2015 - 2025 (2018 review).

The nature of the proposed conditions that would apply are:

The proposed conditions that will apply to the works authorised by the proposed designation are being developed by Waka Kotahi. The proposed conditions will reflect the framework for the management of adverse effects included in Part G of the accompanying documentation and will respond to, and embed, the measures proposed to avoid, remedy and mitigate potential adverse effects that are also set out in Part G.

The effects that the proposed work will have on the environment, and the ways in which any adverse effects will be mitigated are:

An assessment of effects of the Project on the environment, as relevant to the portion of the Ō2NL highway that is the subject of the proposed designation, is included in Part G of the accompanying documentation. This assessment identifies the actual and potential adverse effects, and positive effects, of the construction and operation of the Project and sets out measures to avoid, remedy or mitigate adverse effect.

In summary, positive effects are the benefits realised as part of the Project to:

- the transport network from:
  - improved resilience and reliability;
  - increased capacity within the wider network;
  - improved safety, efficiency and connectivity;
- the existing transport network, due to reduced traffic on existing State Highway 1 and, in particular Levin's main retail area;
- people and communities from high quality, well connected and integrated urban development; and
- local and regional economies, from the facilitation and support of growth in Horowhenua.

Other actual and potential effects relate to:

- ecology and indigenous biodiversity values;
- landscape and visual amenity values;
- noise effects;
- social effects;
- cultural values;
- property within the designation; and
- historic heritage and archaeology.

Alternative sites, routes, and methods have been considered to the following extent:

The proposed designation corridor was selected following an iterative and comprehensive option evaluation process undertaken for the Ō2NL Project as a whole that has been further refined. This refinement has included a more recent multi-criteria analysis of options for the east of Taitoko/Levin section of the portion of the Ō2NL highway that is subject to this notice of requirement.

The detail of this process is set out in the assessment of alternative sites, route and methods undertaken for the Ō2NL Project as a whole in Part E of the accompanying documentation.

The proposed work and designation are reasonably necessary for achieving the objectives of the requiring authority because:

The objective of Waka Kotahi under Section 94 of the Land Transport Management Act 2003 ("LTMA") is *"to undertake its functions in a way that contributes to an effective, efficient, and safe land transport system in the public interest".*

The objectives of Waka Kotahi for the Project are to:

- enhance safety of travel on the state highway network.
- enhance the resilience of the state highway network.
- provide appropriate connections that integrate the state highway and local road network to serve urban areas.
- enable mode choice for journeys between local communities by providing a north-south cycling and walking facility.

- support inter-regional and intra-regional growth and productivity through improved movement of people and freight on the state highway network.

In the context of this NoR, and in terms of achieving the integration of the Ō2NL Project and the development of the Tara-Ika growth area, the latter three of these Objectives are of particular importance.

The Ō2NL Project, including the part of the Ō2NL Project that is subject to this notice of requirement, is reasonably necessary to achieve the objectives of Waka Kotahi because it will:

- provide a greater level of safety when compared to the existing state highway;
- be less likely to be subject to closures as a result of traffic accidents or natural hazard events when compared to the existing state highway;
- service current urban areas and support the development of future urban areas through connection onto, and across the state highway network;
- provide enhanced walking and cycling facilities and connections; and
- enable more efficient and reliable inter-regional and intra-regional journeys.

The proposed designation is reasonably necessary as a planning tool as it identifies and protects land required for the Project and will enable Waka Kotahi to carry out the proposed work. The principal reasons for requiring a designation to facilitate the work to which the requirement relates are because it will:

- allow the land required to be identified in the Horowhenua District Pan, giving a clear indication of the intended use of the land;
- protect the proposed route from future development that would prevent or hinder the construction of the Project;
- provide certainty for landowners of the intended use of the land and the work to be undertaken in the future;
- enable the integrated development of the Ō2NL Project and the development of the Tara-Ika Growth Area; and
- allow Waka Kotahi, or its authorised agents, to undertake the works necessary for the Ō2NL Project within the area subject to the proposed designation.

In addition, the proposed designation is reasonably necessary to enable Waka Kotahi to achieve its principal objective under the LTMA.

The detailed reasons why the designation is reasonably necessary to meet the statutory and project objectives are set out in Part H of the accompanying documentation.

The following resource consents are needed for the proposed activity and have [or have not] been applied for:

Resource consents for a number of activities (including land use consents, water permits and discharge permits) are likely to be required by the relevant provisions of operative Regional Plans for the Wellington Region; the Natural Resources Plan for the Wellington Region and the Horizons One Plan.

In addition, designations in the Kāpiti Coast District Plan and Horowhenua District Plan are also required over those parts of the Ō2NL Project that are not subject to this notice of requirement.

For completeness, Waka Kotahi does not seek that the requirement for an outline plan be waived, in terms of section 176A(2)(c) of the RMA.

The following consultation has been undertaken with parties that are likely to be affected:

Consultation has been undertaken with the community, key stakeholders, iwi and directly affected parties, including as part of the assessment of alternatives and corridor refinement. Consultation is on-going in the context of the designations and resource consents to be sought and otherwise. Engagement has been achieved through a number of channels, including workshops, hui, one-on-one meeting, public open days, letters, newsletters and online information.

Details of this consultation are included in Part F of the accompanying documentation.

Proposed Lapse Period:

Waka Kotahi confirms that the standard lapse period of five years from the date on which the designation is included in the Horowhenua District Plan will apply (section 175 and section 184(1) of the RMA).

Supporting Information:

Waka Kotahi NZ Transport Agency attaches the following information required to be included in this notice by the district plan, regional plan, or any regulations made under the RMA:

'Notice of Requirement for a Designation – Supporting Information' that includes the following:

- Part A Introduction and Background to the Project
- Part B Description of the Environment
- Part C Project Description
- Part D Statutory Context
- Part E Consideration of Alternatives
- Part F Consultation and Engagement
- Part G Assessment of Effects on the Environment
- Part H Statutory Assessment and Conclusion
- Appendices (Drawings and Plans; and Relevant Statutory Provisions; and Plans of Predicted Noise Levels)

Signed by:

Jenni Fitzgerald
National Planning Manager

pursuant to authority delegated by Waka Kotahi NZ Transport Agency

22 February 2022

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WAKA KOTAHI
NZ TRANSPORT AGENCY

PROUDLY DELIVERING
New Zealand Upgrade Programme

ŌTAKI TO NORTH OF LEVIN PROJECT: SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

Notice of Requirement for a Designation – Supporting Information

22 FEBRUARY 2022

FINAL

New Zealand Government

QUALITY ASSURANCE STATEMENT

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Approved for issue:	Jenni Fitzgerald (Waka Kotahi NZ Transport Agency)

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GLOSSSARY (DEFINED TERMS AND ABBREVIATIONS)

The following table sets out technical terms and abbreviations used in this document.

Term	Definition
ASD	Approach sight distance
BCA	Business Case Approach
CEDF	Cultural and Environmental Design Framework
CRTN	Calculation of Road-Traffic Noise
DBC	Detailed Business Case
District Plan	Operative Horowhenua District Plan
DOC	Department of Conservation
DSI	Deaths and serious injury (road traffic accidents)
EcIAG	Ecological Impact Assessment Guidelines
EIA	Economic Impact Assessment
EIANZ	Environment Institute of Australia and New Zealand
EPA	Environmental Protection Authority
GPS	Government Policy Statement on Land Transport 2021/22 – 2030-31
GRPA	Government Roading Powers Act 1989
HAIL	Hazardous Activity or Industries List
HDC	Horowhenua District Council
HNZPT	Heritage New Zealand Pouhere Taonga
Horizons	Manawatū-Whanganui Regional Council
Horizons RLTP	Horizons Regional Land Transport Plan 2-21 – 2031
HVC	Heavy commercial vehicles
IAIA	International Association of Impact Assessment
IAP2	International Association of Public Participation
IBC	Indicative Business Case
IBE	Indicative Business Case Cost Estimate
ICOMOS	International Council on Monuments and Sites
IRR	Infrastructure Risk Rating
KCDC	Kāpiti Coast District Council
LOS	Level of service
LTMA	Land Transport Management Act 2003

Term	Definition
LUC	Land use capability
MCA	Multi Criteria Analysis
MGSD	Minimum gap sight distance
MOTSAM	Manual of Traffic Signs and Markings
NIMT	North Island Main Trunk
NLTF	National Land Transport Fund
NLTP	National Land Transport Programme
NoR	Notice of requirement for a designation
NZAA	New Zealand Archaeological Association
NZLRI	New Zealand Land Resource Inventory
NZUP	New Zealand Upgrade Programme
NZS 6803	New Zealand Standard NZS 6803:1999 Acoustics – Construction Noise
NZS 6806	New Zealand Standard NZS 6806:2020 Acoustics – Road-traffic noise – New and altered roads
Ō2NL Project/the Project	Ōtaki to North of Levin Project
OGPA	Open graded porous asphalt
One Plan	Horizons One Plan
ONRC	One Network Road Classification
PM Peak	The volume of traffic counted in the afternoon peak hour
PNRP	Proposed Natural Resources Plan for the Wellington Region
PP2Ō	Peka Peka to Ōtaki Expressway Project
PPF	Protected Premises and Facilities
Proposed PC4	Proposed Plan Change 4 to the operative Horowhenua District Plan
PSI	Preliminary Site Investigations
PSL	Posted speed limit
PV	Present value
PWA	Public Works Act 1981
RIA	Retail Impact Assessment
RLTP	Horizons Regional Land Transport Plan
RMA	Resource Management Act 1991
SAAS	Safe and appropriate speed

Term	Definition
Section 42A Report	Horowhenua District Plan Change Section 42A Report Proposed Plan Change 4 Tara-Ika Growth Area October 2021
SH1	State Highway 1
SH2	State Highway 2
SH57	State Highway 57
SID	Safety Improvements Programme
SISD	Safe intersection sight distance
SNP	Safe Network Programme
SSD	Stopping sight distances
SUP	Shared Use Path
TCDM	Traffic Control Device Manual
TEC	Manaaki Whenua Landcare Research Threatened Environment Classification
VAC	Visual Absorption Capacity
vpd	Vehicles per day
Waka Kotahi	Waka Kotahi NZ Transport Agency
WEBs	Wider Economic Benefits
WHO Guidelines	World Health Organisation 'Noise Guidelines for the European Region (2018)

PART A: INTRODUCTION AND BACKGROUND TO THE PROJECT

1. Overview

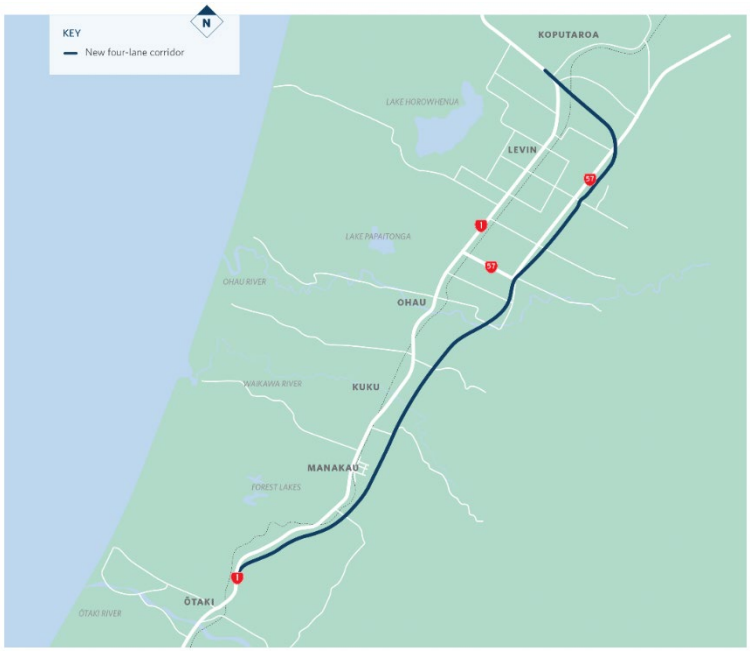
Waka Kotahi NZ Transport Agency ("Waka Kotahi") is giving notice of requirement ("NoR") for a designation to the Horowhenua District Council ("HDC") for the part of the Ōtaki to north of Levin highway Project that traverses the Tara-Ika Growth Area. For the purpose of this report the Ōtaki to north of Levin highway Project is the "Ō2NL Project" or the "Project" and the NoR that traverses the Tara-Ika Growth Area is the "NoR" or the "proposed designation".

The Ō2NL Project involves the construction, operation, use, maintenance and improvement of approximately 24 kilometres of new four-lane state highway and a shared use path ("SUP") between Taylors Road (to the north of Ōtaki) and State Highway 1 ("SH1") north of Levin. Figure 1 below shows the Ō2NL Project location and extent.

The Tara-Ika Growth Area is subject to proposed Plan Change 4 ("proposed PC4") to the operative Horowhenua District Plan ("District Plan"). Proposed PC4 introduces a new 'Tara-Ika Multi-Zone Precinct' Chapter to the District Plan that includes a new structure plan and applies residential, commercial and open space zones (and associated rules) to the Tara-Ika Growth Area located to the east of Taitoko/Levin and bordered by State Highway 57/Arapaepae Road ("SH57"), Queen Street East, Gladstone Road and Tararua Road. The Tara-Ika Growth Area is a significant (3,500 plus dwellings) housing development area to the east of Taitoko/Levin that has the potential to increase Taitoko/Levin's population by over 50%. The Ō2NL Project traverses the Tara-Ika Growth Area within a corridor that is immediately to the east of, and parallel to, SH57. The NoR is to designate approximately 54 hectares of land within the Tara-Ika Growth Area, being a two kilometre section of the total 24 kilometre length of the Project.

The NoR given by Waka Kotahi for the part of the Ō2NL Project that traverses the Tara-Ika Growth Area reflects the fact that the Ō2NL Project and Proposed PC4 are two of the most significant projects for Horowhenua District. Advancing the designation over the Tara-Ika Growth Area as a priority clearly identifies and protects the Ō2NL route, enables the design and development of the projects to be integrated and provides certainty for stakeholders and the community.

Figure 1 – Location and Extent of the Ō2NL Project



The Ō2NL Project is part of the New Zealand Upgrade Programme ("NZUP"). The purpose of the Project is to *"improve safety and access, support economic growth, provide greater route resilience, and better access to walking and cycling facilities"*[1]. The Ō2NL Project provides the final northern link of the Wellington Northern Corridor that extends from Wellington International Airport.

The Ō2NL Project comprises the following key features:

- a grade separated diamond interchange at Tararua Road;
- two dual lane roundabouts where the main alignment crosses SH57 and where it connects with the current SH1 at Heatherlea East Road, north of Taitoko/Levin;
- four lane bridges over the Waiauti, Waikawa and Kuku Streams and the Ohau River and the North Island Main Trunk ("NIMT") rail line north of Taitoko/Levin;
- local road underpasses near to Taylors Road for connectivity to the existing SH1 where Ō2NL connects with the Peka Peka to Ōtaki expressway ("PP2Ō"), and also at South Manakau Road, Kuku East Road and Sorensons Road;
- local road overpasses at Honi Taipua Road, North Manakau Road, Muhunoa East Road, Tararua Road (as part of the interchange), and Queen Street;
- local road reconnections and intersection improvements including at Tararua Road and the existing SH1;
- road lighting at conflict points only, that is, where traffic can enter or exit the highway.
- median and edge barriers;
- stormwater treatment wetlands, stormwater swales, drains and sediment traps;
- culverts to reconnect streams crossed by the proposed works and stream diversions to recreate and reconnect streams; and
- a SUP for walking and cycling located generally along the entire length of the new highway.

A description of the works that are located within the part of the Ō2NL Project that is subject to this NoR is included in Part C. These works include the four-lane, median separated road between Queen Street East and Tararua Road, a SUP along the length of the road, the northern part of the Tararua Road interchange and various elements to provide for the management of stormwater.

2. Project Context

2.1 Waka Kotahi

Waka Kotahi is a Crown entity with its functions, powers and responsibilities set out in the LTMA and the Government Roading Powers Act 1989 ("GRPA") The overarching objective of Waka Kotahi, as set out in section 94 of the Land Transport Management Act 2003 ("LTMA") is to "*undertake its functions in a way that contributes to an effective, efficient, and safe land transport system in the public interest*".

Waka Kotahi is also a network utility operator approved as a requiring authority under Section 167 of the RMA.

The legal name for Waka Kotahi is the New Zealand Transport Agency.

An integrated approach to transport planning, funding and delivery is taken by Waka Kotahi. This includes investment in public transport, walking and cycling, local roads and the construction and operation of state highways. In meeting its objective and carrying out its functions, Waka Kotahi is required by the LTMA *inter alia* to exhibit a sense of social and environmental responsibility.

[1] https://www.nzta.govt.nz/planning-and-investment/nz-upgrade/wellington-package/

2.2 Strategic Context

The Ō2NL Project has been developed in accordance with relevant legislation and transport policy. The key relevant legislation and policies that have guided the development of objectives for the Ō2NL Project, including for the part of the Project that is subject to this NoR, and the evaluation of expected outcomes, include:

- the LTMA, which informs the development of strategy (the Government Policy Statement on Land Transport: 2021/22 – 2030-31) ("GPS") and National Land Transport Programme ("NLTP") as well as plans (such as the Regional Land Transport Plans); and
- the RMA, including as it is implemented through national policy statements, regional policy statements, regional plans and district plans.

The Government sets the direction for land transport investment through the Fund in the GPS. Decisions about individual projects are the responsibility of Waka Kotahi. The Government can also provide additional funding to progress specific transport activities or projects. In most cases, this funding is appropriated by Parliament outside of the Fund and is spent by Waka Kotahi acting as the Crown's delivery agent.

Additional funding is often provided to 'lead investments' that deliver broader outcomes, and other investments that might not otherwise be prioritised to receive funding from the Fund. Projects delivered through Crown appropriations contribute to transport and wider outcomes, and generally align with GPS priorities. However, they are delivered separately from the GPS. In this instance, the Ō2NL Project is delivered through the NZUP.

2.2.1 The New Zealand Upgrade Programme

The Government has committed $6.8 billion in capital investment from the Crown to progress new infrastructure projects – the NZUP. This supports specific projects that will further the Government's ambition for the future transport system of New Zealand.[2] The NZUP is a significant investment programme which builds on investment made through the Fund. Combined, the investment through the GPS and the NZUP will help future proof the economy, get our cities moving, and make our roads safer.

The NZUP delivers important projects that will speed up travel times, ease congestion and make our roads safer. It reflects the Government's balanced transport policy with $6.8 billion being invested across road, rail, public transport and walking and cycling infrastructure across New Zealand.

Of the $6.8 billion investment, around $1.8 billion of the projects that will be delivered through the NZUP would have otherwise been delivered as a result of the GPS. This means that the NZUP has provided additional flexibility for the GPS to signal increased investment in:

- public transport services and infrastructure, to help to make towns and cities more liveable through achieving the Government's ambitions for mode shift;
- road safety investment, to ensure the reduction of deaths and serious injuries by 40%; and
- road maintenance, to allow New Zealanders to continue to experience well maintained and serviced roads.

In addition, the social and environmental responsibility and value for money imperatives in the LTMA have been key considerations in planning for the new connection through the process of identifying a preferred corridor.

Waka Kotahi national resilience assessments have identified flooding as the primary hazard for the Ōtaki to north of Levin project area with the risk of extreme consequences projected to increase to very likely as a result of climate change.

[2] Details of the programme can be found at: www.nzta.govt.nz/nzupgrade.

The Horizons Regional Land Transport Plan 2021 - 2031 ("Horizons RLTP") sets the strategic direction for land transport in the Manawatū-Whanganui Region and describes the 'Transport Investment Priorities' for the Region.

The Ō2NL Project is identified as a priority investment area in the Horizons RLTP, which notes that funding is allocated through to construction completion. The Horizons RLTP explains that linkages "*to the Wellington Region via a new highway and rail corridor are vital to the Manawatū-Whanganui Region and wider central North Island to enable the efficient, effective and safe movement of people and freight through the region. It is therefore essential that a safe, efficient and reliable link is provided through implementation of the Wellington Northern Corridor project, specifically the section from Ōtaki to north of Levin…".*

The Ō2NL Project is also identified in the Horizons RLTP as one of the 'Significant Inter-Regional Activities Between the Manawatū-Whanganui Region and Greater Wellington Region'.

In addition, the Horizons RLTP also identifies the improvement of high-risk intersections, with a focus on Palmerston North, Whanganui and Taitoko/Levin urban areas and the state highways that link them, as a priority investment area as part of Transport Investment Priority 2: Safety. Further, local road upgrades relating to, and enabling, the Ō2NL Project is also ranked Priority 2 for the Manawatū-Whanganui Region for funding purposes.

In advance of the construction and opening of the Ō2NL Project, a programme of safety improvements to the state highway network from north of Ōtaki and through the Horowhenua District is being implemented (as detailed in the Horizons RLTP). These improvements provide short-term and medium-term safety improvements and include a review of speed limits on SH1 from Ōtaki to Taitoko/Levin. Improvements to SH1 to the north of Taitoko/Levin are being implemented as part of the national Safer Network Programme and will provide longer term solutions, consistent with the design of the Ō2NL Project.

The policy context included in RMA plans is set out in Parts D and H of this document.

2.3 Project Partners

In undertaking the Ō2NL Project, Waka Kotahi, as a Crown agency, is committed to a partnership-based approach with tangata whenua that reflects the principles of the Treaty of Waitangi/Te Tiriti o Waitangi.

Waka Kotahi and the Project Iwi Partners (Muaūpoko and Ngāti Raukawa ki te Tonga) have worked together in respect of design development, along with the range of management responses to actual and potential adverse effects on the environment.

The partnership approach is maintained through regular and on-going engagement at governance management and operational levels, including formal hui, informal meetings, site visits, participation in fieldwork, site walkovers and co-creation of key project documentation. Regular workshops, focusing on particular aspects of the Ō2NL Project's design, have assisted to integrate cultural and spiritual values into the Project as it has developed.

Waka Kotahi appreciates and respects that issues such as 'areas of interest' and mana whenua are for Māori to determine in accordance with tikanga. Waka Kotahi seeks to operate in a manner that is respectful of tikanga. Consequently, an open and inclusive approach is adopted. Waka Kotahi acknowledges that there will be different layers and strengths of history, association and interests.

Ongoing active engagement, provides a iterative process to inform, understand and respond to areas of interest and cultural values, including potential impacts on those interests and values.

3. Project Background and Need

3.1 The Existing State Highway Network and Rationale for the Ō2NL Project

The Wellington Northern Corridor is a critical part of the state highway network that is characterised by its function in connecting Wellington to the central and upper North Island. It also provides an essential economic connection to Palmerston North, the largest freight node in central New Zealand. The route is particularly essential because no other resilient route exists.

The Ō2NL Project is the northern most section of the Wellington Northern Corridor, connecting to PP2Ō, which is due to be completed in late 2022. Once PP2Ō is complete, a minimum 4-lane expressway from central Wellington CBD to north of Ōtaki (Taylors Road) will be provided, as the Mackays to Peka Peka expressway opened in February 2017 and Transmission Gully is also due for completion in the near future.

Issues with the form and functioning of the existing section of SH1 between Ōtaki and north Taitoko/Levin have been identified and well documented over a number of years. These issues impact on the safety of the route, the economy of the lower North Island and the liveability of the surrounding area.

In the five years to 2020 there were 10 fatal crashes and 36 serious injury crashes on SH1 and SH57 in the Ō2NL Project area. These crashes resulted in 59 deaths and serious injuries. Additionally, there were 107 minor injury crashes, and 300 non-injury crashes. The statistics for the preceding 10 years are similar. Two of New Zealand's top 100 dangerous intersections are along the current highway[3].

Reasons for the safety of the route being compromised include:

- poor road geometry and alignment;
- narrow shoulders;
- roadside hazards; and
- a very high number of intersections and accessways.

These deficiencies, and the safety impacts of them, will be compounded by the forecast growth in travel demands, noting that at Ohau, the existing network carries approximately 18,300 vehicles per day, including over 1,750 heavy vehicles. This is estimated to increase to 29,500 vehicles by 2039 using the medium growth forecast by HDC.

In terms of resilience, SH1 is critical to the accessibility of Wellington because the only other route is on State Highway 2 ("SH2"), including the Remutaka Hill (itself at high risk of closure in a significant event). When an event occurs between Manakau and Ohau that closes the highway, the trip from Wellington to Taitoko/Levin increases by at least 2 hours outside of peak hours.

The Ōtaki to north of Taitoko/Levin section of SH1 is at high risk of closure particularly from:

- earthquakes – five bridges have a high or significant earthquake disruption risk, four of which are located on SH1 between Manakau and Ohau and have no viable alternate route;
- flooding – the existing highway passes through a floodplain and is also subject to surface flooding (two recent large-scale events closed the highway – one for 90 minutes and the other for over 24 hours);[4]
- crashes – high severity crashes often occur between Manakau and Ohau resulting in highway closures for several hours.

[3] Original 100 intersections 2016 update.pdf (fyi.org.nz)

[4] In addition to full closures, 73 unplanned events relating to flooding, ice or surface water affected SH1 in the five years to 2020.

An indicative economic assessment of the impact in a scenario where SH1 was closed and where there was no viable alternative (except SH2) puts the total cost per day to road users at approximately $2 million[5].

Growth in Horowhenua is occurring at the fastest rate in a generation. The Horowhenua Socio-Economic Projections Update Report predicts that this growth will continue, especially considering the investment in the transport corridor between Wellington and Ōtaki and the rising cost of living in the main urban centres. HDC projections to 2040 equate to an additional 16,000 people living in the district as compared to 2019.[6] To provide for this demand, HDC has identified growth areas, including at Ohau, Manakau and Taitoko/Levin East (and particularly the area subject to Proposed PC4 over which this designation is sought). Growth, including at these growth areas, places additional demands on the local roads and state highway network, including in respect of congestion, the ability to gain access to the networks and the ability to safely use the roading network.

The Ō2NL Project provides capacity on the state highway and local road network and improved intra and inter regional connections to better support projected growth in Horowhenua.

The existing SH1 runs through the middle of Taitoko/Levin. The conflict between the use of SH1 Oxford Street as both a main freight route and a town centre results in the town centre attractiveness being much lower than it otherwise could be. This is due to a range of factors such as:

- noise;
- vehicle emissions;
- road safety;
- odour; and
- severance.

HDC's 'Transforming Taitoko/Levin Town Centre Strategy' includes the following objectives (amongst others):

- consolidate its form and concentrate development and investment to the west of Oxford Street;
- become a 'destination' that does not rely on state highway through-traffic for economic success;
- offer a high quality public realm that conveys an intrinsic sense of place that is timeless;
- provide transport options that optimally serve the community and all of its constituents.

Having SH1 (Oxford Street) running through the centre of Taitoko/Levin compromises the ability for HDC to meet these objectives.

If growth occurs as forecast, the number of vehicles passing through Taitoko/Levin is projected to increase from 14,100 vehicles per day with 1,100 heavy vehicles (2019) to 19,000 vehicles per day by 2039, including a near doubling of the number of heavy vehicles to over 2,000 per day.

In addition to the completion of the other elements of the Wellington Northern Corridor, a number of safety improvements have been implemented over recent years, most notably in Ohau and Manakau. To the north of Taitoko/Levin, the replacement of the Whirokino Trestle and Manawatū River Bridge has recently been completed, opening up this route to High Productivity Motor Vehicles that, in turn, increases freight traffic (trucks) on this route.

[5] 'Ōtaki to North of Levin Indicative Business Case' December 2018, Page 3.
[6] 75th percentile.

3.2 The Project Route

Since the late 1980s there have been numerous investigations into an improved SH1 corridor in the Horowhenua District, including to bypass Taitoko/Levin[7]. These studies have considered the issues relating to the existing state highway including in respect of resilience, geometric design, safety record and increasing congestion.

These earlier investigations informed an Indicative Business Case ("IBC") that was developed in 2018[8]. The IBC investigation commenced by considering traffic management options (including public transport and speed reductions), and also considered options to improve the existing state highway. These were discounted as they could not solve the problems on this part of the network. The IBC investigations then developed a long list of options for an offline highway taking into consideration historic studies, previous investigation stages of Ōtaki to north of Levin and input from the community and stakeholders (including HDC).

The IBC long list of options was reduced to thirteen different options through a four-stage community workshop based multi-criteria analysis ("MCA"), with these options being further refined to a short list of 3 northern options and 2 southern options due to impacts on cultural values, traffic modelling predictions and constructability considerations. Further consultation and analysis undertaken in 2018 resulted in the identification of the preferred corridor.

The IBC recommended a corridor option to the east of the existing SH1 (option S6) that would bypass Taitoko/Levin to the east of SH57 (option N4). Option N4 runs through the western side of what was called 'Gladstone Green' development. At this time, it was recognised that the development of Ō2NL and Tara-Ika would need careful planning to ensure they "*are appropriately integrated without significant impact on one another*."

In January 2020 the Government announced funding for Ō2NL as part of the NZUP. Since then, further work has been done on refining the Project, including its integration with Tara-Ika. Alignment options within the preferred corridor, including potential interchange locations, have been developed and subject to MCA processes, consultation and stakeholder engagement. These route refinement investigations are to be reported in a Detailed Business Case Report ("DBC"). It is this refined corridor (where it traverses the land subject to Proposed PC4) that is accommodated by the proposed designation and is the subject of the NoR.

Part E of this Report illustrates the options considered in Figure 11 – Long List of Options, Figure 12 – IBC Short List of Options and Figure 13 – Preferred Corridor for Ō2NL.

3.3 Integration with Proposed Plan Change 4 to the Horowhenua District Plan

In 2008 HDC released the Horowhenua Development Plan looking at a 20-year horizon of development in the district. The Gladstone Green development (Area 7) was recognised as the most appropriate for greenbelt (2,000m^2 to 5,000m^2 lots) residential development. Structure Plan 13 was included in the District Plan to recognise this future development area (with actual development of this area deferred until infrastructure to support the development was implemented). In 2013, the Horowhenua Development Plan

[7] Since the mid-1980s this has included:
- Levin Bypass Scoping Report, 1989, Works Consultancy Services;
- Levin Bypass Project Investigation, 1990, Works Consultancy Services;
- Levin Transportation Study, 1995, Traffic Design Group;
- SH1 Horowhenua District Strategy Study, 1996, Works Consultancy Services;
- Himatangi to Waikanae - Review and Development Study, 2000, Worley;
- Himatangi to Waikanae - Strategy, 2000, Worley;
- SH1 Levin to Ōtaki Expressway – Proposed Designation Methodology, 2000, Meritec;
- Roads of National Significance (RoNS) Wellington Airport to North of Levin Scoping – Taylors Road Ōtaki) to North of Levin, 2010, New Zealand Transport Agency;
- Taylors Road to Pukehou Rail Overbridge – RoNS Corridor Study, 2010, Opus.

[8] The IBC was subject to a re-evaluation process in 2018 to ensure that it aligned with the new priorities and strategic direction set out in the 2018-28 Government Policy Statement on Land Transport.

was revised to reflect updated growth projections, taking into account the effect on growth arising from the Wellington Northern Corridor roading projects (of which Ō2NL is a part).

In November 2018 HDC adopted the Horowhenua Growth Strategy 2040 that recognises the significant scale of predicted growth and identifies projected housing and business land requirements out to the year 2040. The Horowhenua Growth Strategy 2040 recognises that any growth planning to provide for residential activities needs to be cognisant of the state highway network. An objective is to address in any new growth areas the potentially disconnecting influence of main road/highways either current or future planned. In relation to noise, traffic and other effects of infrastructure, the Horowhenua Growth Strategy 2040 acknowledges that it is more desirable to direct residential growth away from incompatible land uses.

The Horowhenua Growth Strategy 2040 retained Gladstone Green (LS6) as green belt residential development (albeit at predicated greater density) in the Horowhenua Growth Strategy 2040. HDC has prepared a master plan for this area that is now subject to Proposed PC4, with the name Tara-Ika gifted by the Muaūpoko Tribal Authority.

Proposed PC4 was publicly notified in November 2020 and applies to 420 hectares of land located immediately east of Taitoko/Levin and bordered by SH57, Queen Street East, Gladstone Road and Tararua Road. Proposed PC4 introduces a new 'Tara-Ika Multi-Zone Precinct' Chapter to the District Plan that includes a new structure plan and applies residential, commercial and open space zones (and associated rules) to the Tara-Ika Growth Area. The name Tara-Ika has been gifted by Muaūpoko and is a reference to a significant ancestor.

The preferred corridor for the Ō2NL Project traverses the area subject to Proposed PC4 with the route being generally east of, and parallel to, SH57. The structure plan included in Proposed PC4 shows the Ō2NL Project preferred corridor (as included in the IBC) but Proposed PC4 does not include provisions that provide for the development, protection or integration of the corridor of the planned state highway with development of the Tara-Ika Growth Area.

As part of the Proposed PC4 process HDC's position in respect of the Ō2NL Project, as expressed in the 'Horowhenua District Plan Change Section 42A Report Proposed Plan Change 4 Tara-Ika Growth Area October 2021' ("Section 42A Report"), is as follows:

> *"O2NL currently has no formal RMA status given it is yet to be subject of any RMA application. I also note the detailed design work has not been completed. Therefore, I do not consider it practical for the plan change to attempt to control or manage the integration or potential interface effects to a greater extent than already recommended in the previous section of the report. The NOR process for O2NL is the appropriate process to carefully consider how the highway can integrate into an urban environment."*[9]

Submissions on Proposed PC4 were heard by a hearings panel in late 2021. That included the submission and further submission made by Waka Kotahi and evidence in respect of how Proposed PC4 responds to and provides for SH57 and the Ō2NL Project, including the integration of future urban development with the current and proposed state highway infrastructure. The position taken by Waka Kotahi, supported by its expert witnesses, was that the provisions of PC4 should actively plan and provide for the Ō2NL corridor, and for the appropriate integration of Ō2NL and development at Tara-Ika. Provisions to that effect have been proposed by Waka Kotahi and a form of these provisions have been agreed with HDC and provided to the hearing panel on 16 February 2022 for consideration as part of decision-making.

3.3.1 Notice of requirement – Section between Queen Street East and Tararua Road

In addition to its proposed amendments to the PC4 provisions, a designation is sought over the area subject to Proposed PC4 in advance of notices of requirement being given, and resource consents being sought, for the Project in its entirety.

A designation over the area subject to Proposed PC4 will protect the land necessary for the Ō2NL Project and will enable HDC, landowners and Waka Kotahi to appropriately and efficiently integrate the planning, consenting, design, construction and maintenance of Ō2NL and the Tara Ika Growth Area. In turn, this will

[9] Section 42A Report, paragraph 630.

result in a high quality, well connected and resilient urban development and will also provide for a modern fit-for-purpose state highway that is integrated with, and appropriately connected to, its surroundings.

Advancing the designation over the Tara-Ika Growth Area enables the design and development of the two projects to be integrated; protects the Ō2NL route; and provides certainty for stakeholders and the community (including in respect of planning for the Taitoko/Levin town centre).

It is anticipated that additional notices of requirement will be given for the Ō2NL corridor in the near future. At the same time as these NoRs are given, applications will be made for resource consents required to carry out works along the entire Ō2NL Project route, that is, both in the section subject to this NoR, and in the remainder of the Ō2NL Project. It is desirable, and possible, that the latter planning approvals will 'catch-up' with this NoR and be considered together from a statutory process perspective.

3.4 The Existing State Highways

The Ō2NL Project will become the new SH1 and will replace the existing SH1 and that part of the existing SH57 along Arapaepae Road. Once the Ō2NL Project has been constructed and opened, these existing sections of state highways (then bypassed by the Project) will function as local roads providing access for communities to various local amenities and uses in the district, including as access to the new highway. These existing sections will also provide an alternative strategic route for resilience.

The process associated with the revocation of the existing state highway is subject to separate procedures and discussions with stakeholders. This process will be carried out in accordance with the relevant provisions of the LTMA and/or the Public Works Act 1981 ("PWA") and GRPA.

4. Notice of Requirement for a Designation

4.1 Requiring Authority Status

A NoR for a designation may only be given by a requiring authority. Section 166 of the RMA defines a requiring authority as:

> *"(a) a Minister of the Crown; or*
>
> *(b) a local authority; or*
>
> *(c) a network utility operator approved as a requiring authority under section 167."*

Waka Kotahi is a network utility operator approved as a requiring authority under section 167(3) of the RMA for:

- the construction and operation (including the maintenance, enhancement, expansion, realignment and alteration) of any state highway network or motorway;[10] and
- the construction or operation and maintenance of cycleways and shared paths.[11]

Waka Kotahi is the requiring authority for the proposed designation.

4.2 The Proposed Designation

Section 168(2) of the provides:

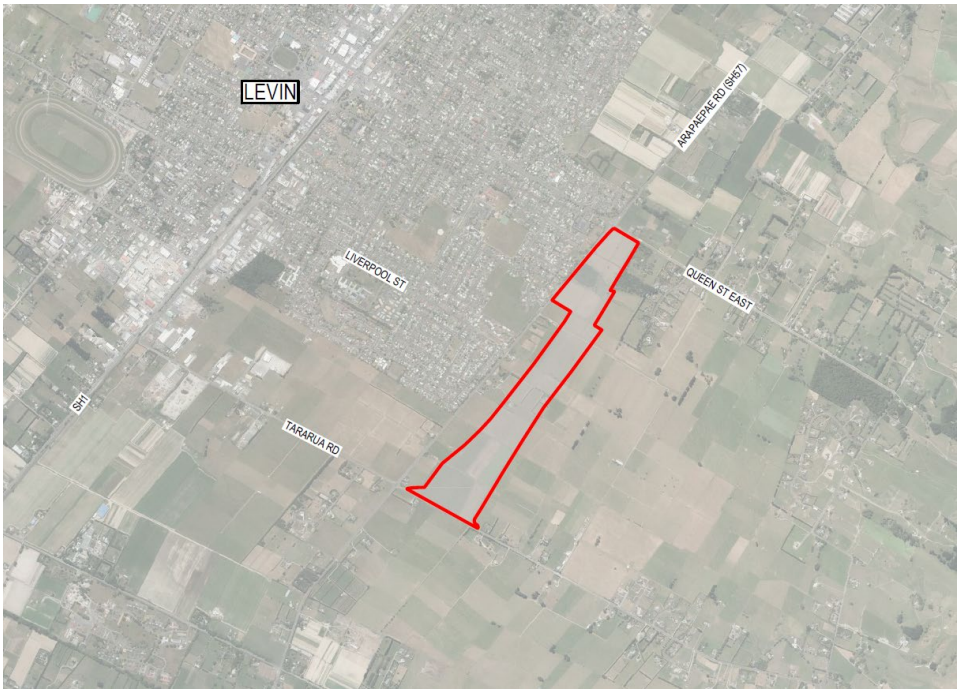
> *"(2) A requiring authority for the purposes approved under section 167 may at any time give notice in the prescribed form to a territorial authority of its requirement for a designation—*
>
> *(a) for a project or work; or*

[10] Resource Management (Approval of Transit New Zealand as a Requiring Authority) Notice 1994.
[11] Resource Management (Approval of NZ Transport Agency as a Requiring Authority) Notice 2015.

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

Waka Kotahi is seeking to designate land for the construction, operation, use, maintenance and improvement of a new state highway over the area of land east of Taitoko/Levin that is subject to Proposed PC4 to the Horowhenua District Plan. The land subject to the proposed designation is shown on the location plan included as Figure 2. It excludes Tararua Road and Queen Street East. The extent of the proposed designation is shown on plans included as **Appendix I**. The directly affected properties (including the areas affected) are listed in the Notice of Requirement for a Designation Form 18.

Figure 2 – Location of the Proposed Designation



4.3 Aspects and Approvals Not Covered

This NoR is only given for that part of the Project that traverses the land that is subject to Proposed PC4. There are future designations, consents, authorisations and approvals that are not sought at this time and are therefore not addressed in this documentation. These may include:

- designations in the Kāpiti Coast District Plan and Horowhenua District Plan over those parts of the Ō2NL Project that are not subject to this NoR;
- regional resource consents that may be required by the relevant provisions of operative Regional Plans for the Wellington Region[12]; the proposed Natural Resources Plan for the Wellington Region ("PNRP") and the Horizons One Plan;
- the alteration or removal of the existing SH1 and SH57 designations;
- the submission of outline plans under section 176A of the RMA (Waka Kotahi is not seeking to waive the requirement to submit outline plans);
- requiring authority consent under section 177 of the RMA for works that may prevent or hinder an existing designated project or public work from KiwiRail (for crossing the existing rail corridor designation that is outside of the area subject to this NoR);

[12] The Regional Air Quality Management Plan, the Regional Freshwater Plan, the Regional Soil Plan and/or the Regional Plan for Discharges to Land.

- an archaeological authority that may be required by the Heritage New Zealand Pouhere Taonga Act 2014; and
- an authorisation given by the Director-General of the Department of Conservation under section 53 of the Wildlife Act 1953 in relation to any protected wildlife.

4.4 Project Objectives

The objectives of Waka Kotahi for the Ō2NL Project overall (including for the purposes of section 171(1) of the RMA) are:

- To enhance safety of travel on the state highway network.
- To enhance the resilience of the state highway network.
- To provide appropriate connections that integrate the state highway and local road network to serve urban areas.
- To enable mode choice for journeys between local communities by providing a north-south cycling and walking facility.
- To support inter-regional and intra-regional growth and productivity through improved movement of people and freight on the state highway network.

In the context of this NoR, and in terms of achieving the integration of the Ō2NL Project and the development of the Tara-Ika Growth Area, the latter three of these objectives are of particular importance.

4.5 Project Outcomes

In the context of this NoR, that applies to a section of the Ō2NL Project, the Project will particularly:

- protect the proposed Ō2NL Project corridor from development that may prevent or hinder the Ō2NL Project as it passes through the Tara-Ika Growth Area;
- efficiently and effectively respond to, and facilitate, growth in Horowhenua;
- enable the design and development of the Ō2NL Project and the Tara-Ika Growth Area to be integrated;
- provide certainty in respect of the location of the Ō2NL Project and protect the route;
- result in a high quality, well connected and resilient urban development.

In delivering the Ō2NL Project as a whole, and the Project Objectives set out above, the Ō2NL Project will respond to the identified issues associated with the existing state highway and realise the following benefits:

- improved safety through reduced deaths and serious injuries;
- enhanced resilience of the state highway network;
- facilitation of safe, efficient, growth in Horowhenua;
- assisting improvements to Taitoko/Levin's main retail area; and
- enhance efficiency through reduced travel times on the state highway network and improved intra and inter regional connectivity.

PART B: DESCRIPTION OF THE ENVIRONMENT

5. Overview

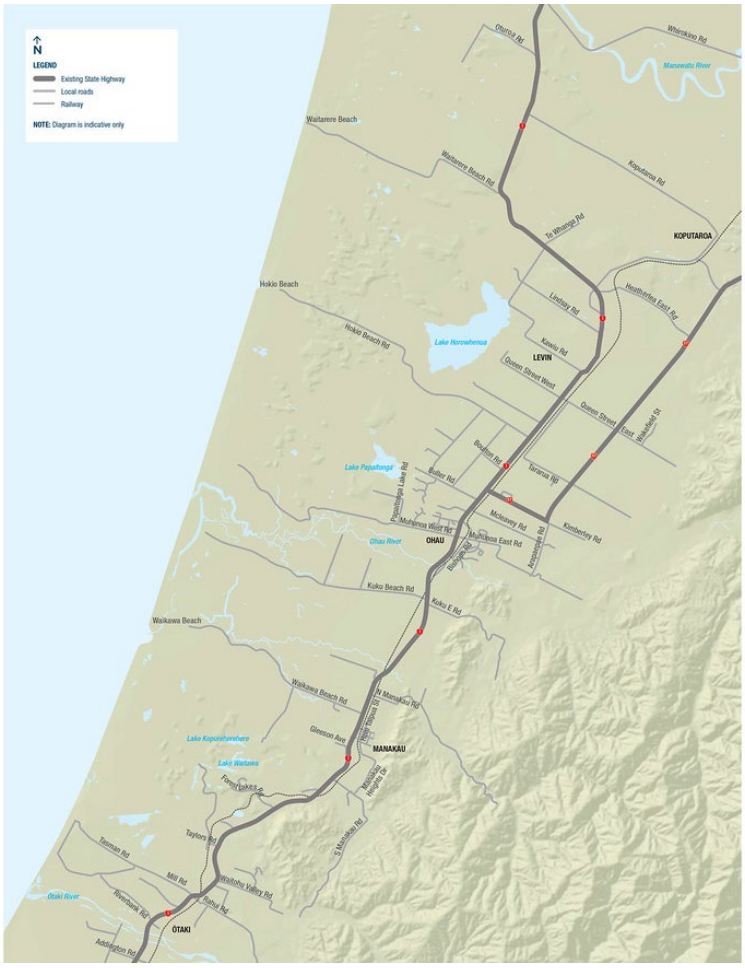
The following provides a description of the human, natural and physical aspects of the existing environment within which the Ō2NL Project, and specifically the section subject to this NoR, will be constructed and operated. The potential effects of the Ō2NL Project on this environment, and measures to mitigate or otherwise manage these effects, are set out in Part G.

6. Regional Context and Economy

The Ō2NL Project is the northern most section of the Wellington Northern Corridor and is generally located between the intersection of Koputaroa Road and SH1 north of Taitoko/Levin and the intersection of Taylors Road and SH1 to the north of Ōtaki, bypassing east of the Taitoko/Levin town centre towards the foothills of the Tararua Ranges. The section of the Ō2NL Project subject to this NoR is an approximately 2km section of the Project that extends from Queen Street East in the north to Tararua Road in the south and is immediately to the east of Arapaepae Road/SH57.

The Ō2NL Project is located within the Manawatū-Whanganui and Wellington Regions and the Kapiti Coast and Horowhenua Districts. The section of the Ō2NL Project subject to this NoR is located wholly within Manawatū-Whanganui Region and Horowhenua District. The Ō2NL Project Area is illustrated in Figure 3.

Figure 3 – Ō2NL Project Area



SH1 provides the main north to south roading connection through the Wellington and Manawatū-Whanganui Regions. The route passes through a number of urban areas, including Taitoko/Levin along the western coast, connects communities and economies and enables the movement of people and goods. SH57 provides a direct route to Palmerston North and access to Hawke's Bay.

Taitoko/Levin is the largest commercial centre in Horowhenua and also the largest commercial centre between Paraparaumu and Palmerston North, being located a similar distance from both locations (approximately 45km). The town centre accommodates nearly 400 businesses. Outside of Taitoko/Levin the area is predominantly agriculture or horticulture farmland (including market gardens) with the exception of smaller settlements. Taitoko/Levin functions as the business, administration, retail, civic, cultural, social and recreational hub for the surrounding area.

Taitoko/Levin has a population of 19,000 people, with approximately 6,600 people employed in the town. The region has been experiencing population growth, with projections of an additional 16,000 people living in the Horowhenua District by 2040, with more than 760,000 people living within an hour's drive of the Horowhenua District.

The Wellington Regional Growth Framework includes Levin as a high growth area. Expectations of growth have, at least in part, been derived from the improved travel time south to Wellington and the ability to provide for a 'commuter population'. HDC has identified the Tara-Ika area immediately east of Levin as one of the growth areas.

7. Natural and Physical Environment

7.1 Topography and Landscape

The Ō2NL Project is set within the Horowhenua plains. It is backdropped by the Tararua Ranges and foothills to the east and bordered by the Tasman Sea sand dunes country to the west. The Project extends from the Manawatū River in the north to the Waitohu Stream in the south.

The Horowhenua plains are a combination of outwash terraces from the Tararua Range and former seabed raised by tectonic activity. A number of watercourses flow across the plains towards the coast. None of these watercourses traverse the area subject to this NoR.

The plains originally supported lowland rainforest dominated by species such as tōtara, rimu and tawa and are now a productive (or 'working') landscape interspersed with pockets of lifestyle or rural residential development. Occasional small or remnant stands of tall indigenous forest remain.

Aesthetically, the dominant feature is the Tararua Ranges and foothills backdrop. Other foothills are also distinctive landmarks including the Arapaepae Ridge east of Taitoko/Levin. The aesthetic qualities of the locality include the proximity of the Tararua Ranges to the coast across sharply defined outwash plain and sand dune barrier.

The area subject to this NoR is within the Taitoko/Levin-Koputaroa landscape domain and is characterised by:

- flat and generally open terrain that is overlooked by the Arapaepae (Kohitere) hills backdrop;
- distinctive terrace landform between the Arapaepae hills and Punahau (Lake Horowhenua), known as Horowhenua (the great hillslide) from which the district derives its name;
- the absence of permanent streams;
- adjacency to Taitoko/Levin and SH57; and
- the 'Ashleigh' homestead and adjacent remnant stands of bush.

There are no outstanding natural features or landscapes identified in either the One Plan or the District Plan.

Figure 4 and Figure 5 further illustrate the landscape context of the area subject to the proposed designation.

Figure 4 – View of the Area Subject to the NoR: Looking South from Midway Between Queen Street East and Tararua Road

Figure 5 – View of the Area Subject to the NoR: Looking North from Tararua Road

7.2 Landforms, Geology and Natural Hazards

The Ō2NL Project traverses a series of coalescing alluvial fans that form a piedmont plain between the Tararua Range and the coast. In the area subject to this NoR the geological formation is 'Late Pleistocene River Deposits' (known as "Q2a") being poorly to moderately sorted gravel with minor sand or silt underlying terraces; includes minor fan gravel. This is shown on the geological map included as part of the drawings at **Appendix I**.

The land use capability ("LUC") system groups land into eight different classes based on geology, soils, slope, erosion and vegetation. The land subject to this NoR is classified as 3s2. Table 1 includes a description of LUC unit 3s2. The land is considered to be highly productive land, but not highly versatile.

Table 1 – LUC Unit Description

LUC unit description	Landform	Parent material	Dominant soil type	Slope (degrees)	Land use suitability	Livestock productivity su/ha [13]
3s2 Flat, medium height terraces with somewhat excessively drained soils developed from stony alluvium or patchy loess. Stones occur throughout the profile. Depth to gravels is 30-60cm	Medium height terraces	Gravels Patchy alluvium over gravels Patchy loess over gravels	Yellow-brown shallow and stony soils associated with intergrades between yellow-grey earths and yellow-brown earths. Yellow-brown shallow and stony soils associated with yellow brown earths: Ashhurst silt loam, stony phase Ashhurst stony silt loam Kawhatau stony silt loam Kawhatau stony silt loam	0-3	Intensive pastoral farming Dairying Horticulture Root and green fodder crops.	18-24 su/ha

The geomorphology of the area is revealed in its name – Horowhenua, which means "the great landslide". This name could be a reference to the last significant earthquake event. This earthquake occurred on the Northern Ohariu Fault between several hundred and one thousand years ago and caused ground surface displacement of 3 to 4 metres.

The active Northern Ohariu Fault is visible in the landscape at the edge of the Tararua foothills in the Arapaepae area. The fault remains capable of generating large damaging earthquakes, and, as a consequence, landslides on the western flanks of the Tararua Ranges from Ōtaki to Palmerston North. In addition, such an event could give rise to liquefaction in low-lying parts of Horowhenua, where the young sand country, river terraces and flood plains are known to be susceptible to ground failure.

Beyond the earthquake risk set out above, there are no identified natural hazards in the area subject to the proposed designation. That is, Manawatū-Whanganui Regional Council ("Horizons") does not have any flood data or records for the area.

7.3 Terrestrial Ecology

7.3.1 Indigenous vegetation and habitats

The proposed designation is located in the Manawatū Plains Ecological District, in the Manawatū Ecological Region. The Manawatū Plains Ecological District is almost entirely used for agricultural or horticultural purposes with approximately 98% of original vegetation cover being lost, and only isolated areas of indigenous wetland and forest remaining. These remaining areas include locally characteristic tōtara forest, some black beech forest and mixed podocarp-broadleaved forest, and in the south, forest remnants dominated by kohekohe and/or tawa. Most of the remaining areas of indigenous vegetation are very small, being less than a few hectares in extent, and have regenerated following earlier vegetation clearance.

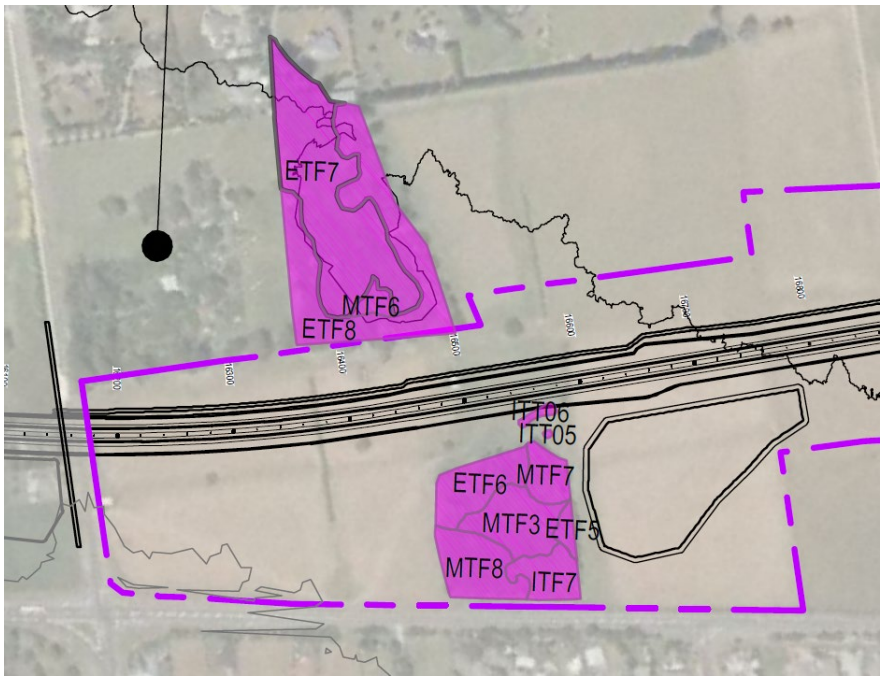
There are no protected natural areas within the proposed designation.

All wetlands and indigenous vegetation within the wider Ō2NL Project area lie within an area classified as Acutely Threatened (<10% indigenous cover remaining) by the Manaaki Whenua Landcare Research Threatened Environment Classification ("TEC").

[13] Stock units per hectare with one stock unit being equivalent to one 55kg ewe producing one lamb and eating 550kg of dry matter per year.

While the proposed designation is generally over farmland, the following Figure 6 includes an excerpt of a drawing included in **Appendix I** that shows the location and description of ecology systems within, and adjacent to, the proposed designation.

Figure 6 – Excerpt of 'Topography and Ecology Systems' Drawing



The ecology systems shown in Figure 6 as within the proposed designation are described in Table 2 and the ecological attributes and assigned value are set out. The vegetation that is included within the proposed designation (to the south of the proposed alignment at the bottom of the drawing) is known as Arapaepae Bush. The area of vegetation to the immediate east has been deliberately omitted from the proposed designation extent.

Table 2 – Ecology Systems Description, Attributes and Value

Habitat ID	Vegetation and Habitat Description	Attributes	Value
ITT06	Indigenous terrestrial treeland: Tītoki-hīnau-maire treeland on terrace	Representativeness - Supports some mature indigenous trees, but does not comprise a typical structure and composition	Low
		Rarity/Distinctiveness - Includes indigenous trees on an Acutely Threatened Land environment.	Moderate
		Diversity and Pattern - Supports a low diversity of indigenous plant species. Unlikely to support a diverse range of terrestrial invertebrate species. Floral community may provide fruit and seeds for indigenous birds at times. Habitat may provide stepping stones for avian species to move between sites.	Low
		Ecological Context - Isolated trees within pasture, which provide some habitat for indigenous birds and a stepping stone between two forest remnants.	Moderate
		Overall Ecological Value: Moderate	
ITT05	Indigenous terrestrial treeland: Tītoki treeland on terrace	Representativeness - One mature indigenous tree in pasture.	Low
		Rarity/distinctiveness - Mature indigenous tree on an Acutely Threatened Land Environment.	Moderate

Habitat ID	Vegetation and Habitat Description	Attributes	Value
		Diversity and Pattern - Supports a low diversity of indigenous plant species. Unlikely to support a diverse range of terrestrial invertebrate species. Single tree may provide a stepping stone for avian species to move between sites.	Very Low
		Ecological Context - Isolated tree within pasture, which may provide some habitat for indigenous birds.	Low
		Overall Ecological Value: Low	
MTF7	Mixed terrestrial forest: tītoki-karaka forest on terrace	Representativeness – Despite the prevalence of a non-local indigenous species, this vegetation type supports mature indigenous forest species, representative of the typical structure and composition of original forests in the area. This forest remnant is listed within the PNAP report (Arapaepae Bush, 77) (Ravine 1995).	Moderate
		Rarity/Distinctiveness – Includes indigenous vegetation on an Acutely Threatened land environment. Habitat for ornate skink (At Risk – Declining) and historic records of *Powelliphanta traversi* (may or may not still be present). Peripatus likely present. Potential habitat for kākā (At Risk – Recovering), but not recorded during field surveys.	High
		Diversity and Pattern – Supports a low diversity of indigenous plant species. Complex ground cover including dense leaf-litter, debris and vegetation that provides a moist environment for indigenous snails, Coleoptera and other invertebrate species. Diverse floral community provides fruit and seeds for indigenous birds.	Low-Moderate
		Ecological Context – Small, relatively isolated forest remnants that provide habitat for indigenous fauna. Very few areas of indigenous forest habitat remain on the Horowhenua Plains, and these remnants provide stepping stone habitat for mobile fauna species.	Moderate
		Overall Ecological Value: Moderate	
ETF6	Exotic terrestrial forest: Redwood forest on terrace	Representativeness – The wider forest remnant within which this habitat is found is listed within the PNAP report (Arapaepae Bush, 77) (Ravine 1995). Dominated by exotic species, but includes areas of indigenous species beneath the exotic canopy.	Low
		Rarity/Distinctiveness – Habitat for ornate skink (At Risk – Declining) and historic records of *Powelliphanta traversi* (Threatened – Nationally Endangered) which may or may not still be present. Peripatus likely present.	High
		Diversity and Pattern – Supports a low diversity of indigenous plant species. Complex ground cover including dense leaf-litter, debris and vegetation that provides a moist environment for indigenous snails, Coleoptera and other invertebrate species. Floral community may provide fruit, seeds, nectar and insects for indigenous birds.	Low-moderate
		Ecological Context – May provide some limited stepping stone habitat for indigenous fauna species as very few areas of indigenous forest habitat remain on the Horowhenua Plains.	Low
		Overall Ecological Value: Moderate	
MTF3	Mixed terrestrial forest: False acacia-tītoki-cherry forest on terrace	Representativeness – Despite the prevalence of false acacia (*Robinia pseudoacacia*) and cherry (*Prunus sp.*), this vegetation type supports mature indigenous forest species, representative of the typical structure and composition of original forests in the area. This forest remnant is listed within the PNAP report (Arapaepae Bush, 77) (Ravine 1995).	Moderate

Habitat ID	Vegetation and Habitat Description	Attributes	Value
		Rarity/Distinctiveness – Includes indigenous vegetation on an Acutely Threatened land environment. Habitat for ornate skink (At Risk – Declining) and historic records of *Powelliphanta traversi* (Threatened – Nationally Endangered) which may or may not be present. Peripatus likely to be present. Potential provision of fruits and seeds for kākā (At Risk – Recovering).	High
		Diversity and Pattern – Supports a low diversity of indigenous plant species. Complex ground cover including dense leaf-litter, debris and vegetation that provides a moist environment for indigenous snails, Coleoptera and other invertebrate species. Floral community provides fruit, seeds and insects for indigenous birds. Habitat may provide stepping stones for avian species to move between sites.	Low-moderate
		Ecological Context – Small, relatively isolated forest remnants that provide habitat for indigenous fauna. Very few areas of indigenous forest habitat remain on the Horowhenua Plains, and these remnants provide stepping stone habitat for mobile fauna species.	Moderate
		Overall Ecological Value: Moderate	
ETF5	Exotic terrestrial forest: Sweet cherry forest on terrace	Representativeness – The wider forest remnant within which this habitat is found is listed within the PNAP report (Arapaepae Bush, 77) (Ravine 1995). Dominated by exotic species.	Low
		Rarity/Distinctiveness – Habitat for ornate skink (At Risk – Declining) and historic records of *Powelliphanta traversi* (Threatened – Nationally Endangered) which may or may not still be present. Peripatus likely present.	High
		Diversity and Pattern – Supports a low diversity of indigenous plant species. Complex ground cover including dense leaf-litter, debris and vegetation that provides a moist environment for indigenous snails, Coleoptera and other invertebrate species. Floral community may provide fruits and seeds for indigenous birds.	Low-moderate
		Ecological Context – May provide some limited stepping stone habitat for indigenous fauna species as very few areas of indigenous forest habitat remain on the Horowhenua Plains.	Low
		Overall Ecological Value: Moderate	
MTF8	Mixed terrestrial forest: Tītoki-false acacia-poataniwha-karaka forest on terrace	Representativeness – Despite the prevalence of a non-local indigenous species, this vegetation type supports mature indigenous forest species, representative of the typical structure and composition of original forests in the area. This forest remnant is listed within the PNAP report (Arapaepae Bush, 77) (Ravine 1995).	Moderate
		Rarity/Distinctiveness – Includes indigenous vegetation on an Acutely Threatened land environment. Habitat for ornate skink (At Risk – Declining) and historic records *of Powelliphanta traversi* (may or may not still be present). Peripatus likely present. Potential habitat *for* kākā (At Risk – Recovering), but not recorded during field surveys.	High
		Diversity and Pattern – Supports a low diversity of indigenous plant species. Complex ground cover including dense leaf-litter, debris and vegetation that provides a moist environment for indigenous snails, Coleoptera and other invertebrate species. Diverse floral community provides fruit, seeds, nectar and insects for indigenous birds.	Low-Moderate
		Ecological Context – Small, relatively isolated forest remnants that provide habitat for indigenous fauna. Very few areas of indigenous forest habitat remain on the Horowhenua Plains, and these remnants provide stepping stone habitat for mobile fauna species.	Moderate

Habitat ID	Vegetation and Habitat Description	Attributes	Value
		Overall Ecological Value: Moderate	
ITF7	Indigenous terrestrial forest: Tītoki forest on terrace	Representativeness – This vegetation type supports mature indigenous forest species representative of the typical structure and composition of original forests in the area. This forest remnant is listed within the PNAP report (Arapaepae Bush, 77) (Ravine 1995).	Moderate
		Rarity/Distinctiveness – Includes indigenous vegetation on an Acutely Threatened Land Environment. Habitat for ornate skink (At Risk – Declining) and historic records of *Powelliphanta traversi* (Threatened – Nationally Endangered) which may or may not still be present. Peripatus likely to be present. Potential habitat for kākā (At Risk – Recovering), but not recorded during field surveys.	High
		Diversity and Pattern – Supports a moderate diversity of indigenous species. Complex ground cover including dense leaf-litter, debris and vegetation that provides a moist environment for indigenous snails, Coleoptera and other invertebrate species. Floral community provides fruit, seeds and nectar for indigenous birds.	Moderate
		Ecological Context – Small, relatively isolated forest remnants that provide habitat for indigenous fauna. Very few areas of indigenous forest habitat remain on the Horowhenua Plains, and these remnants provide stepping stone habitat for mobile fauna species.	Moderate
		Representativeness – This vegetation type supports mature indigenous forest species representative of the typical structure and composition of original forests in the area. This forest remnant is listed within the PNAP report (Arapaepae Bush, 77) (Ravine 1995).	Moderate
		Overall Ecological Value: High	

7.3.2 Indigenous fauna

Bats

The proposed designation includes moderate-quality potential foraging habitat for long-tailed bats (*Chalinolobus tuberculatus* - classified as Threatened – Nationally Critical'), and some potential roosting habitat in mature indigenous and exotic trees. However, based on the information held in the Department of Conservation ("DOC") Bat Distribution Database and following automatic bat monitoring that has not detected the presence of bats, it is considered highly unlikely that long-tailed bats are present.

Birds

Potential avifauna habitats have been surveyed across the whole of the Ō2NL Project area. A total of 21 indigenous birds have been recorded across the whole of the Ō2NL Project Area, including two Threatened and four At Risk species. However, none of the At Risk species have been recorded within the section of the Ō2NL Project that is subject to this NoR. The reason for this is because wetland habitat and open water are not present. On this basis, it is concluded that it is highly unlikely that dabchick, crake, black shag and bittern would be present.

NZ pipit has been heard at several properties along the alignment and their presence (occasional or permanent) within the Tara-Ika area cannot be discounted. Further notable species that have not been recorded but may be present include:

- kākā (At Risk - Recovering)
- tūturiwhatu/banded dotterel (Threatened - Nationally Vulnerable)
- kārearea/bush falcon (At Risk – Recovering)
- pōpokotea/whitehead (At Risk – Declining)

- pīhoihoi/New Zealand pipit (At Risk – Declining) and
- tōrea/South Island pied oystercatcher (At Risk – Declining).

Lizards

The area subject to the proposed designation is generally characterised by low diversity and abundance of lizards due to the highly degraded environment that likely contains high numbers of predatory mammals and birds.

A lizard survey detected only one lizard species, the ornate skink (*Oligosoma ornatum*, At Risk – Declining). It is anticipated that further ornate skink populations, copper skink (*O. aeneum*; At Risk – Declining) and glossy brown skink (*O. zelandicum*, At Risk – Declining) may also be present within the overall Ō2NL Project area. These lizards are likely to be concentrated around rank exotic grasslands and in gardens. Lizard populations may also be present along wide rough grass margins along farm tracks and road and rail verges, hedges, forest edges, and around farm buildings.

It is unlikely that arboreal geckos are present because it is difficult for arboreal lizards to colonise isolated habitat patches where there is a hard edge between habitats.

Terrestrial InvertebrateTo date, no terrestrial invertebrates classified as At Risk or Threatened have been recorded within the wider Ō2NL Project footprint. Two notable but non-threatened species of invertebrates recorded from properties within the alignment are peripatus and the giant land snail *Wainuia urnul*a.Notable species that may be present within the overall Ō2NL Project area but were not recorded during the survey include: *Powelliphanta spp.* (*P. traversi florida, P. traversi otakia*, and *P. traversi traversi*), the spiny longhorn beetle (*Blosyropus spinosus*), and the New Zealand mantis (*Orthodera novaezealandiae*).

8. Human Environment

8.1 Heritage

There are no Heritage New Zealand Pouhere Taonga's ("HNZPT") New Zealand Heritage List/Rārangi Kōrero places / areas or New Zealand Archaeological Association ("NZAA") recorded archaeological sites located within the proposed designation. Similarly, the One Plan and the District Plan do not include list any historic heritage or wāhi tapu sites in the proposed designation.

There is one verified archaeological site[14] in the vicinity of the proposed designation, being 'Ashleigh', and one potential archaeological site, being an ancient Māori track (referred to by Muaūpoko as a spiritual pathway) through former forest connecting the Weraroa clearing to birding camps on the Arapaepae Ridge.

Similarly, the New Zealand Heritage List/Rārangi Kōrero and the District Plan[15] do not 'list' any sites, buildings or structures located within the proposed designation (or in the vicinity). James Prouse's homestead, 'Ashleigh', is located to the east of the proposed designation at 1024 Queen Street East. 'Ashleigh' is a two-storey villa and associated outbuildings that were built around 1891. While not listed, 'Ashleigh' is considered the have medium heritage value.[16]

8.2 Land Use

The land subject to this NoR is generally used for sheep and beef farming and market gardening. The land holdings vary in size from small lifestyle type properties to larger rural properties. The majority of land is used for grazing.

[14] A verified archaeological site is a location, building or object that fulfils the statutory requirements to be considered an archaeological site under the Heritage New Zealand Pouhere Taonga Act 2014 and where the location and extent of the site are known to a high precision.

[15] 'Schedule 2: Historic Heritage – Buildings, Structures & Sites'

[16] Based on the Waka Kotahi 'Guide to assessing cultural heritage effects for State highway projects', dated March 2015.

The proposed designation is located on the fringe of Taitoko/Levin with residential development to the west (and west of SH57) and east, being the Redwood Grove development that is accessed from Queen Street East. The NoR traverses an area known as the Tara-Ika Growth Area, being a 420 hectare area of land that has been identified for future urban development. HDC anticipate that more than 3,500 houses, a small commercial area, new parks and reserves, and educational facilities will be built within the Tara-Ika Growth Area. The Growth Area is subject to Proposed PC4.

In addition to the road transport network, that is described below, the following network utilities and infrastructure are located within or near the proposed designation:

- KiwiRail's NIMT to the west;
- Electra Limited's Mangahao to Levin 33kV sub-transmission line, to the east; and
- a number of other utilities such as local water supply, telecommunications and electricity supply infrastructure.

Contaminated land

Based on a Preliminary Site Investigation ("PSI"), the area subject to the NoR is not located on or near any sites, including sites identified on the Hazardous Activity or Industries List ("HAIL"), where use or deposition of hazardous substances has, or may have, occurred historically.

Noise and vibration

The existing noise environment is understood based on predicted sound levels from the existing state highway network and a combination of attended and unattended sound level measurements. Results are modelled in terms of annual average daily sound level ($L_{Aeq(24hr)}$), which allows the existing environment to be represented by a single number, but it should be noted that there will be day-to-day variation in road-traffic noise and noise from other sources. Noise measurements were taken prior to the safety improvements, including speed reduction, on SH57 and Queen Street East.

For this NoR, SH57 is the dominant source of noise, especially during morning and afternoon peaks, when there is often a steady stream of traffic. At night, traffic becomes sparse and individual vehicles are audible over longer periods.

To the east of the proposed designation, there are several dwellings on Queen Street East, located on rural properties (including 'Ashleigh'). There are also dwellings on Redwood Grove on residential sections. Measured sound levels at Redwood Grove were below 40 dB $L_{Aeq(15min)}$ at night.

To the west of the proposed designation, and west of SH57, there is a relatively dense residential area. Sound levels at dwellings immediately adjacent to SH57 range between 55 and 65 dB $L_{Aeq(24h)}$ depending on their setback from the existing state highway.

A plan showing the predicted sound levels for the existing environment is included in **Appendix III**.

Zoning and District Plan features

As noted above, the proposed designation is located wholly within the Manawatū-Whanganui Region and the Horowhenua District. **Appendix II** sets out:

- the relevant regional policy statement and regional plan provisions included in the operative Horizons One Plan ("One Plan");
- the relevant provisions of the operative Horowhenua District Plan ("District Plan"), including the relevant planning maps; and
- the provisions, including amended planning maps, of proposed PC4 to the District Plan.

The proposed designation is over land that is zoned 'Greenbelt Residential Deferred' in the operative District Plan. The proposed designation is also over land identified as within the Levin-Koputaroa Landscape Domain. The District Plan (in Chapter 2 Appendix 1) includes a description of the landscape assessment for this domain. The assessment is reproduced in Table 3. It should be noted that the description in this table appears to mostly reflect the area north of Taitoko/Levin that comprises most of the Levin-Koputuroa

landscape domain and some characteristic described (such as gullies, dynamic streams, varied topography) are not relevant to the area of the proposed designation.

There are no other notations shown on the planning maps that apply to the area subject to the proposed designation. The operative District Plan also includes Structure Plan 13 'Gladstone Greenbelt Levin - Queen Street / Tararua Road'. Structure Plan 13 includes a notation for 'Transport Corridor (Future Upgrade)' in a location generally adjacent to SH57. This indicates a long-term aspiration for a new transport corridor in this area.

Table 3 – Levin-Koputaroa Landscape Domain: Landscape Assessment

Statute	Relevance
Landscape Character	
The landscape character of the Levin-Koputaroa domain is a direct result of flooding processes. Situated north of Levin, the domain displays the range of variation in topography.	
Landform	The domain's location results in the topography that is a product of both flood processes and loess, and includes fertile alluvial plains, low lying peat swamps, elevated areas and deeply incised gullies. The low lying peat areas also are affected by rises in the water table which results in ponding at various times. The dynamic streams within this domain and the influences of fluvial processes mean that areas within the domain are under threat from flooding.
Landcover	The original landcover has been reduced to remnant patches as a result of deforestation and drainage for primary production activities with pasture grasses, agricultural plant species and exotic shelterbelts becoming the dominant vegetation. The remnant bush areas, as well as the remaining significant wetland areas provide habitats for a range of indigenous flora and fauna.
Land use	The land use in this domain reflects the varied topography, with soil fertility, climate, aspect and proximity to water (above and below ground) promoting a range of activities. In general, the high class soils result in primary production activities including horticulture as being the most dominant land use, with a number of orchards and some smaller-scale production activities also present. The location and density of dwellings tends to be that associated with primary production and rural lifestyle settlement. Both State Highway 1 and 57 cross this domain, resulting in the rural areas being better connected than some other domains.
Visual Quality	
Natural Science Factors	The variation in topography and the large number of gullies and streams reveals the remnant natural representation of the complex environmental processes of this area. The modified elements of the regular geometry of pastures, shelterbelts and drains results in a multi-patterned and visually dynamic landscape.
Aesthetic values	The sense of this area being an intermediate zone is heightened by the ability to obtain views of both the beginning and end of the catchment process. These views tend to be either framed by landforms and vegetation, or unobstructed and expansive across open pasture. Alternatively, the undulating landscape can also result in a sense of enclosure within localised areas, particularly towards the elevated terrace and foothill areas.
Sensitivity	
The level of sensitivity depends largely on the part of the domain in question. In terms of ecological sensitivity, the areas in which the hydrological system dominates require consideration of any adverse impacts – particularly where it is unmodified. Maintaining view shafts across the plains and the ability to capture a view extending from the ranges to the sea are important characteristics of the domain.	

Statute	Relevance
Visual absorption capability ("VAC")	Because of the reasons above, the open expansive areas maintain a lower level of VAC, although the existence of mature shelter belts will provide a level of absorption for appropriate development. The more complex, undulating areas containing the gullies provides a higher level of VAC, however these also tend to be within or close to the more elevated areas so a clustered approach to development would be more appropriate than large lots containing isolated large dwellings.
Opportunities and Constraints	
This domain has extensive areas of high class soil but the mixed nature of the landform provides the potential to enhance natural values. The roading network in this domain provides a good level of connectivity. The extensive areas of pine forestry also provide the opportunity to reduce the visual impact of potential development within this area. Constraints to development include the sensitive ecological nature of the area. There are opportunities through land use change to benefit the existing natural values of the area (wetlands, streams and remnant bush areas) through rehabilitation and enhancement. The effects of building site location, effluent disposal design and location, earthworks and road construction on existing vegetation and waterways need consideration to avoid adverse visual or ecological impacts.	

Proposed PC4 was publicly notified in November 2020, submissions and further submissions have been made on the Proposed PC4[17]. A hearing was held in late 2021. A decision on these submissions has not been made. Proposed PC4 amends Planning Map 30 to apply the 'Residential Zone' over the majority of the area subject to the NoR. Proposed PC4 also replaces Structure Plan 13 with a new Structure Plan that includes the 'Ō2NL Corridor'. This corridor, as notified, does not precisely reflect the area subject to the NoR (although through the hearing process a corrected plan (and the details of this NoR) have been provided to the hearing panel).

8.3 Social

Taitoko/ Levin functions as the business, administrative, retail, civic, cultural, social and recreational hub for the surrounding area. These activities provide employment to a large number of people. Social infrastructure in Taitoko/Levin includes Te Takeretanga o Kura-hau-pō Culture, Community Centre and Library, the Horowhenua Health Centre, two secondary schools and a number of primary and 'intermediate' education options. Figure 7 shows key facilities and services in Taitoko/Levin.

The community has access to a range of amenities such as parks, beaches and rivers, markets, sports clubs, horse riding facilities and open spaces throughout the town, including the Levin Adventure Park. There are many organised community groups for different sectors of the community, including church groups, Age Concern and Keep Levin Beautiful.

8.4 Cultural

The area subject to the NoR includes spiritual pathways, views and connections from maunga and wāhi tapu in the Tararua Ranges to Taitoko/Levin, Punahau (known as Lake Horowhenua) and onwards to the sea.

The area was not permanently occupied but served as a vital part of the Maori economy being visited seasonally for spiritual and cultural practices and to gather resources or to cultivate cleared areas. The nearby Koputoroa stream and numerous puna (springs) meant that the area was a plentiful source of wai and kai. Muaūpoko refer to a spiritual pathway that connects the Tararua Ranges to Te Moana o Raukawakawa, which is watched over by the ornate skink *(Oligosoma ornatum*.The Waiopehu Reserve, near the site of a Maunu Wāhine– a clearing where Muaūpoko people could rest on their journeys to the Tararua Range, is located to the east of the proposed designation. Muaūpoko wāhine and tamariki would visit this area for reflection, respite, wānaga and spiritual practices. Maunu Wāhine reserve area was a place of

[17] The Muaupoko submission on Proposed PC4 seeks that the Plan Change provides a framework for the protection of features associated with Muaūpoko spiritual pathway and recognise the bush blocks and surrounding grassland as containing culturally significant species.

particular spiritual sanctuary and a place of healing. Today, the Waiopehu Reserve is the last piece of the formerly abundant forest environment and includes habitat for critically threatened taonga such as *Poweliphanta traversii*.

The Tara-Ika area is connected to Punahau and the Lake Horowhenua catchment. Muaūpoko and the Lake Trust is the mana whenua for the catchment recognised through their ownership of the Lake. This significant and special relationship should not be overlooked by any Crown agency, territorial authority in relation to decision making that effects water.

Figure 7 - Key Social Facilities and Services in Taitoko/Levin[18]

8.5 Transport

SH1 between Taitoko/Levin and Ōtaki is classified as a National (high volume) Road in the One Network Road Classification ("ONRC"). SH1 is the only route between the two centres and has one lane in each direction, although there are a few locations with passing lanes.[19]

SH1 through and north of Taitoko/Levin is classified as a National Road, providing north-south connections between Taitoko/Levin and the rest of the North Island (north and west). The 3.3 kilometre stretch of SH1 within Levin has a single lane in each direction, with a flush median for most of the length. This portion of the road has a 50km/h posted speed limit.

SH57 is an important strategic route that connects SH1 with Shannon, Tokomaru, and Palmerston North. SH57 through and north of Levin is classified as a National Road. The intersection of SH1 and SH57 is to the south of Taitoko/Levin town centre.

A number of safety improvements to the road network are occurring separately to the Ō2NL Project and will be completed in advance of the Ō2NL Project being opened. These improvements include the formation of a new roundabout at the Queen Street East/SH57 intersection; the formation of a new roundabout at the Tararua Road/SH57 intersection; sections of side barriers and painted wide centrelines on SH57.

Traffic volumes

Current (2019) traffic volumes on the state highway network are as follows:

- approximately 18,300 vehicles per day ("vpd"), including over 1,750 heavy vehicles, along SH1 near Ohau;

[18] Horowhenua District Council GIS 2018.

[19] Passing lanes have been progressively removed /closed in response to increasing safety concerns.

- on the section of SH1 north of the SH1/SH57 intersection, the traffic volume through Taitoko/Levin is approximately 14,100 vpd;
- on SH1 north of Taitoko/Levin, the traffic volume is approximately 11,500 vpd; and
- on SH57 north of Queen Street East is the traffic volume is over 9,400 vpd.

Walking and cycling

SH1 through Taitoko/Levin mostly has footpaths on either side of the road. There are two pedestrian crossings at signalised intersections, two median pedestrian refuges, and one zebra crossing. There are few formal provisions for cyclists.

The rural sections of SH1, between Taitoko/Levin and Ōtaki, and SH57, have sealed shoulders of varying widths (no sealed shoulders on the rail overbridges), so it is not suitable for walking or cycling.

Public transport

The provision and use of public transport in Horowhenua is limited. Currently public transport by bus makes up about 0.1% of the mode share for work trips and 14.7% of trips to education in the Horowhenua District. This is due to the limited public bus services available around Taitoko/Levin and surroundings. The current services (one return service per day) are, as follows:

- 'a day out in town bus service' that connects Taitoko/Levin, Waitarere Beach, Foxton, Foxton Beach, and Shannon every Friday;
- Taitoko/Levin to Waikanae service that runs Tuesdays and Thursdays; and
- Taotoko/Levin to Palmerston North commuter bus service that runs Monday to Friday.

There are also longer inter-city services that connect Taitoko/Levin with most other major destinations in the North Island.

Rail makes up about 1% of the mode share of trips to work and education in the Horowhenua District, with the Capital Connection providing a daily commuter rail connection between Taitoko/Levin and Wellington.

Safety

SH1 and SH57 in the Ō2NL Project area is one of the least safe state highway environments in New Zealand. Two of New Zealand's 100 most dangerous intersections are along the current highway.

There were ten fatal crashes and 36 serious injury crashes on SH1 and SH57 in the vicinity of the Project from 2016 - 2020. These are shown on Figure 8. In addition, there were 107 minor injury crashes, and 300 non-injury crashes.

Of the ten fatal crashes:

- five crashes were head-on collisions in high speed-zones (80km/h and above), with four of the five occurring on SH1, and one on SH57;
- two crashes involved vulnerable users, with one crash involving a cyclist while the other resulted in a pedestrian being struck, both in high-speed zones on SH1 in dry conditions; and
- the three remaining crashes had different causes, with one crash being a loss of control type; one being a train collision, and one involving a turning vehicle at an intersection in a 50km/h zone, which was the only fatal crash in an urban area.

As a result of the large number of high severity crashes on the SH1 and SH57 rural road sections, these roads are classified as High-Risk rural roads.

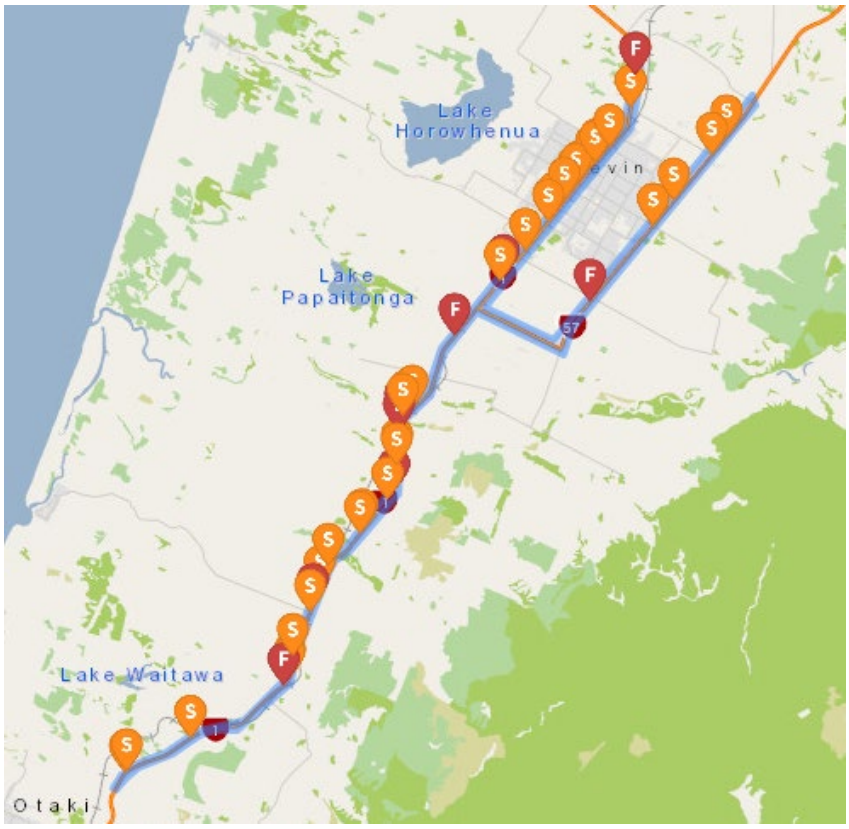
SH1 and SH57, in this location, both have a KiwiRAP Star Rating of 2. The KiwiRAP Star Rating is a published rating of how safe infrastructure is for the volume of traffic it carries. A very good road rates 5 Stars and a very poor road rates 1 Star.

Resilience

SH1 is at a high risk of closure (and the subsequent forming of significant queues) from:

- earthquakes because existing bridges have a high or significant earthquake disruption risk, four of which have no viable alternate route;
- flooding because SH1 passes through a floodplain and is also subject to surface flooding (for example, two recent large-scale events closed the highway between Ohau and Manakau - one for 90 minutes and the other for over 24 hours); and
- high severity crashes (as set out above).

Figure 8 – Fatal and Serious Crashes in the Vicinity of the Ō2NL Project (2016-2020)[20]



For the period 2016/17 to 2020/21, SH1 has recorded at least 4 unplanned closures per year (27 overall); most were due to crashes. The average closure duration was around 3 hours. Closures on the SH57 section of the Ō2NL Project area have been less frequent than SH1 (6 since 2016/17, around 1 per year), with the average duration closer to 4 hours.

When an event occurs that closes SH1 (and where there is no alternative route) the trip from Wellington to Taitoko/Levin needs to be undertaken via the Wairarapa, which increases trip time by at least two hours; much more during peak hours and high traffic conditions.

Travel times and delays

Afternoon peak ("PM peak") travel times for journeys between Ōtaki and SH1 North of Levin currently (2018 data) take on average 26 minutes, journeys between Ōtaki and SH57 North of Levin take on average 23 minutes while journeys from Ōtaki to central Taitoko/Levin (Queen Street/Oxford Street) take on average 17 minutes. During busy periods, such as long weekends these travel times are increased (including in respect of side road delays).

[20] "S" = Serious Injury, "F" = Fatality

PART C: DESCRIPTION OF THE PROJECT

9. Overview

The following project description provides the basis for the assessment of actual and potential effects on the environment of that part of the Ō2NL Project that is subject to this NoR. It summarises the key physical elements of the Project, with a particular focus on that part of the Ō2NL Project that is the subject of the NoR, including:

- the design context and standards;
- the highway and roading elements and functions;
- local road connections and intersections;
- walking and cycling facilities; and
- the anticipated physical works necessary to construct the Ō2NL Project.

This description is indicative to the extent that it provides details that are sufficient to assess the actual and potential effects on the environment and to identify appropriate measures to avoid, remedy, mitigate, offset or compensate for adverse effects on the environment.

The detailed design of the Ō2NL Project will be completed once all necessary designations have been confirmed and all necessary resource consents have been granted. The detailed design will be undertaken within the scope of the proposed designation and within the parameters established by conditions imposed on the designation and future resource consents that embed measures to avoid, remedy, mitigate, offset or compensate for adverse effects on the environment.

This design will be set out in outline plans and other documentation (such as management plans) that will be prepared prior to construction commencing.

The development of the design has been informed and shaped by ongoing engagement and collaboration with the Project Iwi Partners. This collaboration has provided an understanding of tangata whenua relationships with the land, water, sites, wāhi tapu, and other taonga and associated cultural values. These relationships and values are embedded in overarching design values and principles that apply to the design of the Project. The design values and principles are reflected in a Cultural and Environmental Design Framework ("CEDF") for the Project.

10. The Queen Street East to Tararua Road Section of the Ō2NL Project

The following describes the features of the Ō2NL Project that are relevant to the section of the Project that traverses the Tara-Ika Growth Area:

- approximately 2km (of the total Ō2NL Project length of 24km) of four-lane (two lanes in each direction), median divided highway located east of SH57 and between Queen Street East in the north and Tararua Road in the south;
- at the northern extent (and beyond) of the proposed designation a walking and cycling overpass at Queen Street East, in addition to a Queen Street East local road overpass located further to the north (and outside of the proposed designation);
- at the southern extent (and partially beyond the proposed designation) a grade-separated diamond interchange at Tararua Road providing access to the new highway;

- a separated 3-metre wide SUP for walking and cycling located to the east of, and generally adjacent to, the new highway;
- a maintenance bay or bays (being generally spaced regularly over the length of the Project as a whole);
- road lighting at Tararua Road;
- wire rope median and edge safety barriers, with alternative barrier types in some locations to provide noise attenuation;
- stormwater treatment wetlands, stormwater swales, drains and sediment traps;
- culverts to provide drainage across the new highway (overland flow paths);
- the removal, relocation and/or protection of existing network utilities; and
- sites for the disposal of spoil.

11. Design Context and Standards

The Ō2NL Project will be designed to deliver a new state highway. The Project will implement the NZ Government Road Safety Strategy and Safe System Approach[21]. The new route will become SH1 replacing the existing parallel elements of the SH1 and SH57 route.

11.1 Geometric Design

The indicative geometric layout for the section of the Ō2NL Project that is subject to this NoR is shown on the drawings included in **Appendix I**. The layout has been developed using Waka Kotahi design standards and guidelines, along with the Austroads suite of road design guidelines.[22] Amongst other matters, the design standards and guidelines set the appropriate (and often minimum) values of the parameters for the vertical and horizonal alignment that should be achieved. Notwithstanding, departures from standards in some instances are necessary, unavoidable and appropriate, provided levels of safety and functionality are retained.

11.2 Typical Cross Sections and Lane Widths

The road carriageway layout generally includes a four-lane (two lanes in each direction), median divided highway comprising:

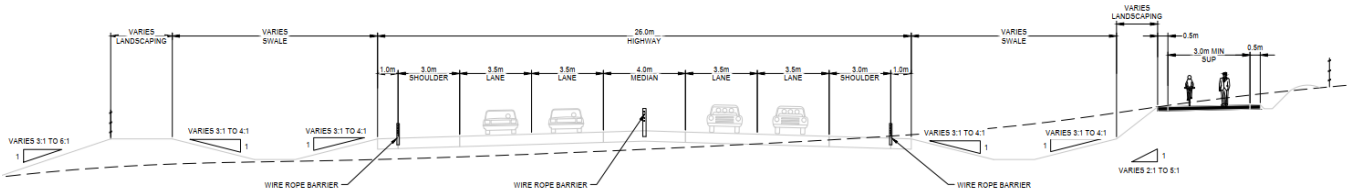
- 3.5m wide traffic lanes (generally, noting that lane widths may be greater on curves and where traffic merges);
- 3.0m minimum outside shoulders to face of edge barriers (2.5m minimum sealed); and
- a central median with a minimum width of 4.0m between edge lines (providing for 1.7m median shoulders for a rigid barrier, or 2.0m median shoulders if the preferred wire rope median is adopted).

The carriageway layout is shown on the typical cross section in Figure 9 below:

[21] A whole of system approach to road safety that recognises people make mistakes and a systematic response is required that includes safe roads and roadsides, safe speeds, safe road user behaviour and safer vehicles. https://www.nzta.govt.nz/assets/resources/safe-system/docs/safe-system.pdf

[22] For instance, the Austroads Guide to Road Design Part 3 - Geometric Design, TM-2501 and the State Highway Geometric Design Manual (Draft).

Figure 9 – Typical Cross Section



11.3 Design Speed and Design Vehicle

Given the potential future classification of the completed Ō2NL Project as an expressway and its general direct route through flat topography, a design speed of 110km/h has been adopted for the main alignment and 80km/h for interchange ramps.

The local road connections will be designed using a case-by-case approach (in consultation with HDC) targeted at producing a safe and appropriate local road network.

The 'design vehicle' for the main alignment is an 18-metre-long quad rear axle semi-trailer[23], as this provides a worst case in terms of tracking paths. Over dimensional vehicles of up to 10.0 m wide and 6.0 m high per carriageway are also provided for.

11.4 Intersections and Interchanges

The design of the Ō2NL Project will comply with Austroads Guide to Road Design Part 4C – Interchanges. For this NoR this includes the ramps that form part of the grade-separated interchange at Tararua Road (east of Taitoko/Levin). Overall, all priority controlled intersections will be designed to meet the requirements for stopping sight distance ("SSD"), safe intersection sight distance ("SISD"), approach sight distance ("ASD") and, where possible, minimum gap sight distance ("MGSD").

11.5 Pavements and Surfacing

Pavement design will be based on the requirements of Austroads, Pavement Design – A Guide to Structural Design of Road Pavement 2004 (and New Zealand supplement dated 2007). The final surfacing of the highway will be epoxy modified open graded porous asphalt ("OGPA") or similar in terms of road operational noise performance properties.

11.6 Lighting, Signs and Road Markings

Road lighting will meet the Waka Kotahi M30 Specification for Road Lighting and AS/NZS 1158. Light spill mitigation will be consistent with the M30 Specification.

Signs and road markings will be in accordance with Manual of Traffic Signs and Markings ("MOTSAM") and the Traffic Control Device Manual ("TCDM") requirements.

11.7 Stormwater Management

The geometric design of the alignment will ensure that stormwater drains off the road carriageway to the roadside drainage swales.

The project stormwater run-off collection and conveyance system will be designed to manage up to a 1:100 AEP event, including climate change, with the initial surface and collection systems designed to

[23] https://www.nzta.govt.nz/assets/resources/road-traffic-standards/docs/rts-18.pdf

accommodate a 10-minute duration storm event. Stormwater will be conveyed by open channels wherever practicable.

All wetlands, wetland swales and treatment swales will be designed to achieve the standard in the Waka Kotahi 'Stormwater Treatment Standard for State Highway Infrastructure (2010)', wherever practicable.

Drainage across the highway (overland flows) will be designed to retain normal conditions by allowing up to a significant storm event runoff (for a 1 in 100 AEP event in 2130 allowing for climate change[24]) and sediment to pass from one side of the highway to the other, wherever practicable.

11.8 Cultural and Environmental Design Framework

The CEDF, developed in collaboration with the Ō2NL Project Iwi Partners, will set out the overarching design principles and values to guide the detailed design of elements such as structures, landforms and elements that relate to the 'look and feel' of the Project (such as landscaping and streetscape features). The CEDF also includes overarching design principles that will guide the design of matters relevant to regional consenting, such as discharges to air, water and ground associated with earthworks and all works in and around water.

12. Existing State Highways

The Ō2NL Project will become the new SH1 and will replace the existing SH1 and that part of the existing SH57 along Arapaepae Road.

Once the Ō2NL Project has been constructed and opened, the existing SH1 and SH57 will function as local roads providing access for communities to various amenities and uses in the district as well as to the new highway, and will also be an alternative route for resilience. Waka Kotahi is likely to request that the Minister of Transport revokes these sections of parallel state highway in accordance with section 103 of the LTMA. This decision is subject to entirely separate processes that include ongoing discussions with Horowhenua District Council.

Modifications to these roads are likely to be needed and these will be developed in consultation with the relevant road controlling authorities as well as with our iwi partners, stakeholders and local communities.

13. Project Construction

The following provides a broad overview of the construction methodology and indicative construction programme for the entire Ō2NL Project. The construction of the part of the Project that traverses the Tara-Ika Growth Area will be undertaken as part of the Ō2NL Project as a whole and is not intended to be undertaken separately.

This information is provided with sufficient detail to assess the potential effects of construction activities on the environment and to identify any measures to avoid, remedy, mitigate, offset or compensate for those adverse effects.

13.1 Pre-Construction Considerations

13.1.1 Management plan framework and Construction Environmental Management Plan

Construction activities, and the actual and potential effects of these activities, will be managed through the implementation of a suite of management plans including a construction environmental management plan that will include health and safety management and quality assurance plans and processes. The construction

[24] Rainfall adjustment factors for future climate are based on the HIRDS v4 report (derived from IPCC 5th assessment) for a medium-high Representative Concentration Pathway (RCP) 6.0 emissions scenario.

environmental management plan, in particular, is integral to appropriately addressing effects of the construction of the Ō2NL Project on the environment.

13.1.2 Construction methodology parameters

The construction methodology for the Ō2NL Project is influenced by many factors including:

- the location and extent of construction compounds, laydown areas, site accesses and haul routes;
- the location of construction activities relative to sensitive environments or land uses;
- approaches to works in, and in the vicinity of, waterways;
- seasonal weather, including storm and flood risks associated with works in waterways and the flood plain;
- conditions imposed on the designations and resource consents (including the associated management plans);
- Waka Kotahi construction guidelines and standards; and
- Availability of resources, timing and target completion date.

Where appropriate, Waka Kotahi seeks a degree of flexibility in construction methods to accommodate these factors and to provide further opportunities to reduce the impacts of, and/or duration of, and adverse effects of construction.

13.1.3 Detailed design and construction procurement

The Waka Kotahi Highway and Network Operations Environmental and Social Responsibility Manual (August 2012) sets a framework for integrating environmental and social commitments into all phases of projects, including the development of detailed design and procurement of construction contractors.

As part of the procurement of contractors for the next phase of the Project, any ‘Request for Proposal ’ documentation for the Ō2NL Project will capture conditions imposed on the designations and resource consents to ensure that the requirements of these conditions are reflected in the detailed design and construction management documentation.

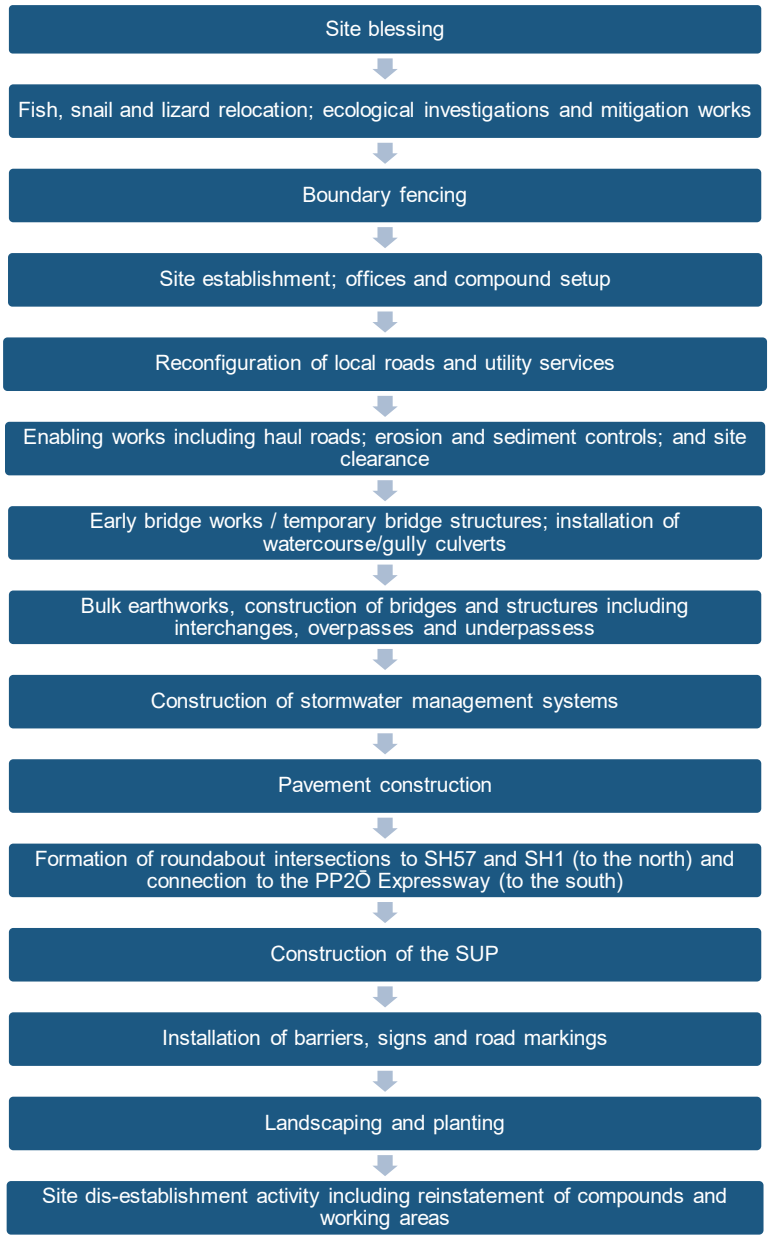
13.2 Indicative Construction Programme

The construction of the Ō2NL Project is anticipated to commence in 2025 and be completed within approximately five years. The target date for opening the new road is by the end of 2029.

In order to achieve the opening date, many elements of the Ō2NL Project are likely to need to be undertaken concurrently during the construction period, including the completion of works in sections. That is, the construction sequence will generally be adhered to for each section. The construction works are likely to be undertaken in the general sequence set out in Figure 10.

While there are some dependencies between construction elements, the specific staging of the work is subject to land acquisition; the availability of construction contractors and other resources (such as materials and construction equipment).

Figure 10 – Possible Construction Sequence



13.3 Early Construction Activities

Site establishment and project enabling activities will be required prior to the commencement of bulk earthworks and may include:

- fencing of the site boundary, areas of vegetation that are to be retained and watercourses (as required);
- locating existing site services and undertaking the necessary protection or diversion works;
- formation of construction accesses for the movement of construction traffic, materials and plant to and within the site;
- establishment of site compounds and laydown areas;
- site clearance including vegetation, buildings and other features requiring removal (including any relocation of wildlife);

- ecological, cultural, archaeological and heritage surveys, exploration and assessments including relocation and stabilisation activities;
- establishment of erosion and sediment control measures and monitoring equipment;
- installation of water abstraction and storage devices;
- field based compaction/constructability trials and aggregate production trials; and
- relocation / construction of accesses to properties, services and utilities connections, including construction of replacement water boreholes (as required).

13.3.1 Site compounds and laydown areas

Construction site compounds will be required at a number of locations that are convenient for each main work area. Site compounds will typically include the following temporary facilities:

- site offices, lunch rooms and bathroom/toilet facilities (including portable toilets) (including associated temporary power, telecommunication/fibre connections and water supplies);
- refuse and recycling facilities;
- laydown areas and secure storage containers;
- vehicle parking, refueling, wheel cleaning and other cleaning facilities;
- facilities for fabrication and pre-casting products such as headwalls;
- geotechnical laboratory facilities for materials storing, testing and design validation;
- plant and equipment storage, including plant and vehicle repair and refueling facilities; and
- site testing facilities and possible nursery areas for landscaping.

Compounds will be designed to include site-specific stormwater management, treatment and disposal.

13.3.2 Site access and haul roads

In addition to accommodating the site compounds and laydown areas, the area subject to the notices of requirement includes sufficient area to accommodate temporary site accesses and haul roads that are to be provided along the full length of the Ō2NL Project. Temporary works and the specific methods for access to, and within, the site will be confirmed following the completion of detailed design and in conjunction with the construction contractor.

13.3.3 Pre-construction site investigations

It is possible that further site investigation work will be required to inform and support the detailed design. This work may include, but is not limited to:

- geotechnical Investigations, comprising of intrusive investigations and surface-based geophysics;
- additional topographical survey;
- ecological, archaeological and heritage surveys, assessments including relocation activities;
- material re-use testing and site laydown trials of materials; or
- preloading trials.

13.4 Construction Activities

13.4.1 Earthworks

Earthworks will typically involve the following activities:

- topsoil stripping and associated establishment of stockpiles;
- installation of permanent and temporary drainage systems;
- the establishment of spoil disposal sites;
- cut and fill activities including embankment construction and materials removed from cuttings; and
- landscaping and site reinstatement.

In the part of the Ō2NL Project that is subject to this NoR it is estimated that approximately 80,000m^3 of earthworks cuttings will be required, and around 60,000m^3 of fill (excluding any topsoil stripping). This cut material will be placed as structural fill for embankments along the proposed Ō2NL route.

Cut slopes

Where cut slopes are required, material will be excavated mechanically from cut faces and loaded directly onto dump trucks, or other equipment, for transport for immediate use as structural fill; to stockpiles or to waste sites. Motor scrapers may also be used in cuttings where ground conditions require unsuitable overburden to be removed or for cut to fill operations. Groundwater flows or seepage from cut faces will be monitored and appropriate control measures installed as required.

Fill embankments

Earth fill must provide the required level and platform for the construction of the road and associated road features such as longitudinal drainage and the SUP. Filling will be carried out as follows:

- remove topsoil and any other unsuitable material;
- diversion of watercourses, where required, and the installation of temporary or permanent culverts, and
- the placement of fill to the level required for access, road pavement or embankment construction.

Excess material and topsoil

Excess cut material (cut material that is not used for structural fill) will likely be reused within the site in the first instance (including being used to flatten batter slopes or in landscape areas adjacent to structural embankments), then disposed of in spoil sites. The establishment of spoil or landscaping sites along the route will reduce haulage distances and avoid the requirement to haul material off site for disposal.

Across the entire Project area, approximately 800,000 to 1,200,000m^3 of topsoil will be stripped and stockpiled for re-use within the site or removed to spoil site where opportunities for reuse are not available. Potential spoil sites may be used for the stockpiling or permanent placement of topsoil. In general topsoil will be reused on site for landscaping.

Spoil sites will be contoured, landscaped, and vegetated as construction work is completed.

Suitable erosion and sediment control measures will be installed at the spoil sites and wet materials will be placed behind bunds and/or silt fences to minimise the discharge of sediment. Where overland flow paths are located within the footprint of spoil sites, subsoil drains will be installed below fill material as practicable and subject to final design requirements.

Imported material

Imported hard fill material required for establishment of site compounds and haul roads will likely be sourced from quarries located as close to the site as is practical.

13.4.2 Water

Water will be required for a number of construction activities, including:

- dust suppression;
- moisture conditioning for engineered fill construction or ground improvement (including lime or cement stabilisation);
- pavement aggregate moisture content control during compaction;
- concrete placement and curing;
- pile driving and pile stabilisation;
- irrigation for landscaping to establish a vegetation cover; and
- vehicle tyre cleaning to minimise the tracking of any sediment on to roads.

Construction water will be sourced from existing watercourses, existing water bores and farm ponds or purpose-built water reservoirs established on site. It may be necessary to secure consents to abstract additional water to meet Project requirements. Otherwise, if necessary, water may also be brought to the site by truck.

13.4.3 Pavement and surfacing

As sections of earthworks and drainage installation are completed, areas of pavement will be constructed. It is likely that pavement will be constructed to sub-base level immediately following the completion of earthworks to protect the subgrade and minimise dust. Basecourse layers and seal will then be placed to complete the road structure.

A top layer of OGPA will be installed one year after road opening. This allows sub layers to fully compact and stabilize to ensure performance of the OGPA surface.

Quarry and bitumen batching plant sources for pavement and surfacing aggregate and bitumen materials are not yet known, but regional suppliers such as quarries in Ōtaki, Bulls, Palmerston North or Taihape are likely to be used for the construction of the Ō2NL Project.

13.4.4 Night works

Construction activities will generally occur during daytime hours, but night work is likely to be necessary for the following activities in order to minimise disruption and/or to complete particular elements:

- completion of tie-in of existing local roads;
- works within the NIMT rail corridor;
- delivery of overweight or over dimension equipment or materials; and
- bridge and structure construction and bulk earthworks, particularly in respect of concrete pours.

13.4.5 Winter works

It is likely that construction works, including earthworks, will be undertaken through the winter period in situations where:

- the earthworks are explicitly described and managed as a winter works by a site-specific erosion and sediment control plan; or
- the works are necessary maintenance works or are for the purposes of stabilisation.

13.5 Post-Construction Activities

Following completion of construction, the following de-establishments activities are anticipated:

- removal of buildings, structures and all stockpiles and equipment;
- reinstatement of hard-standing, car parking and circulation areas, access tracks and worked areas that don't form part of the ongoing operation and maintenance of the new state highway and areas replanted and returned to former use;
- removal of perimeter fencing and erosion and sediment controls; and
- establishment of final fencing and gateways along its maintenance and operational boundaries.

Ongoing post construction activities are likely to include ongoing maintenance and management of landscaping areas and of planting associated with ecological works. These activities will seek to ensure that plants establish and perform to expectations.

PART D: STATUTORY CONTEXT

14. Overview

The following sets out the key statutory matters that are relevant to the Ō2NL Project under the RMA. An assessment of the Project against this statutory framework is included in Part H of this document.

Other statutes and their requirements, which are particularly relevant to the Ō2NL Project, are also described below, including where further approvals may be necessary. Some of these may not be matters relevant to the consideration of the NoR but provide context to the Project.

15. Resource Management Act 1991

15.1 Purpose and Principles

Consideration of the NoR is subject to the purpose and principles in Part 2 of the RMA. Sections 5 to 8 make up Part 2 of the RMA as set out in Table 4.

Table 4 – Part 2 of the RMA

Section	Content
Section 5 (Purpose)	States the purpose of the RMA, being to promote the sustainable management of natural and physical resources, and sets out what sustainable management means as follows: *"(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.* *(2) In this Act, sustainable management means 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 well-being 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."*
Section 6 (Matters of national importance)	Describes the matters of national importance that all persons exercising functions and powers under the RMA must recognise and provide for when managing the use, development, and protection of natural and physical resources as follows: *"(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:* *(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:* *(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:* *(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:* *(e) 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:* *(g) the protection of protected customary rights:* *(h) the management of significant risks from natural hazards."*

Section	Content
Section 7 (Other matters)	Sets out other matters to which all persons exercising functions and powers under the RMA must have particular regard to in relation to managing the use, development, and protection of natural and physical resources. Those that are relevant to the Ō2NL Project are: *"(a) kaitiakitanga:* *(aa) the ethic of stewardship:* *(b) the efficient use and development of natural and physical resources:* *(ba) the efficiency of the end use of energy:* *(c) the maintenance and enhancement of amenity values:* *(d) intrinsic values of ecosystems:* *(e) [repealed]* *(f) maintenance and enhancement of the quality of the environment:* *(g) any finite characteristics of natural and physical resources:* *(h) the protection of the habitat of trout and salmon:* *(i) the effects of climate change: …".*
Section 8 (Treaty of Waitangi)	Requires all persons exercising functions and powers under the Act in relation to managing the use, development, and protection of natural and physical resources, to take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

15.2 Designations

15.2.1 Notice of requirement for a designation

A notice of requirement is given for part of the Ō2NL Project within Horowhenua District where the Ō2NL corridor traverses the area of land east of Taitoko/Levin that is subject to proposed PC4 to the District Plan. The extent of the proposed designation is shown on the drawings included as **Appendix I**.

The process for a notice of requirement is set out in Part 8 (sections 166 – 186) of the RMA. Section 168(2) provides as follows:

> *"(2) A requiring authority for the purposes approved under section 167 may at any time give notice in the prescribed form to a territorial authority of its requirement for a designation-*
>
> *(a) For a project or work; or*
>
> *(b) In respect of any land, water, subsoil, or airspace where a restriction is reasonably necessary for the safe or efficient functioning or operation of such a project or work. …"*

The prescribed form for a notice of requirement is Form 18 included in Schedule 1 to the Resource Management (Forms, Fees, and Procedure) Regulations 2003. This NoR has been prepared in accordance with these regulations and accompanies this document.

Section 169 directs the procedures in relation to further information, notification, submissions and hearings for a notice of requirement. Section 169(1) establishes that a territorial authority's decision to notify a notice of requirement is under section 149ZCB(1) to (4), 149ZCC(1) to (4), 149ZCE, and 149ZCF where reference to 'the EPA' is read as reference to a 'territorial authority' and reference to an 'applicant' is reference to a 'requiring authority'.

Section 171 sets out the matters that must be considered by a territorial authority in making a recommendation to the requiring authority on a notice of requirement as follows:

> *"(1A) When considering a requirement and any submissions received, a territorial authority must not have regard to trade competition or the effects of trade competition.*
>
> *(1) When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—*

(a) any relevant provisions of—

(i) a national policy statement:

(ii) a New Zealand coastal policy statement:

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

(iv) a plan or proposed plan; and

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

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

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

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

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

(1B) The effects to be considered under subsection (1) may include any positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from the activity enabled by the designation, as long as those effects result from measures proposed or agreed to by the requiring authority.

(2) The territorial authority may recommend to the requiring authority that it—

(a) confirm the requirement:

(b) modify the requirement:

(c) impose conditions:

(d) withdraw the requirement.

(3) The territorial authority must give reasons for its recommendation under subsection (2).”

A decision is to be made by the requiring authority under section 172 of the RMA within 30 working days. A requiring authority may accept or reject the recommendation in whole or in part. A requiring authority may also modify a requirement if, and only if, that modification is recommended by the territorial authority or is not inconsistent with the requirement as notified.

15.2.2 Outline plan

Section 176A of the RMA provides that an outline plan must be submitted to a territorial authority before commencing construction of a project or work under a designation unless certain circumstances apply. These circumstances are set out in section 176A(2) of the Act. The circumstances in clauses section 176A(2)(a) and (b) do not apply to this NoR and, in respect of section 176A(2)(c), Waka Kotahi does not seek that the requirement for an outline plan be waived.

It is anticipated that outline plans, detailing all relevant aspects of the Ō2NL Project (required by section 176A(3) of the RMA) will be submitted following the completion of the detailed design of the Ō2NL Project and prior to the commencement of construction works.

Section 176A(3) prescribed the content of an outline plan as follows:

“(3) Any outline plan must show—

(a) the height, shape, and bulk of the public work, project, or work; and

(b) the location on the site of the public work, project, or work; and

(c) the likely finished contour of the site; and

(d) the vehicular access, circulation, and the provision for parking; and

(e) the landscaping proposed; and

(f) any other matters to avoid, remedy, or mitigate any adverse effects on the environment."

Within 20 working days of receiving an outline plan, a territorial authority may request changes to the outline plan. The requiring authority may accept or reject the requested changes. If any of the requested changes are rejected, the territorial authority may appeal to the Environment Court.

15.2.3 Review of the designation

The designation includes land required to be used for temporary and permanent works. Where the designation is no longer required for the Project, including its operation and maintenance, Waka Kotahi will give notice the designation shall be removed from identified areas under section 182 of the RMA. This is likely to occur following the completion of construction of the Ō2NL Project.

15.2.4 Designation lapse period

Section 184 provides for the lapsing of designations that have not been given effect to. Waka Kotahi confirms that the standard lapse period of five years from the date on which the designation is included in the Horowhenua District Plan (section 175 and section 184(1) of the RMA) will apply. The designation will also provide that, for the avoidance of doubt, 'giving effect to the designation' in the context of section 184 of the RMA includes, but is not limited to, the submission of an outline plan for works in respect of this designation.

15.3 Other RMA Approvals

The Ō2NL Project also requires:

- further designations in the Horowhenua and Kāpiti Coast District Plans; and
- resource consents for a number of activities (including land use consents, water permits and discharge permits) required by the relevant provisions of the operative and proposed Regional Plans for the Wellington Region; and the Horizons One Plan.
- outline plans under section 176A of the RMA (Waka Kotahi is not seeking to waive the requirement to submit outline plans);[25]
- Written consent under section 177 of the RMA for works that may prevent or hinder an existing designated project or public work from KiwiRail, as the requiring authority responsible for a designation, (for crossing the existing rail corridor designation);

The further designations and resource consents are not sought at this time. They will be sought when Project details are further refined so that the extent of the designation in other locations and consent requirements can be finalised.

16. Other Statutory Matters

In addition to the matters requiring consideration under the RMA, there are some further statutory matters that the Project is either informed by or is legally required to comply with. These matters may also be relevant in terms of section 171(1)(d) of the RMA. These matters are summarised in Table 5 below and, where relevant, assessed in Part H.

[25] It is noted that section 176A(4) provides for a territorial authority to request changes to a outline plan (as opposed to giving an 'approval'.

Table 5 – Other Relevant Statutory Matters

Statute	Relevance
Land Transport Management Act 2003	The LTMA provides the statutory framework for the management of New Zealand's land transport network. It is also one of the main statutes under which the Waka Kotahi operates (in conjunction with the GRPA). The purpose of the LTMA as set out at section 3 is: *"(1) The purpose of this Act is to contribute to an effective, efficient, and safe land transport system in the public interest."* The objective of Waka Kotahi is set out in section 94 as: *"The objective of the Agency is to undertake its functions in a way that contributes to an effective, efficient, and safe land transport system in the public interest."* The functions of Waka Kotahi are set out in section 95 and the principles under which Waka Kotahi must operate are in section 96. These principles include a requirement to exhibit a sense of social and environmental responsibility. The LTMA also recognises and respects the Crown's responsibility to take appropriate account of the principles of the Treaty of Waitangi and provides principles and requirements that are intended to facilitate participation by Māori in land transport decision-making processes.
Government Roading Powers Act 1989	The GRPA provides the statutory framework for the management of New Zealand's land transport system, in conjunction with the LTMA. Part 4 of the GRPA outlines the responsibilities of Waka Kotahi in relation to roading, including the powers and duties of Waka Kotahi in relation to state highways (section 61) including: *"(1) Subject to section 62[26], the Agency shall have the sole powers of control for all purposes, including construction and maintenance, of all State highways under this Act, and any such powers shall be exercisable only pursuant to this Act."*
Public Works Act 1981	The PWA enables land to be acquired, either by agreement or by compulsion, for the construction of public works including roads. The Project requires land to be acquired (either part of, or entirely properties) under the PWA. Waka Kotahi is working with the affected property owners.
Heritage New Zealand Pouhere Taonga Act 2014	The HNZPT Act establishes Heritage New Zealand Pouhere Taonga. The purpose of the Act is in section 3 as follows: *" … to promote the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand."* Part 3, Subpart 2 of the HNZPT Act provides for the protection of archaeological sites. Section 42 provides that an archaeological site, recorded or not, may not be damaged or destroyed unless an Authority to modify the site is granted. While no known or recorded archaeological sites are located within the area subject to this NoR, there are archaeological sites in the vicinity (being historic roads or track) that may be disturbed by the Project. For this reason, Waka Kotahi will apply for an authority or authorities under section 44(a) of the HNZPT Act in due course.
Wildlife Act 1953	The Wildlife Act deals with the protection and control of wild animals and birds and the management of game. It provides varying levels of protection to different species. The Project will likely require an authorisation, given by the Director-General of Conservation under section 53 of the Wildlife Act, in relation to the disturbance of any protected wildlife.

[26] Section 62 of the GRPA provides for Waka Kotahi to delegate powers and duties to territorial authorities.

PART E: CONSIDERATION OF ALTERNATIVES

17. Overview

Part E outlines the process undertaken by Waka Kotahi to consider alternative sites, routes, and methods (collectively known as options) for the Ō2NL Project. This section provides information on the alternatives assessment process for the Ō2NL Project to provide context for this NoR and specific alternatives information on this NoR.

The identification, evaluation and refinement of options for the Ō2NL Project has been subject to a comprehensive process of information gathering and careful analysis undertaken by broad multi-disciplinary teams and informed by engagement with iwi, stakeholders and the community.

The option assessment work has included a comprehensive assessment of corridor, route alignment, interchange and local road connections options, as summarised below:

- long listing/short listing and analysis of potential state highway corridor options;
- selection of preferred corridor;
- long listing/short listing and analysis of potential route options within the preferred corridor;
- selection of preferred route; and
- refinement of route, local road connections and interchange connections.

A number of methods and tools have been used to help evaluate alternatives and guide decisions throughout this option assessment process, including:

- technical specialist evaluations;
- Multi Criteria Analysis (MCA) – a tool that can be used to compare and evaluate alternatives and options; and
- iwi, stakeholder, community and landowner engagement.

This section describes the options assessment processes to date. This assessment is an ongoing process, including anticipated further route refinement expected to occur through the subsequent outline plan process (subject to any conditions).

17.1 Statutory Context

Section 171(1)(b) of the RMA requires territorial authorities, when considering an NoR, to have particular regard to:

> *"(b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if –*
>
> *(i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or*
>
> *(ii) it is likely that the work will have a significant adverse effect on the environment; and …"*

An assessment of alternative locations or methods for undertaking an activity is also required for resource consents under schedule 4 of the RMA when an activity will result in any significant adverse effect on the environment. These consents will be applied for as part the wider Ō2NL Project and will be subject to a separate process in due course.

17.2 Use of Multi Criteria Analysis to Evaluate Options

The MCA process has been used by the Ō2NL Project Team throughout the option assessment and refinement process to compare different alternatives and options and help to inform decision making. MCA provides a best practice approach to ensure a robust assessment of alternatives and options. MCA can be used to assess multiple criteria, both quantitative and qualitative.

For the Ō2NL Project, all MCA processes have been led by the project team with specialist technical advice provided by independent subject matter experts on a range of relevant topics, including:

- landscape/visual;
- ecology (terrestrial and freshwater);
- heritage;
- archaeology;
- noise / vibration;
- productive land values;
- social / community / recreation
- property; and
- transport planning.

A number of Project MCA have also involved Iwi (Ngāti Raukawa ki te Tonga and Muaūpoko) who have provided input on cultural values and effects, and HDC who have provided input on matters relating to the local road network and other relevant district matters (such as future urban development).

The Ō2NL Project has utilised the decision conferencing method for MCA scoring and evaluating options. This is a group-based assessment approach, reflecting the range of inputs required from different specialists, iwi and HDC. Decision conferencing provides a structured format in a facilitated workshop setting. This exercise is undertaken on the basis of agreed assessment criteria and an agreed scoring approach. SMEs typically first independently establish provisional scores based on known evidence (usually completed prior to the workshop). At the workshop, each SME presents their own ideas and scores. These scores are then discussed, challenged and moderated to reach a consensus during the workshop.

17.2.1 Assessment criteria

Ō2NL Project MCA assessment criteria were selected based on their relevance to the Project. They included a range of investment/project objectives, cultural, environmental, property, land use and engineering based aspects. The identification and description of the criteria were discussed and agreed upfront by the Project team, subject matter experts and key stakeholders.

As an example, Table 6 shows the MCA assessment criteria used by the Project to evaluate the route alignment and interchange location / form options as well as the MCA assessors who were selected to undertake these assessments through the section of the Project that is subject to this NoR.

Table 6 – MCA Assessment Criteria Used to Evaluate the Route Alignment and Interchange Location/Form

Assessment Criteria	Summary of Assessment Criteria
Theme: Fit with Project Objectives	
Fit with Project Objectives	This assessment criterion involves a high-level assessment of the overall contribution each alignment and interchange option will make to the Project's objectives.

Assessment Criteria	Summary of Assessment Criteria
Theme: Environmental / Social impacts	
Iwi Cultural Values (Muaūpoko and Ngāti Raukawa ki te Tonga)	This assessment criterion considers the impacts on Muaūpoko and Ngāti Raukawa values that are associated with the options, including past and present associations, key areas of settlement (marae and papakianga), waahi tapu (if known) and other cultural values, areas of use (e.g. food gathering), current ownership, and important elements of the natural environment such as waterways and wetlands.
Landscape/Visual	This assessment criterion considers natural and landscape character impacts (including degree of modification and presence of structures) of the alignment, interchange and local road options. It includes considering potential landscape and urban design impacts of the alignment on nearby townships or notable lifestyle areas.
Terrestrial Ecology	This assessment criterion considers terrestrial ecological values such as indigenous vegetation areas that are nationally, regionally or locally significant in terms of habitat values and the presence of Threatened and At Risk flora and fauna species.
Freshwater / Wetland Ecology	This assessment criterion considers the potential effects on waterways (e.g. lakes, rivers and streams) and wetlands.
Heritage	This assessment criterion considers impacts on known heritage buildings.
Archaeology	This assessment criterion considers the impacts on known archaeological sites and features, and the risks of encountering archaeological features, or new areas of significance.
Noise / Vibration	This assessment criterion considers the noise and vibration impacts on dwellings and other community buildings (sensitive receptors) located within 300m of the alignment, interchange and local road options (which don't require removal).
Productive Land Values	This assessment criterion considers the impacts on productive values of Classes I to III soils.
Social / Community / Recreation	This assessment criterion considers the social / community and recreational impacts on local communities, including community severance / opportunities, and construction phase impacts.
District Development	This assessment criterion considers the impacts on District Plan's provisions and future growth plans.
Theme: Implementability Impacts	
Fit with Local Road System	This assessment criterion considers the contribution of the alignment and interchange options to the management of the local road network, including the opportunities to update or integrate effectively with the existing roading hierarchy in the Horowhenua district. This criterion differs from the transport benefits criteria, as it focuses on the local network as a system in its own right (i.e. receiving and dispatching traffic in the Horowhenua district).
Engineering Degree of Difficultly	This assessment criterion considers the physical components of the alignment, interchange and local road options, including: volume and balance of earthworks, structures, complexity of programming and temporary works, traffic and access management during construction, risks around "unknowns", any necessary additional provisions to address natural hazards, and general degree of difficulty in construction.
Property Degree of Difficulty	This assessment criterion considers the number of properties, extent of severance of existing properties, the general ability to align an option with property boundaries, potential for effects on farming / business operations, Māori land, and any known land tenure issues that may create difficulties.

The criteria that have been used throughout the alternatives assessment process are generally consistent with the table above. However, some updates and/or additional criteria were added in the later optioneering

stages (post identification of the preferred corridor) to ensure the criteria remained fit for purpose for that stage. For example, in earlier stages noise and visual impacts on property were captured under a 'property amenity' criteria, and in later stages this has been split out with an explicit noise and social impact assessment criteria developed.

17.2.2 Scoring

As part of all the Project MCAs, options were scored against each criteria to allow for differentiation between options. The majority of the Project's MCAs utilised a 5 or 6 point scoring system to inform the short list of emerging preferred alignments, interchanges, and local roads. The scoring system has a range to sufficiently discern the benefits, disbenefits and/or effects of the various options. The scoring system is described in Table 7.

Table 7 – Six Point Score System

Score	Description
1	The option presents few difficulties on the basis of the criterion being evaluated and may provide significant benefits in terms of the attribute.
2	The option presents only minor aspects of difficulty on the basis of the criterion being evaluated and may provide some benefits in terms of the criterion.
3	The option presents some aspects of reasonable difficulty in terms of the criterion being evaluated and problems cannot be completely avoided. There are few apparent benefits in terms of the criterion.
4	The option includes clear aspects of difficulty in terms of the criterion being evaluated, and very limited perceived benefits.
5	The option includes significant difficulties or problems in terms of the criterion being evaluated and no apparent benefits.
F	The option will result in completely unacceptable adverse effects that cannot be appropriately avoided, remedied or mitigated (including offsetting).

In some instances, an alternate traffic light signal scoring system was used to score options. This process assigned green if the MCA assessor had only minor impacts or concerns, orange if there were moderate impacts or issues and red for serious or significant negative impacts or issues. This approach was used to evaluate local road options.

MCA scoring for the Project also involved the weighting of different assessment criteria. Weights consider the importance of a particular criterion is compared to other criteria. Proposed weighting was discussed and agreed with all parties engaged in the MCA Workshops. To both ensure transparency and recognise the significance/materiality of different criterion, scoring was firstly undertaken with all criteria having equal weighting. The sensitivity of the results was examined by exploring their sensitivity to weighted changes to different criteria. All changes to weighting/data was done systematically to assess their effect on results. All scoring and weighting exercises were documented in individual MCA reports which recorded the MCA process undertaken.

18. Identification and Assessment of Alternatives

18.1 Long Listing – Identification and Evaluation of Offline Corridor Options

The long list identification and evaluation process followed four stages, as follows:

18.1.1 Stage 1 – Constraints and opportunities identification

Before any long list corridors were identified, information about environmental and social constraints and opportunities within the Project Area was gathered. The following aspects were investigated and mapped using GIS software[27]:

- relief and hydrology;
- landscape and urban design quality;
- landscape absorption capability;
- heritage values;
- tangata whenua values;
- lifelines (civil defence);
- population distribution;
- geological constraints;
- ecological values;
- land use capability;
- natural hazards;
- land ownership;
- district and regional plan maps (zoning and specifically identified areas); and
- contaminated land/hazards.

These constraints helped inform the identification of possible long list of corridor options and later on assisted in the review of those corridor options.

Consultation/ engagement exercises also helped to confirm and identify additional constraints and opportunities in the Project area and helped informed the future identification of potential corridor options[28][29].

18.1.2 Stage 2 - Development and review of preliminary long list of corridors

All preliminary corridors were indicated generally as a 300 metre wide band. This width allowed flexibility to locate an alignment within the corridor leaving room to avoid features and address adverse effects that may be identified during any ensuing investigations.

A MCA workshop (Workshop 1) was held (in Aug 2017) and attended by SMEs, representatives of Muaūpoko, Ngāti Raukawa ki te Tonga, the local community, Horowhenua and Kāpiti Coast district councils, Greater Wellington and Horizons regional councils, and DOC[33]. The purpose of this workshop was to review and revise the preliminary corridors and the route options evaluation criteria. During the workshop there was a request that additional options be added into the analysis to avoid a number of sensitive values impacted

[27] Technical reports | Waka Kotahi NZ Transport Agency (nzta.govt.nz). See Constraints maps – August 2017
[28] https://www.nzta.govt.nz/assets/projects/otaki-to-north-of-levin/docs/technical-reports/mca-reports/O2NL-Community-MCA-Report-September-2017-Appendix-A-E.pdf (see Appendix B: Workshop A; and Appendix C: Workshop B)
[29] https://www.nzta.govt.nz/assets/projects/otaki-to-north-of-levin/docs/o2nl-engagement-summary-report-201708.pdf

by existing preliminary corridor options and utilise existing utility corridors (transmission). This was agreed and additional corridor options were identified and added into the process.

18.1.3 Stage 3 - Corridor long list refinement and assessment

Following the refinement of the long list of corridor options, a MCA workshop (Workshop 2) was held (Aug 2017) to review these[33] and attended by same attendees to Workshop 1. The long list of corridor options is shown in Figure 11 below.

Figure 11 – Long List of Options

At Workshop 2, the MCA assessment criteria were discussed and confirmed. The long list of corridor options were then assessed and scored against these criteria, including the identification of any potential fatal flaws (as per the MCA processes described in the preceding section, above).

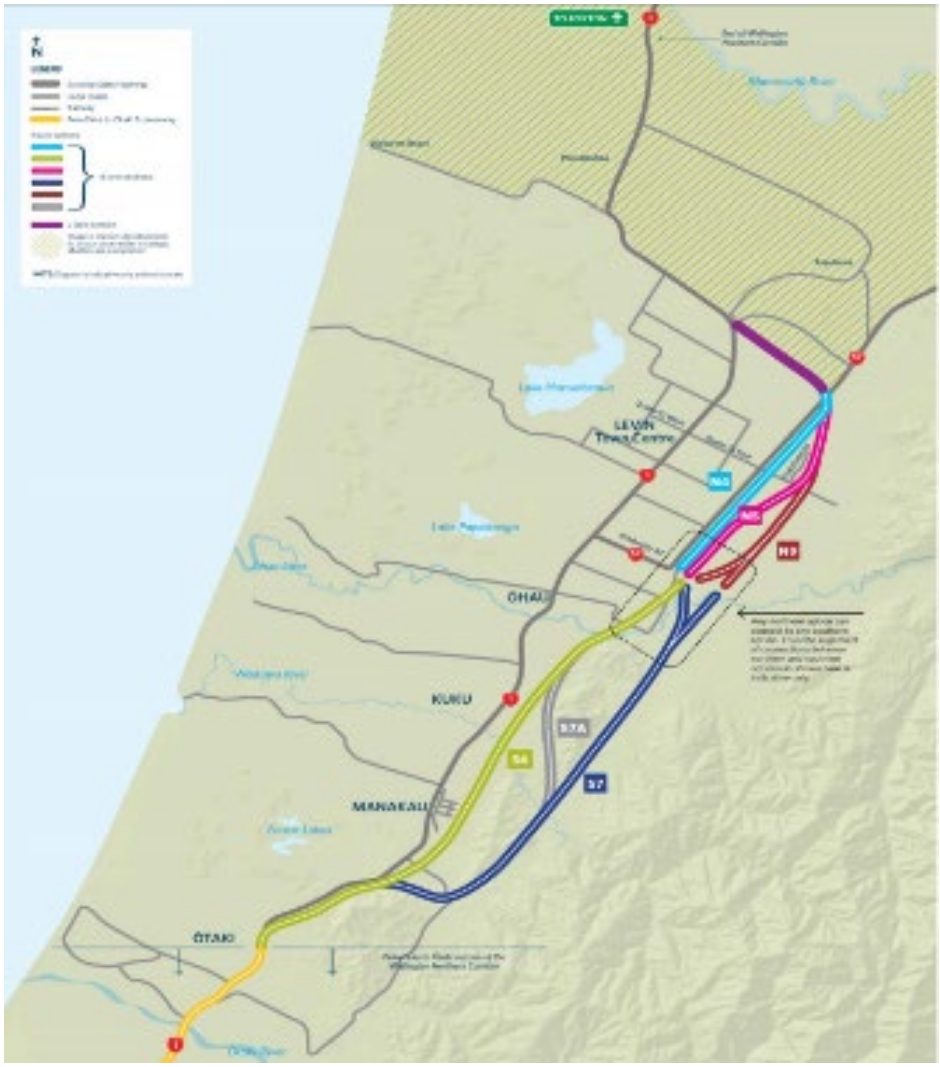
18.1.4 Stage 4 - Identification of a short list

The MCA[30] report from Workshops 1 and 2 removed options S4, S5, N2, N3 and N7 as they performed significantly worse than other options. Following MCA Workshop 2, additional information on tangata whenua impacts were collected and additional traffic modelling and constructability assessments were undertaken of the shortlist[31]. Based on the MCA results, the collection of additional information and the subsequent analysis the long list of options was able to be refined and a number of corridor options discarded, as follows:

[30] https://www.nzta.govt.nz/assets/projects/otaki-to-north-of-levin/docs/technical-reports/ibc/Otaki-to-North-of-Levin-IBC-App-F.pdf
[31] Project-update-on-shortlist-for-consultation-February-2018.pdf (nzta.govt.nz)

- **S1N1** – Due to tangata whenua areas of significance and not meeting the Project objectives in terms of safety and travel time for key routes
- **S8N6** - Due to tangata whenua areas of significance and not meeting the Project objectives in terms of safety and travel time for key routes
- **N8** – Due to not meeting the Project objectives in terms of safety and travel time for key routes
- All other options west of current SH1 (S2, S3, S4, S5, N2, N3 and N7) were ruled out because of the significant environmental and cultural implications. They also would have increased travel times for commuters traveling to Taitoko/Levin or Palmerston North.

Figure 12 – IBC Short List of Options



A landscape and urban design assessment was also undertaken in respect of the implications of route options on emerging plans for significant urban development (growth area) located to the east of Taitoko/Levin[32] (this area is now subject to proposed PC4 Tara-Ika). The outcomes from this study informed the corridor option short listing and selection process, and while the study favoured more eastern options, N4 was considered to be a viable option.

Overall, the assessments indicated that no corridor option was free of issues, problems or environmental impacts[33]. However, when considering the Project objectives, the eastern options performed better with

[32] o2nl-implictions-of-route-options-on-levin-urban-growth-area-201802.pdf (nzta.govt.nz)

[33] As is normally the case when considering strategic infrastructure options, due to geometric requirements it is highly unlikely normally to be able to miss all constraints, especially in the corridor selection phase.

respect to safety and reducing travel times for the key regional journeys. The eastern options also provided improved access into the Taitoko/Levin Town Centre and better supported the economic growth objectives of the Horowhenua District Council. The western corridor options had significant cultural and ecological issues and would represent longer journey times for those heading to Palmerston North or Levin and so would not be an attractive transport option, that is, these options would not meet the Project objectives.

These eastern options comprised of a corridor short list made up from three southern section options (S6, S7, S7A) and three northern section options (N4, N5, N9). All southern sections can be joined with all northern sections to form nine potential corridors, as shown in Figure 12. The shortlisted options all begin at Taylors Road north of Ōtaki, linking in with the Kāpiti Expressway, and end just north of Taitoko/Levin.

The MCA assessment and further analysis of the long list of corridor options provided a formalised, transparent and structured means of comparing the disparate options.

An independent peer review of the MCA process to assess corridor options by Mitchell Daysh consultants confirmed that the process was valid and valuable[34].

18.2 Short List Assessment

The short list of corridor options was shared with key stakeholders and the Horowhenua community for their feedback in early 2018[35]. The engagement process focused on asking people to identify key features about each option that they liked or did not like. Potentially affected landowners were also formally advised.

This consultation provided the Project team with more detailed information about features of importance, as well as identifying additional elements that need to be considered in the further analysis of corridor options. This consultation also led to additional ecological, heritage, social, and noise assessments being undertaken to address specific concerns raised by the community. These assessments were undertaken by technical specialists as well as others who had been involved previously in the multi-criteria analysis (MCA) process.

The short list corridor options were also subject to the following analysis by the Project team:

- cost estimates developed to an Indicative Business Case Estimate ("IBE") level;
- an economic evaluation in accordance with modified full procedures of the Economic Evaluation Manual (EEM, 2016).

18.3 Selection of Preferred Corridor

Investigations undertaken to date had primarily focused on understanding the benefits and impacts of the corridor options. To further help decision making regarding a preferred corridor, an assessment focusing on differentiators between the options was undertaken. These were based on the MCAs (all of the results and individual assessments), the further investigations that had been undertaken in this area and the feedback from the short list consultation.

This process allowed a preferred corridor to be selected and announced in December 2018. The preferred corridor was a combination of the shortlisted options known as S6 and N4. The preferred corridor is shown in Figure 13 below and the reasons why these were selected is summarised below:

- **Option S6** was the best performing option through the MCA process, because it was the lowest cost option, best met the Project objectives, had the least impact on eco-systems (able to avoid all constraints) and had a good fit with landscape. From a social point all options had issues, and S6 as the worst performing option would require careful management and consideration of mitigation options in the following stages.
- **Option N4** was recommended as the preferred northern option, as it performed the best in terms of the achievement of Project objectives and had least effect on existing properties and social effects. Key

[34] https://www.nzta.govt.nz/assets/projects/otaki-to-north-of-levin/docs/technical-reports/ibc/Otaki-to-North-of-Levin-IBC-App-G.pdf
[35] https://www.nzta.govt.nz/assets/projects/otaki-to-north-of-levin/docs/technical-reports/ibc/Otaki-to-North-of-Levin-IBC-App-L.pdf

ecology and heritage effects were assessed as able to be adequately managed and mitigated. Option N4 also tied into Option S6 coherently and had greater community support than other northern options.

It was acknowledged that Option N4 posed challenges in respect of the planned urban growth (at Gladstone Green, now Tara-Ika) but it was determined that these potential impacts could be avoided through the design of the future growth area, that is, these are potential effects on dwellings yet to be built and thus considered to be less determinative than effects on dwellings and urban environments that currently exist.

Figure 13 – Preferred Corridor for Ō2NL

18.3.1 2021 Check of the IBC MCA

In 2021 Waka Kotahi rechecked the evaluations undertaken for the short-listed northern corridor options N4, N5 and N9. This process was undertaken to identify if proposed PC4 (Tara-Ika Growth Area) would alter assessments undertaken and if the performance of the corridors relative to one another would adjust.

The experts involved in the original MCA process were asked to check their scores on the basis that Plan Change 4 was adopted. The overall outcome of the recheck process was that there were no changes needed to the original IBC evaluations.

18.4 Route Refinement, Interchanges and Local Road Connections

In October 2019 Waka Kotahi announced a commitment to completing a DBC and designations for a new Ōtaki to north of Levin highway. This also included progressing the Safe Network Programme (“SNP”) of state highway road safety improvements in the short to medium term in the area, and a review of speed limits on SH1 from Ōtaki to Taitoko/Levin.

Work subsequently began to confirm and refine a new highway route alignment within the 300m corridor identified in the IBC along with interchange and local road option preferences. Building on the previous assessment work, this part of the process for determining a Ō2NL Project design was staged, as follows:

- **Long to short list assessment process** - to identify a short list of alignment and interchange location / form preferences and MCA workshops to evaluate emerging preferred alignments;
- **Iwi and public engagement** – Whanau/hapū/iwi engagement on the draft preferred highway alignment and interchange options and Iwi MCA scoring of the "public engagement 2020" alignment option. Public engagement on the draft preferred alignment, interchange and local road options;
- **MCAs for preferred alignment and interchange and local road options** - Preferred alignment and interchange MCA Workshop 3 (November 2020). Additional MCAs for:
  - Taylors Road Half interchange,
  - Tararua to Kimberley local road alignment options,
  - Tararua Road to Queen Street (East of Taitoko/Levin) vertical alignment options, and
  - SH1 / Tararua Road intersection options, entailing MCA Workshop 4 (April 2021) and Workshop 5 (October 2021);
- **Preferred alignment selected** - Identification of the new highway's alignment and interchange and local road preferences.

All MCA workshops undertaken during these stages used criteria and scoring methodologies that are consistent with previous MCA and option assessments for the Ō2NL Project. These stages are discussed in more detail below.

18.4.1 Long to short list assessment

A progressive assessment process was undertaken to identify a short list for further evaluation of:

- route alignment;
- interchange locations and/or forms; and
- local road alignment options.

To develop the initial long list of route alignment options, the preferred 300m wide corridor was broken into of 10 Highway Zones, ranging from 1.5 to 4.5km in length, to enable area focused evaluations. The location and length of each zone was based on engineering and environmental considerations. 80m wide highway route alignment options were developed for each zone, with each option meeting horizontal geometry standards and taking into consideration property information and topographical information. Each option also took into consideration the constraints and opportunities identified as part of the IBC investigations. Typically, up to six alignments were identified for each highway zone.

A screening workshop was held (**Workshop 1**) to determine whether any route alignment options for each zone could be removed or further optimised. This resulted in a short list of route alignment options for each zone.

A separate assessment process was undertaken to identify a short list of interchange locations and local road options (**Workshop 2**). Once design principles for these were established, a long list of interchange and local road options were developed and evaluated against the design principles to identify a short list.

The MCA evaluation for the route alignment and the interchanges used criteria and methodologies (including a 6-point scoring system) that was consistent with the IBC's MCA. The local road options were evaluated through a 3 level "traffic light signal" evaluation process (green for minor impacts, orange for moderate impacts and red for significant negative impacts).

Following completion of the MCAs, the Project Design Team optimised/ adjusted the highway alignment, interchange and local road options in response to the scoring and information shared during the workshops. This formed a logical part of the need to "stitch" together the new highway identified alignment preferences to

ensure that each could technically connect to the alignment in the next highway zone. This process enabled the Project Design Team to respond to key issues highlighted by the MCA assessors at MCA Workshops 1 and 2 (such as avoiding terrestrial ecological effects or complex property acquisitions) as well as ensuring the alignments integrated appropriately with the emerging interchange option preferences.

This work enabled the identification of emerging alignment, interchange and local road options for public engagement.

18.4.2 Whanau/hapū/Iwi and public engagement

During August and September 2020, Waka Kotahi undertook public engagement on the emerging route option preferences. The "top five comment topics" for the emerging option preferences identified through the Waka Kotahi public engagement programme were:

- interchanges;
- draft preferred alignment;
- access and connectivity;
- walking / cycling; and
- local roads (including feedback on the local alternative options proposed for the Kimberley and Waihou / McDonald Road locations).

Both Ngāti Raukawa and the Muaūpoko Tribal Authority established project teams to engage directly with their respective hapū on the emerging option preferences identified in the public engagement programme. The outcomes of this engagement informed each Iwi's option evaluations / scores at MCA Workshop 3 (see below).

In addition, informal community reference groups were established by Waka Kotahi at Manakau, Ohau, Taitoko/Levin and north Taitoko/Levin to provide an additional forum for community discussion on the Ō2NL Project.

18.4.3 MCAs for preferred alignment and interchange and local road options

Following consultation on emerging route options, the project team undertook further analysis to:

- consider whether community and/or iwi feedback and post-MCA design refinement processes had materially altered their original MCA evaluations (from MCA Workshops 1 and 2) of the highway alignment and interchange options, and if so, how and why;
- evaluate new highway alignment options for some of the Highway Zones as a consequence of post-MCA refinement processes and community engagement;
- evaluate a new half grade separated interchange option relative to Tararua Road; and
- undertake a new traffic light signal evaluation of the refined local road options.

An MCA was held on 18 November 2020 (**Workshop 3**). At this workshop, the MCA assessors presented their updated evaluations / scores for the alignment, interchange and local roads. In addition, the assessors provided their evaluations / scores of the new highway alignment options for five of the Highway Zones and the new half grade separated interchange option at Tararua Road as these were the new options that had been generated through public engagement feedback and / or Post MCA assessment processes.

Based on these assessments, a preferred alignment was selected for each highway zone and to form the basis for further ongoing investigations. The preferred alignment (Highway Zone alignment, local road connections and interchanges) mostly comprised the best performing options from the MCA evaluation process, but in a couple of locations (outside of the are subject to this NoR) a slightly different alignment was chosen due to significant property and /or ecological impacts or construction effects.

Follow-on MCAs (**Workshop 4**) were undertaken in response to opportunities that arose during investigations and concerns about the performance of several intersection / level crossings. These are described below:

- **Taylors Road Half Interchange**: Following the selection of a preferred interchange / connection form, further investigation resulted in an additional option being identified that provided better connectivity. The MCA process could not separate the relative performance of the two options. Following consultation with HDC and Kāpiti Coast District Council ("KCDC"), a preferred option was selected based on the improved connectivity it provided, and the reduction in inter-regional traffic movements through Otaki town centre.
- **Tararua to Kimberley Local Road alignment location:** Different local road options were considered that ran parallel and to the east of the O2NL state highway and provided access between Tararua Road and Kimberley Road. Ultimately the preference was to select an option located close to the new state highway to reduce potential land impacts.
- **SH1 / Tararua Road level crossing and intersection options**: This considered options to improve the existing level crossing that leads to the intersection of SH1 with Tararua Road. The preferred option was to provide an at grade improvement with full signalisation.

East of Taitoko/Levin MCA

Further investigation of the preferred alignment indicated that additional alternative design options for a section of the Ō2NL Project relative to east of Taitoko/Levin required consideration. Notably, the then proposed preferred alignment through this area had encountered a high groundwater table. This would make construction difficult and could also potentially affect groundwater and Punahau/Lake Horowhenua. Cultural concerns had also arisen regarding the Project's effects on the whenua in this area.

A long list of options was developed and then shortened with input from the Project's iwi partners and officers of the Horowhenua District Council. The east of Taitoko/Levin options provided different ways of connecting with or traversing two local roads; Queen Street and Tararua Road. These local roads and the new state highway could either be at grade, below or above ground. The same approach applies to the mid-block section. These sub options were assessed separately because whatever option was selected at Queen Street or Tararua Road would not predetermine the preference at the other.

The options were assessed using an MCA workshop process. Criteria and scoring methodologies were consistent with previous option assessments for the Ō2NL Project. Scores were aggregated and ranked using different weighting systems. Aggregated scores were then ranked to give a sense of overall performance. The outcome of the exercise is provided below (green is best performing and red is worst).

The identified preferred options for this segment of the Ō2NL Project took into consideration costs, information from stakeholders and partners, the outcome of a technical MCA and consequential risks and opportunities. The key factors involved in selecting preferred options are provided below:

- **Queen Street Interchange** - Option Q5 (State highway at grade and Queen Street diverted north) was the best performing option in the MCA process. Option Q5 enabled future development of E-W connections between Tara-Ika and Taitoko/Levin. It also means that Tara-Ika is served by the combination of Queen Street (diverted) and Tararua Road as well as the potential new E-W central spine connector (described in the Tara-Ika plan change). The precise alignment of the Queen Street diversion component of Q5 can be designed to align with and serve the planned road network of Tara-Ika Growth Area. This option fits with Tara-Ika Growth Area master plan and in particular the E-W Central spine road identified in that master plan.
- **Tararua Road Interchange** - T7 was preferred (Tararua Road over the state highway) due to best alignment with project objectives and as compared with other options had reduced environmental effects and impacts on productive land.
- **Mid-Block** - All scores and weighing outcomes (except economic weighting) indicate that Option 1 – State Highway at grade (ground level) represents the best performing option.

Table 8 – East of Taitoko/Levin Options: MCA Scores Aggregated, Weighted and Ranked

	Workshop	RMA	Social	Enviro	Cultural	Economics	Average of Scores		Average Rankk
Queen Street, Interchange Weightings									
Q0 – State highway fully below grade (DBC)	9	7	8	7	7	8	8		7.7
Q1 – State highway partially below grade	7	8	7	8	8	4	7		7.0
Q2 – Local road partially below grade	8	9	9	9	9	4	9		8.1
Q3: At-grade: roundabout	5	5	5	4	4	6	5		4.9
Q4: At-grade: close Queen, upgrade Liverpool	4	2	3	2	3	7	3		3.4
Q5: At-grade: Queen diverted north	1	1	1	1	1	2	1		1.1
Q6 – State highway over top	1	3	2	5	5	1	2		2.7
Q7 – local road over top	3	4	4	6	6	3	4		4.3
Q8 – At-grade: 5-arm, shift SH57 connection south	6	6	6	3	2	9	6		5.4
Tararua Road, Interchange Weightings									
T0 – State highway fully below grade (DBC)	4	4	4	4	4	5	4		4.1
T1 – State highway partially below grade	5	5	5	5	5	4	5		4.9
T2 – Local road partially below grade	6	6	6	6	6	3	6		5.6
T3 – At-grade: roundabout	3	1	3	1	1	6	3		2.6
T6 – State highway over top	3	4	4	6	6	3	4		2.3
T7 – Local road over top	1	1	1	2	2	2	1		1.4
Mid-Block, Alignment Weightings									
Option 1: Ground level	1	1	1	1	1	2	1		1.1
Option 2: Below ground level	2	2	2	2	2	1	2		1.9

19. Summary of Consideration of Alternatives

Waka Kotahi has carried out a thorough, detailed and fit for purpose assessment of alternative sites, routes and methods for the Ō2NL Project which has resulted in the Project form as described in Part C. The Project's option assessment and refinement processes have involved comprehensive information gathering and analysis undertaken by broad multi-disciplinary teams and informed by ongoing discussions with iwi partners, key stakeholders and wider public consultation.

The draft preferred alignment for the new highway was assessed as the technically preferred option from work across multiple fields, balancing project objectives, environmental and social impacts and ability to

implement. Technical specialists conducted investigations in multiple areas such as ecology, heritage, social, noise, and engineering, assessing options for where the new highway could be placed within the preferred corridor as well as considering connections and local roads.

The design of the Ō2NL Project within the preferred S6-N4 corridor considered the alignment, the location and form of interchanges that connect the new state highway to the local road network, and local road connections that retain and provide for the existing local road network.

PART F: CONSULTATION AND ENGAGEMENT

20. Overview

Part F provides an overview of partner, stakeholder and public engagement for the Project. It summarises the engagement undertaken during each phase of the Project, including the tools and methods used, the parties engaged and the engagement outcomes sought and achieved. Engagement reported and described in this section includes engagement activities undertaken in respect of the entire Ō2NL Project and feedback from these activities that is considered relevant to this NoR.

The engagement has extended through the issue identification, methods and corridor options identification and assessment, and further engagement was undertaken following the alignment options assessment and refinement processes.

Feedback received as part of this communication and engagement has informed decisions on the preferred corridor selection (as explained in Part E) and also the iterative process applied to the refinement of the alignment leading to the area of land subject to the NoR (including the refinement of the Project as summarised in Table 13 – Adverse Effects That Are Avoided or Minimised Through Project Shaping).

The following describes the outcomes of consultation and engagement undertaken in relation to the Project and sets out a summary of:

- the statutory framework and guidelines for consultation;
- the communication and engagement process;
- the methods and techniques used to engage with partners, communities and stakeholders;
- the phases of consultation;
- key issues identified in feedback and responses to that feedback;
- engagement with whanau/hapū/iwi; and
- engagement with other key stakeholders and affected property owners, the feedback received and responses to that feedback.

The consultation and engagement approach taken has been to work collaboratively with partners and key stakeholders, and to be open and responsive in engagement with the wider community.

21. Statutory Framework and Consultation Guidelines

21.1 Resource Management Act 1991 Requirements

Form 18 of the RMA requires a notice of requirement for a designation to include a description of any consultation that has been undertaken with parties that are likely to be affected. That requirement is addressed in Part F.

Waka Kotahi has undertaken consultation focussing on:

- the effects on the environment of the Project;
- refinements to the proposed alignment of the new road, in order to minimise adverse effects while delivering on the objectives of Waka Kotahi;
- suitable and appropriate approaches to avoiding, remedying or mitigating adverse effects;

- developing the Project alongside tangata whenua as Project Partners; and
- the views, concerns and matters of importance to landowners, stakeholders and the community.

21.2 Waka Kotahi NZ Transport Agency Public Engagement Guidelines 2016

Waka Kotahi has undertaken public engagement to ensure better-informed decisions, improve the Ō2NL Project design and to assist it to deliver a state highway network that meets the needs of communities and the wider public. The extensive public engagement undertaken has also been consistent with Waka Kotahi obligations under the RMA and the LTMA; section 96(1) of the LTMA requires Waka Kotahi to '*exhibit a sense of social and environmental responsibility*' in meeting its statutory objective and undertaking is functions.

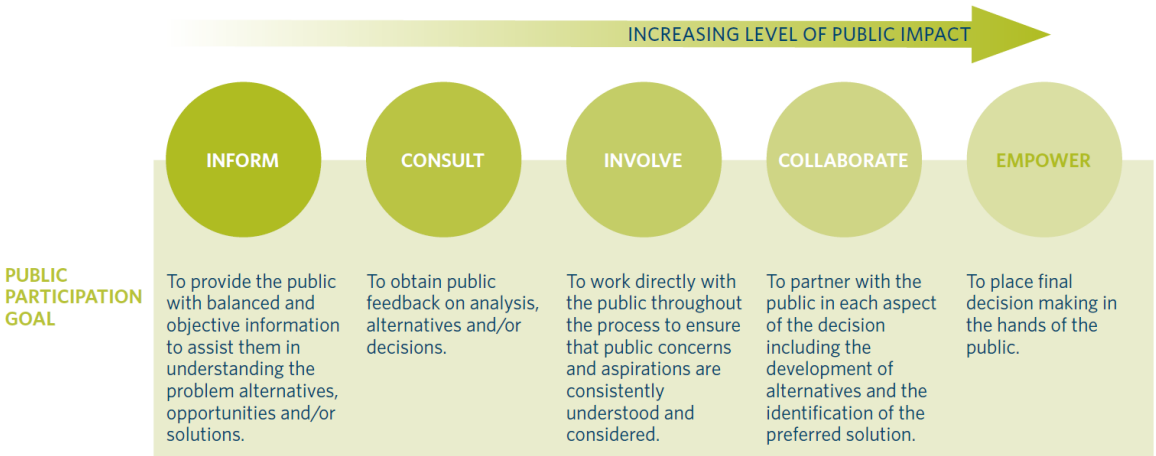
Waka Kotahi NZ Transport Agency Public Engagement Guidelines (2016)[36] provide guidance for deciding when and how to engage with the public. By actively engaging the public in its decision making, Waka Kotahi aims to gain a better understanding of how people, communities and organisations are affected by its decisions and how it should balance social, environmental, cultural and economic responsibilities.

The overarching approach taken by Waka Kotahi to effective stakeholder engagement is to develop strong, collaborative relationships with stakeholders using the following principles:

- we know why we are engaging and we communicate this clearly;
- we know who to engage;
- we know the history and background;
- we begin early;
- we are genuine; and
- we support and encourage best practice.

Waka Kotahi applies the International Association of Public Participation ("IAP2") principles and public participation spectrum as industry best practice guidelines to support its engagement work. The IAP2 spectrum is the basis of the Waka Kotahi Public Engagement Guidelines as it is considered vital to be clear about what level of participation people have in the decision-making process. The participation spectrum is shown in Figure 14.

Figure 14 – IAP2 Spectrum of Public Participation



[36] https://www.nzta.govt.nz/assets/resources/public-engagement-manual/docs/nzta-public-engagement-guidelines.pdf

21.3 Engagement Framework for the Project

For each phase of the Project, the level of partner, public and stakeholder participation has been guided by the IPA2 participation spectrum approach. This approach specifically seeks that engagement transparently identifies the goals or outcome of the engagement process and determines how this outcome can be best delivered through a spectrum of engagement processes ranging from informing (providing information and education) through to empowering (whereby decision making is handed to parties in the engagement process). During Project investigations efforts have sought to ensure that stakeholders are involved and collaborated with while iwi partners are collaborated with and are empowered.

The engagement process has been an integral part of the Project, particularly as part of the Waka Kotahi commitment to exhibiting a sense of social and environmental responsibility which includes taking into account the views of affected communities.

22. Communications and Engagement Strategy

The Project team developed a Communications and Engagement Strategy to guide the 'why', 'when' and 'how' of working with iwi and other project partners and engaging with key stakeholders and the public during initial phases of investigation and through to the current design and consenting phase. This strategy is consistent with Waka Kotahi Public Engagement Guidelines and commitment to apply the IPA2 participation spectrum approach.

Central to this process is the need to develop a partnership with local iwi and to collaborate and build consensus with iwi (see Parts A and G for more information) and key stakeholders. The strategy includes the following communication and engagement principles for this project:

- **Whole-of-project communications** - to help avoid engagement fatigue and confusion. Communications are always supported by whole of Project context and include information about other work that Waka Kotahi is undertaking in the region.
- **Proactive and regular communication** - regular updates to the community and seek opportunities for dialogue and information-sharing, including face-to-face. Proactively share information by publishing key documents and provide answers to likely questions on the project web pages.
- **Transparent** - transparent about programme and process so that key stakeholders and the community can come to the same conclusions about the work programme as the Project team.
- **Take a long-term view of relationships** - the proposed new highway has a long history with the region's stakeholders and the community and so it is important to recognise past engagement and confirm that feedback has been considered. Take a long term view to relationships and provide direct and regular engagement with key stakeholders and the community to help provide visibility of concerns.
- **Be approachable and available** - engage with the audience, communications are straightforward, well-structured, concise and use plain English. The project team is contactable via a freephone number and project email address. Responses are timely, sympathetic, helpful, frank and detailed.
- **Think regionally and nationally as well as locally** - support the bigger picture story about progress with transport infrastructure in the region to provide context.

22.1 Communications and Engagement Tools and Channels

A wide range of communication and engagement tools and channels have been used to reach the public, as described below:

- **Ō2NL Project website** – the website provides up-to- date and accurate information and is a key portal for people to access all public information relating to the Project. Waka Kotahi aims to proactively make as much information and documentation as possible available on the project website (www.nzta.govt.nz/Ō2NL).

- **Communications and Engagement Database** - All communications and engagement activities with key stakeholders and the public are recorded for internal use.
- **Project email newsletter** – this newsletter is emailed to a voluntary mailing list. It provides updates for the community every four to six weeks and is also made available on the website. People can subscribe to project updates via a sign-up form on the website or request newsletters using project inbound channels. As of January 2022 the newsletter has more than1,800 subscribers.
- **Letters / email newsletters to property owners** – major announcements are sent in personalised letters / emails to all property owners identified as potentially affected by the new highway. Since 2018, that has been those inside the 300m wide preferred corridor. For those owners who have supplied email addresses, email updates were used during Covid-19 alert level 4, when it wasn't possible to deliver letters to property owners.
- **Dedicated phone** - A free phone number (0508 625 4636) is available to receive calls and answer queries from the public.
- **Online channels** - A project website is used to provide the public with Project-related information and to give them a further opportunity to interact with the Project team.
- **Email** - O2NL@nzta.govt.nz. Queries on the Waka Kotahi Facebook and Twitter pages are forwarded to the Project team and responded to on the platform or via email.
- **Social Pinpoint** - this online tool is used during periods of public engagement for the community to learn more about proposed changes and leave feedback on the interactive map. Members of the public can view feedback provided by other users and it is made available to view on the Project website.
- **Local project office presence in Taitoko/Levin** - In December 2020 a Project office for the Ō2NL Project was established in Taitoko/Levin, providing a local base for the team to work and meet with stakeholders. The office has a display area to view plans that has been open to the public approximately one day a month since October 2021 (subject to Covid restrictions) and allows members of the public to come and speak to the Project team.
- **Public information events** - Numerous public information events and open days have been held during key engagement phases to enable the public to view plans and designs, ask questions and discuss the Project with team members directly and to provide input and feedback. These are described further below.
- **Stakeholder meetings** - Key stakeholder meetings provide an opportunity for the Project team to present audience specific information to key stakeholder groups and to work collaboratively to develop solutions. These include face to face and online meetings (when appropriate) with stakeholders to discuss specific matters such as river management, water quality monitoring, and plans to improve local roads and infrastructure, as well as multi-disciplinary workshops to discuss the Project, shared use path, intersection and local road improvements, the design framework, ecology and noise. More detail on these is provided below.
- **Landowner meetings** – The Project team meets with and exchanges correspondence with property owners/ tenants both proactively and reactively when owners have particular concerns. This is to inform property owners, listen to any concerns and issues they have, understand their access requirements during construction and operation of the new state highway, and to facilitate land access and future land purchases. During property owner engagement periods, owners are invited to schedule meetings with the Project team to discuss the Project and process any queries related to their property.
- **Media** - Media engagement has been proactive, with press releases, site visits and informal briefings at key stages throughout the process. Public meetings, open days and information sessions were advertised in local media.

Community Groups / Project Reference Group

There are very few recognised community type groups across the Project Area and given the high level of interest from the community in the Project it was possible to establish a forum to allow the community to interact and engage with the Project team on a regular basis at both local venues and virtually (from 2020). It

is recognised that these groups are not representative of the entire community but they provide useful insights.

A Project Reference Group (PRG) was formed in May 2017, which comprised of key stakeholders, iwi and community members. The Project team and the PRG met before the start of the 2017 engagement on "Consultation on Community Values and Interests" as well as during and after that engagement ended. The group met a further four more times in preparation for, and during, the 2018 "Short List" engagement period and were then involved in the 2018 "MCA Process" (as described in Section E).

In June 2020, in order to better suport the ongoing investigations of the Project, the PRG was split into four different Community Groups, representing the communities of Manakau, Ohau, Taitoko/Levin and north Taitoko/Levin. This allowed more detailed discussions about specific locations and their requirements to occur and to inform ongoing alignment investigations (see Section E).

Since March 2021, these Community Groups have continued to meet on (approximately) a bi-monthly cycle and are provided with information about ongoing RMA investigations as well as an opportunity to provide input into some specific design aspects of the Project, such as the location of the SUP. Group insights contribute to the AEE and RMA process and to community relations with the project. It is open to anyone to attend community group meetings, which are advertised electronically (email) and via the Ō2NL newsletter.

23. Iwi Partnership

As set out in the Waka Kotahi Public Engagement Guidelines, Iwi/Māori are recognised as the Treaty partner by the Crown, including specifically in the LTMA. The Guidelines explain that '*in a practical sense this means that shared decision making with Māori when identifying priorities for investment and when identifying the best choice of transport system for their communities, both regionally and nationally'.*

Waka Kotahi has been engaging with the following iwi:

- Ngāti Raukawa ki te Tonga
- Muaūpoko

The Project team have met with iwi during the corridor options, and route alignment assessment processes (as described in Section E). This has intensified during the current phases and is focussed on the twin objectives of forming and maintaining lasting relationships built on trust, and to embed the Māori world view in the Ō2NL Project design.

There has been regular contact with iwi via phone, email and face to face / virtual meetings. Iwi partners have been working alongside the Project team in the undertaking of ongoing investigations including attendance at weekly Project Team meetings and involvement in RMA Planning Team hui. Key interface aspects of iwi involved includes:

- co-creation of a Cultural and Environmental Design Framework – this process commenced in October 2020 and has entailed numerous workshops to develop a preliminary draft CEDF that was issued to iwi for whanau review in December 2021. Detailed development of the preliminary draft CEDF continues in response to emerging design issues (such as noise mitigation investigations, material supply sites and construction methodologies). The preliminary draft CEDF is being used to audit the concept design of the State Highway and associated infrastructure, to inform ongoing design refinement processes.
- weekly workshops have been convened since May 2021 where detailed matters are presented and worked through, including geometric, bridge and stormwater design and in respect specialist topics such as groundwater, ecology, air and water quality, construction methodology including erosion and sediment control, spoil sites and material supply sites;
- access to project resources including technical reports and advice, draft plans /designs and drawings and draft technical reports. This includes the ability to discuss matters with expert / specialist advisors, project designers, planning team and support, and request drawings and support for discussions with whanua and hapū members;

- attendance and participation in the ecology, natural character and noise workshops, providing information and helping to shape outcomes; and
- attendance at PSC since February 2022.

The partnership approach has highlighted the range of interests in the Project. Key cultural interests include how the Project interacts with wai (including ground water), maunga, spiritual pathways, what the impacts are on the environment (wetlands, rivers, stands of vegetation and terrestrial invertebrates, such as snails and lizards, birds and other fauna) and how the Project will contribute positively to the environment and community.

Cultural effects and how they are proposed to be managed are outlined in Part G.

24. Consultation Phases and Feedback

This section summarises the key phases of public consultation that have occurred since 2017 and the feedback from those phases. Project investigations commenced in 2011 and information collected in the earlier phases of investigation was used to inform the phases described below.

24.1 Consultation on Community Values and Interests - June 2017

In June 2017, it was decided to re-start Project investigations by checking in with the community to ensure that the problems in the network (see Section A) were understood and to identify matters and issues that needed to be considered when developing a solution. This consultation phase sought information on community values and interests, including cultural, environmental, business and social issues.

A series of public open-days, drop in events and community events were convened, and supported by information boards, an interactive map and social pin point (see 22.1 above). Key statistics from these events are:

- 1,676 people attended;
- 553 pins and stickers were placed on maps indicating features of interest/concern;
- 217 feedback forms were completed; and
- 1300 newsletters (issued in English and Te Reo) were sent to households, businesses, and landowners.

Some of the key issues raised during this process are[37]:

- Eastern corridor has significant challenges, given high call soils, rural lifestyle homes and proximity to Manakua and Levin;
- Western corridor is shorter route, but ground conditions will be challenging and significant historical and cultural issues;
- Integrated cycleway and native planting areas would be huge benefit to local communities and local biodiversity, which would help offset effects of construction;
- Bypass of Levin and other townships / villages would reduce congestion and improve amenity especially in Levin town centre
- Concerns that bypassing Levin could have economic effect on town centre businesses
- Concern about safety on current state highway, notably narrow bridges, safe passing, intersections.
- Unique features of Horowhenua need to be recognised including village character, productive soils, marae, rural lifestyle, Tararua Ranges, Lake Horowhenua and heritage buildings.

[37] SH1 Ōtaki to north of Levin: Engagement summary report (nzta.govt.nz)

As was published in this summary of feedback, western options were reconsidered ahead of public engagement on short listed corridor options. However, the clear outcome of the investigation process was that all western options should be discarded and not advanced. These options did not provide sufficient benefits and were consistently the worst performing options from the 2017 MCA process. This was shared in a project update in February 2018.

24.2 Short Listed Corridor Options – 2017 and 2018

Following on from the Consultation on Values and Interests phase, the Project team considered methods and then options to solve the problems that had been identified. The PRG group were involved in the MCA phase that informed the short listing process (see Section E) and also advised on how to consult on the short list.

The Short List of Options was then subject to public consultation and engagement exercises:

- more than 300 meetings were held with landowners;
- 8 community-led events, meetings and huis were held;
- 8 Waka Kotahi information sessions were held;
- more than 1410 people attended information and community meetings;
- there were more than 1370 visitors attending the pop-up shop;
- there were 1630 newsletter subscribers;
- 490 letters were sent to landowners;
- 19,000 newsletters were sent to households, businesses and landowners; and
- 585 submissions were received via feedback forms, online forms and email.

Feedback from this process was collated and some of the key findings are summarised below, and includes reference to additional investigations that were commissioned in response to concerns raised[38]:

Summary of comments on corridor segments options

- S6: some support because of lifestyle benefits, resilience, journey time savings and agreeing that it best met the project objectives. Some oppose because negative social effects on Manakau community, severance and impacts on dwellings
- S7: some favoured option as had fewer negative effects on the community and dwellings at Manakau even though it would cost more. Longevity would justify the higher cost. Some opposed because crossed fault line (resilience issues), severed large areas of productive land, known areas of ecology and landscape value.
- S7A: limited support for option but some considered that it was a good compromise between S6 and S7. Others thought that negatives outweighed positives and cost was prohibitive.
- N4: some supported because it was shortest, more direct and provided best connection into Levin and so best met project objectives. Some supported because it fitted with district development plans, notable urban development to east of Levin. Some opposed because of effect on residential property, ecological values, productive land and heritage values.
- N5: Not many people commented on this option. Some supported because it connected well with southern options. Some opposed because of negative effects on the community and residential dwellings.

[38] Ōtaki to north of Levin IBC: Appendix L – engagement report (nzta.govt.nz)

- N9: Some supported because the option effected the least number of dwellings and/or it had good fit with southern option S7. Some opposed because of the potential effect on planned future development and growth in this area.

Additional investigations requested

- Social impact assessment to determine relative impacts on the lives and livelihoods of local residents of the corridor options (Response: social impact assessment commissioned as requested);
- Consider effects on all properties not just those being acquired (Response: effects on all properties considered);
- Assess the effects on proposed development to the East of Levin (Response: urban design assessment commissioned to consider potential effects and discussed with HDC)
- Identify and consider potential effects on urupā and waahi tapū (Response: work with iwi and land owners to identify sites of cultural importance);
- Noise effects on Manakau residential properties (Response: specialist noise assessment undertaken)
- Review of the MCA process requested (Response: peer review of MCA process undertaken)

The feedback from the consultation, including additional investigations / studies commissioned in response to concerns, informed selection of a preferred corridor option which is reported in the IBC. The process for selecting the preferred option is described in Section E.

24.3 Consultation on Draft Preferred Alignment Options - 2020

The previous phase selected a preferred corridor that is approximately 300m wide (announced in December 2018). This phase of investigation related to the development of a road alignment within the preferred corridor option, including options of interchange locations, interchange form and local road connections.

Consultation during this phase was on the draft preferred alignment, interchange and local road options. Consultation was undertaken through a combination of community events, land owner meetings, feedback forms and through an interactive map social pinpoint tool[39]. The extent of this engagement is set out below in Table 9.

Table 9 – Scale of Engagement on Draft Preferred Alignment Options

Engagement	Feedback Received
Platform	Approximately 800 people attendees to 10 community events 1304 visitors to Social Pinpoint online 99 property owner meetings
Feedback received	269 Social Pinpoint comments from 116 users 26 feedback forms 68 emails

The feedback received in respect of the draft preferred alignment options is summarised in Table 10.

[39] Ōtaki to North of Levin engagement summary report – August-September 2020 (nzta.govt.nz)

Table 10 – Summary of Draft Preferred Alignment Options Feedback

Project Element	Summary of Feedback
Interchanges	Full interchanges should be provided to accommodate high traffic volumes, including at Tararua Road and SH57/SH1 An additional interchange should be provided around Manakau
Local roads	Should retain existing connections, and as much as possible provide alternate routes where these connections need to be severed
Shared use path	Connect to local facilities, reserves, cafes Connect to other paths Provide access to rivers Should be continuous Include facilities such as car parking

25. RMA Phase

Following the selection of a preferred alignment, effects-based investigations commenced and the outputs from these investigations enabled an iterative process of design refinement to occur. During this phase consultation and engagement exercises with community and stakeholders occurred as described in the following Table 11.

Table 11 – Summary of RMA Phase Consultation

Stakeholder/Partner	Purpose	When and How
RMA Officers Meeting (Kāpiti Coast and Horowhenua District Council, Horizons and Greater Wellington Regional Council officers and planning representatives)	To discuss administrative and mechanical aspects of consenting pre-lodgement and post lodgement phases. To provide information about the Project and to align scope and purpose of effects assessments with RMA purposes	Monthly since February 2021 Project briefing (May 2021) Project site visits (May 2021 and August 2021) Regular e-mail updates on programme Electronic distribution of draft technical reports, design drawings and supporting information in June and over the period August – December 2021 Attendance at noise, ecology shared use path and CEDF development workshops (2020 – 2022)
Department of Conservation	To provide information about the Project and to align scope and purpose of effects assessments with RMA purposes. To check consistent understanding of the values of ecology systems and the effects on them are understood and to agree an approach to responding to those effects.	Ecology workshops Project site visits Monthly progress catchups Attendance at ecology shared use path and CEDF development workshops (2021 – 2022) Electronic distribution of draft technical reports, design drawings and supporting information in June and over the period August – December Attendance at ecology and CEDF development workshops (2020 – 2022)
Road users groups - Police, Fire, Ambulance, Wellington Regional Transport	Quarterly briefings in respect of the Projects design specification, connections and interchanges.	Approximately quarterly on-line /hui briefings / discussion in respect of the status of the design and investigations

Stakeholder/Partner	Purpose	When and How
Committee, Automobile Association, NZ Road Transport Association, Road Transport Forum NZ, Heavy Haulage.		
Forest and Bird	To provide information about the Project and to align scope and purpose of effects assessments with RMA purposes. To check consistent understanding of the values of ecology systems and the effects on them are understood and to agree an approach to responding to those effects.	Ecology workshops Project site visits Attendance at ecology shared use path and CEDF development workshops (2021 – 2022) Electronic distribution of draft technical reports, design drawings and supporting information in June and over the period August – December Attendance at ecology and CEDF development workshops (2020 – 2022)
Ō2NL noise mitigation group and Manakau noise group	To share information about the Project and to discuss and agree approaches to managing the effects of noise on existing and planned dwellings	Meet periodically as information becomes available through investigations.
Kāpiti Coast and Horowhenua District Council briefings	To share information with elected representatives and senior staff about the Project and to share in particular milestones in programme leading up construction and road opening.	Meet periodically as information becomes available through investigations. Weekly catchups with Horowhenua District Council managerial staff.
Community group meetings	To share information about the Projects design and effects assessments processes. To provide information on programme.	Meet bi-monthly since March 2021.
Kāpiti Coast and Horowhenua District Council Road Controlling Authority	To share information about the Project and in particular to discuss design and Project interfaces with local road networks. To discuss and agree assumed condition of the existing state highway network once the new State highway is open, including revocation options and principles.	Revocation workshops in October 2021, December 2021, February 2022. Level crossing improvement investigations hui, and site visit during period June 2021 – February 2022. Transport modelling assumptions discussions, including assumed improvements to the local road network.
Heritage New Zealand Pouhere Taonga	To provide information about the Project and to align scope and purpose of effects assessments with RMA purposes. To check consistent understanding of the values of heritage and the effects on them are understood and to agree an approach to responding to those effects.	Bi-monthly catch-up meetings Electronic distribution of draft technical reports, design drawings and supporting information in August 2021.

26. Directly Affected Landowners

Waka Kotahi has proactively engaged with landowners throughout the investigations phases of the Project. This purpose of this engagement has been:

- to ensure that the phase of investigation is understood;

- to provide information on what the next phases will consider; and
- to provide an indication of overall timeframes.

A key part of this engagement is the collecting of information from the landowner in order to understand their property; to inform ongoing investigations; and to provide, as necessary, additional support for land owners during the process.

Ahead of any major announcement, letters and/or emails were sent to all affected landowners with offers to meet directly with them, to ensure they had an opportunity to discuss the Project and process any queries related to their property. Landowners are also invited to contact the Project team at any time.

More recently landowners have been contacted to discuss detailed Project arrangements and ensure that properties that are likely to be only partially acquired can continue to be used during construction and operation of the new state highway. These discussions have focussed on access, water supply and any other utility or service infrastructure requirements.

Landowners affected by this NoR have been involved extensively in the processes described above, including numerous one-on-one meetings, and discussions. More recently, these discussions have focussed on sharing project design information and proposed designation boundaries to check that the boundary is understood and for Waka Kotahi to understand if there are any particular concerns with the proposed boundary so that practical discussions to resolve issues can commence.

27. Continuing and Future Consultation

Waka Kotahi is committed to ongoing communication with all partners, key stakeholders, landowners and members of the public through the RMA approvals, design and construction phases of the Ō2NL Project. This ongoing engagement will include sharing Project information and providing updates via the project newsletter, website, local media and social media.

Working closely with our iwi partners and in consultation with other key stakeholders will also be an integral part of the detailed design process of the final alignment (and subsequent processes).

Waka Kotahi and the contractor/consortium engaged to construct the final alignment will develop and implement a comprehensive communication plan prior to, and for the duration of, construction works.

The experience of Waka Kotahi with other major construction projects around the country is that effective communication of information is one of the best ways to manage the effects of construction on people and communities.

PART G: ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

28. Overview and Approach

An assessment of the effects on the environment of allowing a NoR is required by the RMA. In addition to the RMA requirements, it is also part of Waka Kotahi environmental policy and its operating principles under section 96(1)(a) of the LTMA to:

> *"exhibit a sense of social and environmental responsibility, which includes –*
>
> *(i) Avoiding, to the extent reasonable in the circumstances, adverse effects on the environment; …"*

The requirements of the RMA and LTMA form the basis for the assessment of effects on the environment undertaken in respect of this NoR.

The following sets out the actual and potential effects of the construction, operation and maintenance of the Ō2NL Project as relevant to this NoR. Part G describes the assessment undertaken in key topic areas, including a description of the potential effects of allowing the NoR (with reference to the existing environment described in Part B) and whether these effects are positive or adverse and the scale, duration and locality of effects. A description of measures undertaken or proposed to avoid, remedy, mitigate, offset or compensate for potential adverse effects is also included.

Part G addresses the particular effects of the construction and operation of the Ō2NL Project that is subject to this NoR, being the section between Queen Street East and Tararua Road. For example, the following assessment of effects on terrestrial ecology values focusses on the habitats in the area subject to the NoR, with effects on habitats beyond the Tara-Ika Growth Area primarily to be addressed in the NoRs to follow for the entire/remainder or the Ō2NL Project. However, many of the positive and adverse effects arising from the delivery of the section of the Project that is subject to this NoR are best considered as part of the effects of the Ō2NL Project as a whole. For example, economic effects. This assessment necessarily takes a broad approach, drawing on ongoing work to assess the potential effects on the existing environment within the area of the NoR and also of the Ō2NL Project as a whole, while acknowledging that the proposed designation alone does not directly accrue all the effects described.

This assessment of effects is informed but technical assessments set out in Table 12.

Table 12 – Technical Assessments that Informed the Assessment of Effects

Assessment	Technical Expert
Traffic and transport	Philip Peet, Stantec
Noise and vibration	Michael Smith, Altissimo Consulting and Stephen Chiles
Landscape and visual	Gavin Lister, Isthmus Group
Social	Joanne Healy and Amelia Linzey, Beca
Terrestrial ecology	Timothy Martin, Keely Paler and Nick Goldwater, Wildland Consultants
Historic heritage	Ian Bowman
Archaeology	Daniel Parker, inSite Archaeology
Productive land	Donald Sheppard, Sheppard Agriculture

Assessment	Technical Expert
Contaminated land	Paul Heveldt, Stantec
Economy	James Fairgray, Market Economics

28.2 Project Shaping

As set out in Part E, the avoidance of adverse effects has been a key driver for the identification of the preferred corridor and the subsequent shaping and refinement of the corridor (to ultimately determine the location and extent of the proposed designation). The adverse effects that are avoided or minimised through project shaping are set out in Table 13.

Table 13 – Adverse Effects That Are Avoided or Minimised Through Project Shaping

Adverse Effect	Effects Avoided or Minimised Through Project Shaping
Cultural	Selection of an eastern route avoids the coastal areas that contain numerous pa and kainga, hunting and cultivation grounds, battle sites, urupa and midden and therefore avoids what would likely be significant adverse effects on cultural values. To avoid potential effects on groundwater options to develop a material supply site on land between Tararua Road and Queen Street have not been pursued. Adjustment to the vertical design of the Ō2NL Project through this area to also avoid potential effects on groundwater. The road has been aligned the road to avoid and minimise potential effects on native woodland areas located at northern end of this NoR (relative to Queen Street and Arapaepae road and to the Prouse Homestead / Ashleigh located on Queen Street)
Traffic and transport	Traffic time benefits have been maximised by limiting the extent to which the route deviates from the current route. Impacts on community connectivity are limited by reinstating connections for eight of the 14 roads that are intersected.
Noise and vibration	Adoption of the use of a low-noise porous asphalt surface (OGPA) minimises the impact of road-traffic noise.
Landscape and visual	The selection of an eastern route avoids what were assessed to be greater potential landscape impacts of western and central route, including effects on: - cultural landscapes focused on Punahau (Lake Horowhenua) and Waiwiri (Lake Papaitonga); - sensitive sand dune country; - Taitoko/Levin township (including the connection between Taitoko/Levin and Waipunahau). Within the Tara-Ika Growth Area, the selection of an alignment near, and parallel to, SH57 minimises impacts on: - the urban development pattern provided for in Proposed PC4; - the Waiopehu Reserve, the Koputuroa Stream and a close pattern of rural residential development in the area east of Proposed PC4. The proposed designation avoids the two remnant stands of lowland bush near ‘Ashleigh’.
Social	Local road connection improvements and refinements have retained access, minimise impacts on way of life and community connectivity. The SUP provides connectivity to community resources and facilities in Levin and the Tararua Ranges.
Terrestrial ecology	The proposed designation is aligned to avoid and minimise potential effects on native woodland areas located at northern end of the area subject to this NoR. Restricting highway lighting to intersections (outside of the NoR) minimise the impacts on sensitive indigenous fauna.

Adverse Effect	Effects Avoided or Minimised Through Project Shaping
Historic heritage	The proposed designation avoids statutorily recognised built heritage as well as the two non- statutorily recognised built heritage places, including 'Ashleigh'.
Archaeology	Selection of an eastern route avoids the coastal areas that contain numerous pa and kainga, hunting and cultivation grounds, colonial homesteads, battle sites, urupa and midden, amongst other sites and therefore avoids what would likely be significant adverse effects to numerous archaeological sites. The designation has been refined to protect a small number of verified pre-1900 historic houses from physical adverse effects.
Contaminated land	The proposed designation was refined to avoid two identified HAIL sites.
Economy	Provision of access points to Taitoko/Levin town centre minimise the impacts of through traffic and, therefore, spending by motorists.

Where avoidance has not been possible, measures to remedy or mitigate significant adverse effects are proposed.

28.3 Summary of Effects on the Environment

The actual and potential effects of the construction, operation and maintenance of the Ō2NL Project as relevant to this NoR and the area where the proposed designation traverses the area subject to Proposed PC4, including opportunities or measures that can be taken to minimise or mitigate adverse effects are summarised in the following Table 14.

Table 14 – Summary of Actual or Potential Effects on the Environment

Actual or potential effects on the environment	Temporary effect	Permanent or ongoing effect	Positive effect	Adverse effect	Description of effect with mitigation
Cultural					
Impacts on spiritual pathways and connections between maunga and Punahau/Lake Horowhenua.		✓		✓	Adverse effects are able to be appropriately managed through the ongoing collaborative design process with iwi partners and through the CEDF.
Potential construction and operational effects on wai.	✓	✓		✓	Adverse effects are able to be appropriately managed through the ongoing collaborative design process with iwi partners that will lead into the regional resource consent process where matters relation to discharges are addressed.
Potential construction impacts on taonga and cultural values.	✓			✓	Adverse effects are able to be appropriately managed through the ongoing collaborative design process with iwi partners and through oversight of dedicated kaitiaki.
Potential impacts on habitats of taonga species and taonga species.	✓	✓		✓	Adverse effects are able to be appropriately managed through the provision of habitat protection and

Actual or potential effects on the environment	Temporary effect	Permanent or ongoing effect	Positive effect	Adverse effect	Description of effect with mitigation
					enhancement measures that are implemented in collaboration with iwi partners.
Traffic and transport					
Safety benefits as a result of: - a reduction in DSIs; - an improved KiwiRAP star rating; - a reduction in risk (IRR and Collective Risk); - a reduction or elimination of the travel speed gap.		✓	✓		Significant positive effect.
Improved resilience of the existing and new highways.		✓	✓		Significant positive effect.
Improved travel times on the transport network.		✓	✓		Significant positive effect.
Reduced delays on the state highway network and local roads.		✓	✓		Significant positive effect.
Impacts on community and property connectivity across and to the Ō2NL Project.		✓		✓	Minor adverse effect on the basis that connectivity is maintained.
Impacts on active modes (and particularly pedestrians and cyclists).		✓	✓		Positive effect as a result of the provision of the SUP and improved safety (including through reduced traffic on the existing network).
Impacts of construction traffic on the safety and efficiency of the existing transport network.	✓			✓	Adverse impact that is appropriately mitigated through the implementation of construction management practices and measures.
Noise and vibration					
Effects of operational road traffic noise on Protected Premises and Facilities ("PPFs") and human health near existing SH1 and SH57.		✓	✓		Positive effect on PPFs located near existing SH1 and SH57 due to reduced noise levels.
Effects of operational road traffic noise on the Taitoko/Levin town centre.		✓	✓		Minor positive effect on the character of the noise environment in the Taitoko/Levin town centre.
Effects of operational road-traffic vibration on existing PPFs.		✓	✓		No adverse vibration effects on existing PPFs.

Actual or potential effects on the environment	Temporary effect	Permanent or ongoing effect	Positive effect	Adverse effect	Description of effect with mitigation
					Minor positive effect due to reduced vibration for PPFs near existing SH1 and SH57.
Effects of operational road-traffic noise on PPFs and human health.		✓		✓	Adverse effects on people exposed to new road-traffic noise, subject to a high performance low-noise road surface being laid.
Temporary effect of initial chipseal surface prior to the low-noise road surface being laid.	✓			✓	Moderate adverse effect over a limited duration (one year).
Construction noise and vibration effects.	✓			✓	Minor adverse effect within 200 metres of construction activities, subject to good practice management embedded through a management plan or plans.
Landscape and visual effects					
Visual impact of the highway and traffic on it.		✓		✓	Moderate adverse effects, subject to mitigation planting to soften visibility while maintaining views of Tararua Ranges.
Impacts on landscape character and the legibility of the broader landforms.		✓		✓	Moderate adverse effects, subject to mitigation planting to soften visibility while maintaining views of Tararua Ranges.
Impact on connectivity		✓		✓	Adverse effect associated with alignment and legibility, noting that structures providing connectivity also have an adverse effect.
Visual effects of the Ō2NL Project when viewed from individual properties.		✓		✓	Adverse effects varying from 'very low' to 'very high' with mitigation on a property by property basis for those assessed as 'moderate' or higher.
Visual effects of construction activities.	✓			✓	Adverse impacts, noting that the wider community takes a visual interest in construction progress.
Social					
Impact of construction activities on way of life: - construction related disruption to access (local and sub-local); generation of commercial activity (local).	✓		✓	✓	Low to moderate negative due to access disruption that is mitigated through temporary access and traffic management. Low to moderate positive impacts of increased commercial activity.

Actual or potential effects on the environment	Temporary effect	Permanent or ongoing effect	Positive effect	Adverse effect	Description of effect with mitigation
Regional impact of operation of the Ō2NL Project on way of life.		✓	✓		Moderate positive impacts based on improved resilience, travel time savings and reduced delays.
Regional impact of the Ō2NL Project on community cohesion.		✓	✓		Low positive social impact as a result of the SUP providing community connections.
Regional impact of the Ō2NL Project on health and wellbeing.		✓	✓		High positive impact as a result of the reduction of DSIs.
Local and sub-local impacts of the NoR on way of life: - movements between and within local communities; - traffic through Taitoko/Levin town centre; -improved resilience, travel time savings and reduced delays; - changed noise environment; - use of SUP; - changing commercial activity.		✓	✓	✓	Low to moderate positive impact as a result of more efficient and reliable movement between communities. High positive impact through reduced traffic and therefore improved function of Taitoko/Levin town centre. Moderate positive impact on ability to sustain oneself through improved traffic conditions. Moderate negative impacts at a sub-local level where journeys are diverted. Negative impacts on the use and enjoyment of outdoor spaces as a result in increased noise. Positive impact of SUP providing a new attraction. Low to very low impact of changes in commercial activity (reducing to negligible over time.
Local and sub-local impacts of the NoRon community cohesion: - traffic volumes on existing state highways; - creation of a border with between Tara-Ika Growth Area and Taitoko/Levin; - severed properties between SH57 and Ō2NL	✓		✓	✓	Moderate to high positive impact as a result of reduced traffic on SH1 and SH57; Low to negligible negative impact of 'border' that is mitigated by connections provided; Low negative impact (reducing over time) on severed properties (between SH57 and Ō2NL).
Local or sub-local impacts of the NoR on health and wellbeing.	✓		✓		High positive impact as a result of the reduction of DSIs. Positive impact of SUP. At a sub-local level, positive impact as a result of reduced stress to regular road users (due to reduced congestion).
Local and sub-local impacts of the NoR on quality of the living environment.	✓		✓	✓	Low to moderate positive impact as a result of reduced traffic on the existing network. Positive impact of SUP as an amenity and buffer.

Actual or potential effects on the environment	Temporary effect	Permanent or ongoing effect	Positive effect	Adverse effect	Description of effect with mitigation
					Moderate positive and negative impacts (depending on the sub-local location) as a result of changes to the noise environment.
Terrestrial ecology					
Indirect effects on habitats of high ecological value through fragmentation.		✓		✓	Adverse effects are addressed by: -maximising habitat quality in remaining habitats through pest plant and pest animal control; -planting buffer vegetation to minimise potential microclimatic changes - increase and enhance habitat for indigenous skinks.
Disturbance of fauna as result of the construction and use of the new highway.	✓	✓		✓	Adverse effects are mitigated through: - the use of low-noise road seal and other noise reduction methods (for high value birds); - providing indigenous vegetation as a buffer.
Effects of increased pest plants and animals		✓		✓	Adverse effects are mitigated through the implementation of pest management measures.
Road kill of indigenous fauna		✓		✓	Adverse effects are mitigated through: - road side amenity planting being restricted to species that do not provide nectar or fruit for birds; - designing other plantings where immediately adjacent to the highway, so that the vegetation between this habitat and the highway is both tall and dense to encourage birds to cross the at a safe height or to divert; - the use of temporary or permanent fences or other barriers.
Historic heritage					
Impacts (visual and noise) on heritage values of 'Ashleigh'	✓	✓		✓	Less than minor adverse effect subject to measures to monitor, remediate or mitigate adverse effects.
Archaeology					
Damage or disturbance of potential or unknown archaeological sites	✓		✓	✓	Negligible or less than minor adverse effect; and Minor positive effect
Productive land					
Loss of the ability to use the land for production		✓		✓	Minor adverse effect

Actual or potential effects on the environment	Temporary effect	Permanent or ongoing effect	Positive effect	Adverse effect	Description of effect with mitigation
fragmentation of land parcels in a manner that impacts on future productive use.		✓		✓	Minor adverse effect
Economy					
Economic impact of construction as a result of Project expenditure.	✓		✓		More than minor positive effect
Economic impact on the use of productive land	✓	✓		✓	Less than minor adverse effect
Economic effects on retail spending in Taitoko/Levin town centre		✓		✓	Less than minor adverse effect
Economic impact or consequences of population growth stimulated by the Project		✓	✓		Significant positive effect as a result of growth of the Horowhenua economy.
'Wider Economic Benefits' to the regional and sub-regional scale.		✓	✓		More than minor positive effect
Property and network utilities					
Effects as a result of disturbance, disruption or relocation of access, network utilities and services.	✓	✓		✓	Minor adverse effect that is mitigated through design, construction procedures, consultation and processes established by industry codes of practice.

29. Cultural Values

The Waka Kotahi approach to recognising and providing for cultural values and to managing actual and potential effects of the project on those values is underpinned by a commitment to work in partnership with Muaūpoko and Raukawa ki te Tonga on the design of the Project including construction processes.

As described in Section 1.3 of this document, Iwi Partners are involved in a multi-layered engagement and collaboration with the Project, which is committed to respecting and integrating cultural and spiritual values into the Project. Cultural values agreed with Iwi Partners underpin the design, management and construction methodology of the Project to ensure that cultural and environmental matters are being appropriately managed.

The process of identifying the potential effects of the Project and the development of options to avoid, remedy and mitigate these effects is iterative. This is particularly the case for this Project, given that the detailed design of the road alignment follows this designation process. Consequently, for example, the significant cultural and spiritual values associated with water will be addressed in greater detail as part of the future resource consent and related processes.

29.1 Cultural and Environmental Design Framework

The CEDF is being developed through a collaborative design process between Waka Kotahi and Muaūpoko and Ngāti Raukawa ki te Tonga. The purpose of this process and framework is to ensure cultural values and the core principles that flow from these permeate the design process and all aspects of the CEDF. Integration of these values and principles will be embedded. They are relevant to all aspects of the design including the selected alignment of the highway and how it interacts with the land, water above and below ground, all flora and fauna, existing and likely future communities and other transport connections in the district.

Through the partnership process, the following overarching draft principles have been developed for the project and the CEDF:

- Tread lightly, with the whenua:
  - Me tangata te whenua (treat the land as a person).
  - Kia māori te whenua (Let it be its natural self).
- Create an enduring legacy:
  - Kia māori te whakaaro (normalise māori values).
  - Me noho tangata whenua ngā mātāpono (embed the principles in all things).
  - Tū ai te tangata, Tū ai te whenua, Tū ai te Wai (elevate the status of the people, land and water.

Other principles that are aligned, and should be considered along with the overarching ones are:

- Rongomau - 'to make peace' also referencing healing – rongoā.
- Haumanutanga - referencing safety, recovery, restoration; the process to ensure these things.
- Wairuatanga- relating to the need to consider the mauri of the whenua and the wai; the process to ensure this and bring this together in a holistic way.

Together, the values and core principles bring a focus on a CEDF and design response (and assessment, procurement, construction and ongoing management) for positive, measurable outcomes; to preserve, restore, enhance and create.

29.2 Project Shaping in Response to Cultural Values

As summarised in Table 13, cultural values have driven or influenced the following outcomes in the design and construction methodology, through collaboration with iwi partners:

- Selection of an eastern route avoids the coastal areas that contain numerous pa and kainga, hunting and cultivation grounds, battle sites, urupa and midden and therefore avoids what would likely be significant adverse effects on cultural values.
- The avoidance of potential effects on groundwater as a result of not pursing options to develop a material supply site on land between Tararua Road and Queen Street.
- The avoidance of potential effects on groundwater by adjusting the vertical design of the Ō2NL Project through this area to also avoid potential effects on groundwater.
- The avoidance or minimising potential effects on native woodland areas located at northern end of this NoR (relative to Queen Street and Arapaepae road and to the Prouse Homestead / Ashleigh located on Queen Street);
- The inclusion of measures to manage potential effects on native birds, lizards and snails, including search and relocation strategies;
- The design of stormwater collection and management systems that maintain existing catchments, and manage flows so that they mimic current conditions.

- Construction processes that include appropriate oversight by dedicated kaitiaki (the principles of kaitiakitanga, ūkaipotanga, pukengatanga and rangātiratanga).
- Site survey and investigation processes that continue to involve iwi partners in order to allow for cultural knowledge transfer, to adhere to cultural protocols and to include upskilling opportunities (the principles of kaitiakitanga, ūkaipotanga, pukengatanga, whanaungatanga and rangātiratanga).

It is anticipated that the ongoing design development process will, in collaboration with iwi partners, result in further improvements to the design and construction processes.

29.3 Measures to Avoid, Remedy or Mitigate the Adverse Effects

As explained above the overarching purpose of the CEDF is to integrate the design elements of the Ō2NL Project in response to context and agreed principles and design outcomes that flow from this. The placement of te ao māori, mātauranga māori and te mana o te wai at the centre of the design framework provides a focus on '*first do no harm*' and to '*let the whenua and the awa be its natural self*'.

The process to date has resulted in significant design changes as well as changes to investigation processes. To date no effects on cultural values have been identified that cannot be either avoided, or appropriately managed. Waka Kotahi is continuing to work in partnership with iwi mana whenua to address and resolve wider concerns about development in the area.

The design of the Project and appropriate construction management plans will be developed and prepared as part of the Outline Plan process. The design and management plans will also include details on how effects on roto, repo and wai are being avoided, remedied and adverse effects are being appropriately managed as required by regional consents obtained. The design will take into consideration development occurring in the area.

This future process is considered to provide robust appropriate measures to secure appropriate avoidance, remedy of effects or where residual effects remain appropriate mitigation.

Waka Kotahi acknowledges and appreciates the considerable efforts of Iwi Partners in connection with the Project to date. Waka Kotahi expects that Iwi Partners will want to provide an update on their respective positions as the Project further develops and as more design information is made available. Waka Kotahi will actively support and facilitate Iwi Partners in doing so, consistent with the partnership approach.

30. Traffic and Transport

30.1 Introduction and Assessment Methodology

The traffic and transport effects of the Project have been assessed based on a range of assumptions, including in relation to the rate of growth, and with reference to:

- a 'do minimum' transport network that is the existing transport network including improvement works that have been committed to (or are currently being implemented) and the predicted population to 2039; and
- the 'Project', being 'do minimum' with the inclusion of the Ō2NL Project and other related network modifications to 2039.

The assessment of transport effects generally considers the difference between the 'do minimum' and 'Project' scenarios in 2039.

Safety effects are assessed with reference to:

- estimated number of deaths and serious injuries ("DSI")[40];

[40] Consistent with the Waka Kotahi 'Monetised Benefits and Costs Manual' ("MBCM").

- the KiwiRAP Star Rating, which is a rating of the safety of the infrastructure in comparison to the volume of traffic the highway carries;
- the Infrastructure Risk Rating ("IRR") which is an alternative proactive measure of risk and is calculated using the Waka Kotahi MegaMaps tool;
- the travel speed gap, which is the difference between the posted speed limit ("PSL") and the calculated safe and appropriate speed ("SAAS"); and
- collective safety risk calculations using the estimated DSI equivalents.

Resilience effects are estimated by comparing how journeys may be impacted by events, with reference to the impact of historic effects and how this impact would change in the future, to determine likely exposure to hazards and potential changes in travel times.

Travel times and delays more generally are determined with reference to the Ō2NL Project Traffic Model for trips on the existing and future state highway for the following key journeys:

- Ōtaki to Taitoko/Levin;
- Ōtaki to north of Taitoko/Levin; and
- Ōtaki to SH57 north of Taitoko/Levin.

The outputs of the traffic model are also used to understand network performance and particularly delays and level of service ("LOS").

Impacts on community connectivity are assessed through a review of changes in distance and travel times between various areas. The impacts on property connectivity have been assessed with reference to the proposed access for individual properties and travel times from the individual properties to destinations north and south.

Construction effects are assessed with reference to the construction methodology set out in Part C; predicted traffic volumes and historic crash data.

30.2 Operational Transport Effects

The Project will deliver significant transport improvements in terms of state highway and local road safety, resilience, and travel times. It will also provide benefits for community connectivity and active modes, and opportunities for enhanced public transport. These improvements, and associated benefits are described below.

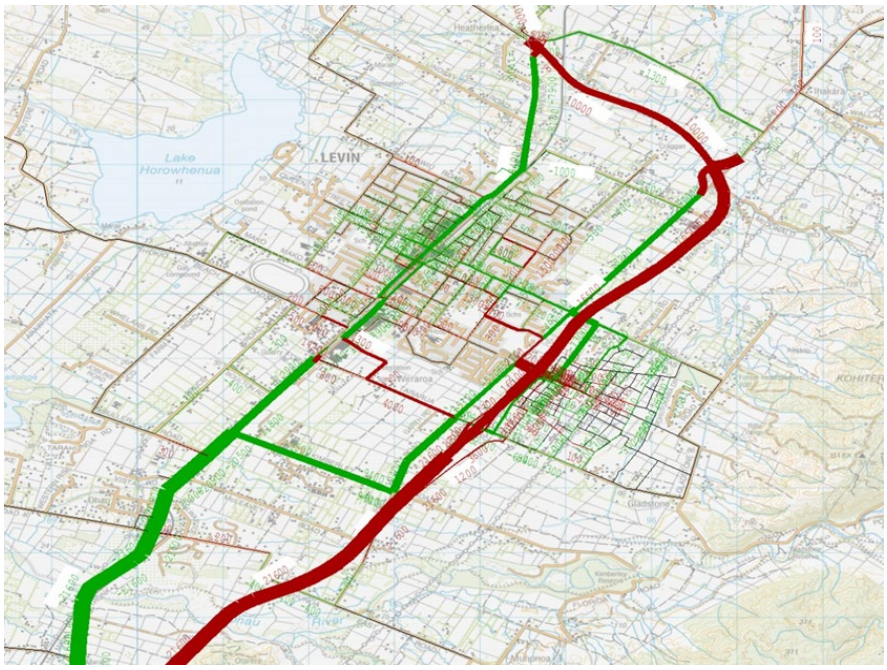
30.2.1 Traffic volumes

The project will result in significant transfer of traffic off the current road network and onto the new highway in the vicinity of the Proposed PC4 as follows:

- Without the project, traffic volumes on SH1 in Taitoko/Levin are expected to be around 19,000 vpd in 2029, but with the project will reduce this to 14,400 vpd. Heavy vehicles are expected to reduce from 1,520 vpd to 860 vpd.
- Without the project, traffic volumes on SH57 north of Queen Street are expected to be around 13,000 vpd in 2029, but with the project will reduce this to 6,000 vpd. Heavy vehicles are expected to reduce from 1,430 vpd to 480 vpd.
- Traffic volumes on Queen Street immediately west of SH57 are expected to be around 14,000 vpd in 2029, but with the project will reduce this to 10,000 vpd.
- Traffic volumes on Tararua Road immediately west of SH57 are expected to be around 6,000 vpd in 2029, but with due to the Tararua Interchange proposed as part of the project this will increase to 10,000 vpd.

The forecast shift in traffic volumes is illustrated in Figure 15 (where green indicates a reduction and red indicates an increase). SH1 between Ōtaki and Taitoko/Levin is forecast to have the largest volume shift of 21,500 vehicles per day. The Ō2NL Project is designed to accommodate such volumes. This volume shift results in reduced delays and congestion on SH1 that, in turn, makes side road access significantly easier. 27 of the 28 side roads that access the existing state highway network are predicted to operate at a LOS D or better. The Keepa Street intersection is predicted to operate at LOS F, with a delay of 72 seconds, compared to the 'do minimum' scenario delay of 146 seconds.

Figure 15 – Forecast Shift in Traffic Volumes (2039)



30.2.2 Delays

The volume shift set out above results in reduced delays and congestion on the entire stretch of SH1 bypassed by the project that, in turn, makes side road access significantly easier.

In 2029, for SH1 and SH57 in the vicinity of urban Taitoko/Levin, four intersections are predicted to have delays of over 50 seconds (Level of Service E) for vehicles turning onto the highways in the PM peak. Implementation of the Ō2NL Project would mean only one intersection had significant delays.

This situation is exacerbated in 2039, where twelve intersections would have delays over 50 seconds without the project, with some delay over 2½ minutes. With the Project, again only one intersection would have a significant delay, and this is predicted to be approximately 60 seconds. The 'do minimum' side road delays are illustrated in Figure 16.

30.2.3 Safety

The safety improvements included in the 'do minimum' scenario (that is, the current SIP works on SH1 and SH57) will result in the following safety benefits when compared to an 'existing' scenario:

- A saving of approximately 25-30 DSIs per 5 year period;
- a slightly improved KiwiRAP star rating for the existing state highways, albeit offset in part by volume growth and the removal of passing lanes, so that SH1 and SH57 remain at 3 stars;
- with a reduction in speed limit, the state highways will operate with the PSL equalling the SAAS for 73% of their length, compared to 15% for the existing situation;
- in terms of the IRR, 5% of the SH1 and SH57 road sections will be classified as 'Medium High', compared to 15%; and

- in terms of collective safety risk or ‘Collective Risk’, 43% of road sections will be classified as ‘Medium High’ risk or higher, compared to 48%.

Figure 16 – ‘Do Minimum’ Side Road Delays (2039)

In addition to the safety benefits realised by the implementation of safety improvements included in the ‘do minimum’ scenario, the ‘Project’ results in further benefits derived from the superior design of the Project and the reassignment of traffic to the new highway. These safety benefits of the ‘Project’ scenario, when compared to the ‘do minimum’ scenario, are summarised as follows:

- saving of approximately 25-30 DSIs per 5-year period following the highway opening (this represents a 60% reduction in DSIs on the state highway network and a 33% reduction on local roads);
- an improved KiwiRAP star rating, with the Ō2NL Project to be designed to target a KiwiRAP 4 star or higher (that will align with PP2Ō and provide a seamless road environment);
- a significant reduction in the percentage of the current highways classified as ‘Medium’ or ‘Medium High IRR (reducing from approximately 84% to 39%);
- a significant reduction in the proportion of road sections classified as ‘Medium High’ Collective Risk or higher (reducing from 43% to 15%); and
- given that the Ō2NL Project has been designed with a design speed greater than the proposed speed limit, the Project will not result in a travel speed gap and, in addition, the reduced traffic on the existing state highways will similarly reduce the travel speed gap.

30.2.4 Resilience

Under the ‘do minimum’ scenario, the following changes are anticipated:

- an increase, due to climate change, in closure frequency and duration due to flooding;
- the continued threat of closure of the four structures that are at risk from storm and earthquake events; and
- a 30% reduction in network closures due to crashes as a result of safety improvements (although this is tempered by the growth in traffic volumes over time).

The existing state highway network (including under the ‘do minimum’ scenario) does not have an appropriate alternative route and is vulnerable to closures caused by crashes, weather events and other natural hazards.

The Project will deliver significant resilience benefits because the existing state highway network is retained as an alternative route such that there is redundancy in the network. Further, the potential for closure of the existing SH1 due to crashes is also substantially reduced.

In addition, the modern design and specifications of the Ō2NL Project, which is designed to withstand 1:100 AEP rain events (in 2130 and allowing for climate change) and 1:1500yr[41] earthquake events, significantly reduces the vulnerability of the new route to closures.

30.2.5 Travel times

The modelled travel times for the PM peak for the 'do minimum' scenario and 'Project' scenario are set out in Table 15.

Table 15 – 2039 Modelled 'Travel Times

Route	2018 TomTom Travel Time	2039 'Do Minimum' 75th Percentile Growth	2039 'Project' 75th Percentile Growth
Ōtaki to SH1 north of Taitoko/Levin	26.0 minutes	31.1 minutes	21.3 minutes
Ōtaki to central Taitoko/Levin	16.9 minutes	21.7 minutes	17.3 minutes
Ōtaki to SH57 north of Taitoko/Levin	22.8 minutes	27.9 minutes	16.6 minutes

For the 'do minimum' scenario, travel times are predicted to increase by between 20-30% or 5 minutes per journey, due to population growth and increases in traffic volumes.

Under the 'Project' scenario, the forecast travel time savings are significant, with 10-minute reductions for trips from Ōtaki to north of Taitoko/Levin when comparted to the 'do minimum' scenario. Journey time reliability is also forecast to improve as a result of additional capacity that eases congestion and mitigates disruption events (for instance, breakdowns).

30.2.6 Community connectivity

Under the 'do minimum' scenario community connectivity is predicted to worsen as traffic volumes increase. In addition, as traffic volumes increase, severance can become worse as roads act as a barrier to movement by (due to volumes, flow or safety concern) preventing people from making a trip that crosses the road.

The Ō2NL Project includes the reinstatement of most of the local roads that are intersected by the new highway. This retains community connectivity. Further, improved side road access onto the current SH1 will also provide for improved connectivity within the community.

In terms of travel times and distances between different points in the community, in some cases the Project will result in increased travel distances, but not increased travel time. This is due to the Ō2NL Project providing a new, faster, link in the transport network, plus reduced congestion on existing roads.

30.2.7 Property connectivity

The 'do minimum' scenario does not result in any further changes to property access (beyond those identified in relation to community connectivity).

Similarly, the NoR for the Queen Street East to Tararua Road section will not result in any significant change to property access with all accesses either being retained or re-instated, and any remaining land will have opportunities for further access provision through Tara-Ika development opportunities.

[41] Damage Control Limit State.

30.2.8 Public transport

With the reduction in traffic using the existing SH1, public transport services on this route will benefit, both in terms of improved travel times and reliability. The Ō2NL Project will also provide opportunities to increase public transport frequency and attractiveness along the existing SH1, as well as on the new highway if desired.

30.2.9 Active modes

The Project includes a SUP that is designed to be accessible for communities along the route and to provide for both commuter and recreational use. The SUP b will be directly accessed from Levin/Taitoko via Queen Street East or Tararua Road.

The SUP runs on the eastern side of the new highway through the area subject to this NoR providing access to the majority of the Tara-Ika Growth Area.

Further, the shift in traffic volumes away from the existing state highway network will improve safety for active modes on these routes and particularly in the Levin/Taitoko town centre.

30.3 Construction Traffic Effects

While a construction method has not been developed, the general nature and scale of effects of construction traffic are well understood based on similar offline highway projects (including PP2Ō). Construction activities that may have a traffic and transport impact are:

- the arrival and departure of construction workers in light vehicles and/or mini-vans/buses (where possible);
- delivery of plant and materials using heavy commercial vehicles;
- the movement of overweight and/or over-dimension loads;
- the movement of bulk earthworks; and
- construction activities close to a live highway.

Because the Project is generally constructed off-line, the need for temporary road closures and diversions is limited. It is further assumed that construction activities will be generally undertaken during daylight hours on 6 days per week.

In terms of the traffic effects of construction activities on road users (including vulnerable users), the number of vehicle movements associated with the arrival and departure of construction workers in light vehicles or buses is considered to be small compared to the flow on existing SH1 and SH57. The adverse effects of worker light vehicles on the efficient and safe performance of SH1 and SH57 is assessed as negligible when compared to the existing traffic environment (including existing delays for right-turning vehicles onto SH1). That said, the impact of heavy commercial vehicles (“HCV”) while still comparatively small in number of movements, could potentially be more pronounced in respect of increased delays and the associated safety hazard. Roundabouts planned at the intersections of SH57 and Queen Street East and SH57 and Tararua Road will alleviate this impact adjacent to the area subject to this NoR.

Similarly, construction traffic may have a minor adverse impact on the efficiency and safety of local roads (including for vulnerable users) where construction traffic uses the local road to provide construction access, or more generally where construction vehicles cause delays on the local road network.

30.4 Measures to Avoid, Remedy or Mitigate Adverse Effects

The potential adverse effects of construction traffic on the transport network, and road users (including vulnerable users) can be appropriately addressed by setting out practices and other mitigation measures in a management plan. These measures may include:

- limiting or otherwise directing the movement of truck and trailer units and the transportation of over-dimension components;

- the identification and management of site accesses and HCV movements in a manner consistent with the Waka Kotahi Code of Practice for Temporary Traffic Management;
- the use of warning, directional and information signs;
- temporary speed restrictions at particular locations;
- trip and material source planning to minimise journey distances and reduce transport costs;
- the use of internal haul routes;
- worker briefing and driver education;
- temporary and separated facilities for vulnerable users;
- consider opportunities for early or staged construction of components (including private property accesses); and
- an accompanying community and road user communication programme.

30.5 Summary of Traffic and Transport Effects

The Ō2NL Project as a whole has significant positive traffic and transport effects. These benefits are realised primarily as a result of the design and standard of the new highway alongside the retention of, and reduction of traffic on, the existing state highway network. The significant positive effects (when compared to the 'do minimum' scenario) include:

- safety benefits as a result of:
  - a reduction in DSIs on the state highway network and connected local roads;
  - an improved KiwiRAP star rating;
  - a significant reduction in risk (in respect of IRR and 'Collective Risk') over sections of the existing state highway network;
  - a reduction or elimination of the travel speed gap (between the speed limit and the safe and appropriate speed) on the new and existing state highways;
- improved resilience in respect of the existing and new highways together (and also in terms of the way they operate separately);
- improved travel times, including for trips between Ōtaki and Levin/Taitoko, and more widely in respect of journeys across the region; and
- reduced delays on the state highway network and for side roads that access the existing state highways.

In terms of community and property connectivity, adverse effects are considered minor on the basis that connectively both across the Ō2NL Project, and for the individual properties directly impacted by the Project, is maintained.

The Project also has positive effects in terms of provision for active modes through the purpose-built SUP providing connectivity and accessibility (including for the Tara-Ika Growth Area) and through improved safety for vulnerable users as a result of the separated facility and reduced traffic on the existing network.

Construction-related traffic can have an impact on the safety and efficiency of the transport network, primarily as a result of HCVs and increase traffic movements. In this instance, and because of the high traffic volumes on the existing transport network, the potential impacts are generally limited to the impact of heavy vehicles causing, or increasing, delays. The impacts of construction traffic are able to be appropriately mitigated through construction management practices and measures that can be embedded through a management plan.

31. Noise and Vibration

31.1 Introduction and Assessment Methodology

The potential effects of operational road-traffic noise; operational road-traffic vibration; and construction noise and vibration have been identified and assessed by:

- investigating the existing noise and vibration environment;
- calculating future road-traffic sound levels associated with the Ō2NL Project;
- determining areas that may experience adverse effects from road-traffic noise, with reference to relevant criteria;
- predicting road-traffic vibration effects on the basis of previous measurements; and
- identifying houses where construction noise and vibration may be at risk of exceeding relevant criteria.

31.1.1 Operational road-traffic noise

Operational road-traffic noise effects have been assessed with reference to:

- the District Plan;
- New Zealand Standard NZS 6806:2020 Acoustics – Road-traffic noise – New and altered roads ("NZS 6806");
- long term health impacts;[42] and
- reduction in amenity values.

Assessments have relied on computer noise modelling of existing and future road-traffic noise levels using the *Calculation of Road-Traffic Noise*[43] ("CRTN") method in accordance with standard industry practices.[44]

District Plan and NZS 6806

There is no National Environmental Standard for operational road-traffic noise, and the District Plan explicitly excludes the sound of vehicles on roads from rules or standards that establish general noise limits[45]. To address operational road-traffic noise, Waka Kotahi has adopted New Zealand Standard NZS 6806 for use on its projects.

NZS 6806 provides for road-traffic noise to be assessed with reference to a year 10 to 20 years after the opening of the road. In this case 2039 is the year that is used, with an expected opening year of 2029. NZS 6806 provides performance targets for noise received at Protected Premises and Facilities ("PPFs") and requires assessment of options for noise mitigation (often including barriers and low-noise road surfaces) that may be included as part of an integrated design process. PPFs include houses in all areas and visitor accommodation in residentially zoned areas.

NZS 6806 sets absolute rather than relative criteria to protect people living near roads from sleep disturbance and to provide a reasonable level of residential amenity. NZS 6806 sets different criteria depending on whether a road is new or altered. This partly addresses the existing environment, and likely constraints to mitigation.

Criteria from NZS 6806 in terms of noise levels at relevant PPFs are set out in Table 16.

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[42] Assessment of health impacts is new in the context of infrastructure projects in New Zealand and, as such, should be considered cautiously and as supplementary to the assessment approaches that are typically used for projects of this nature.

[43] Calculation of Road Traffic Noise, UK Department of Transport and the Welsh Office, ISBN 0115508473 (1988).

[44] Waka Kotahi NZ Transport Agency, Guide to state highways noise mapping, v1.0 Draft (November 2013)

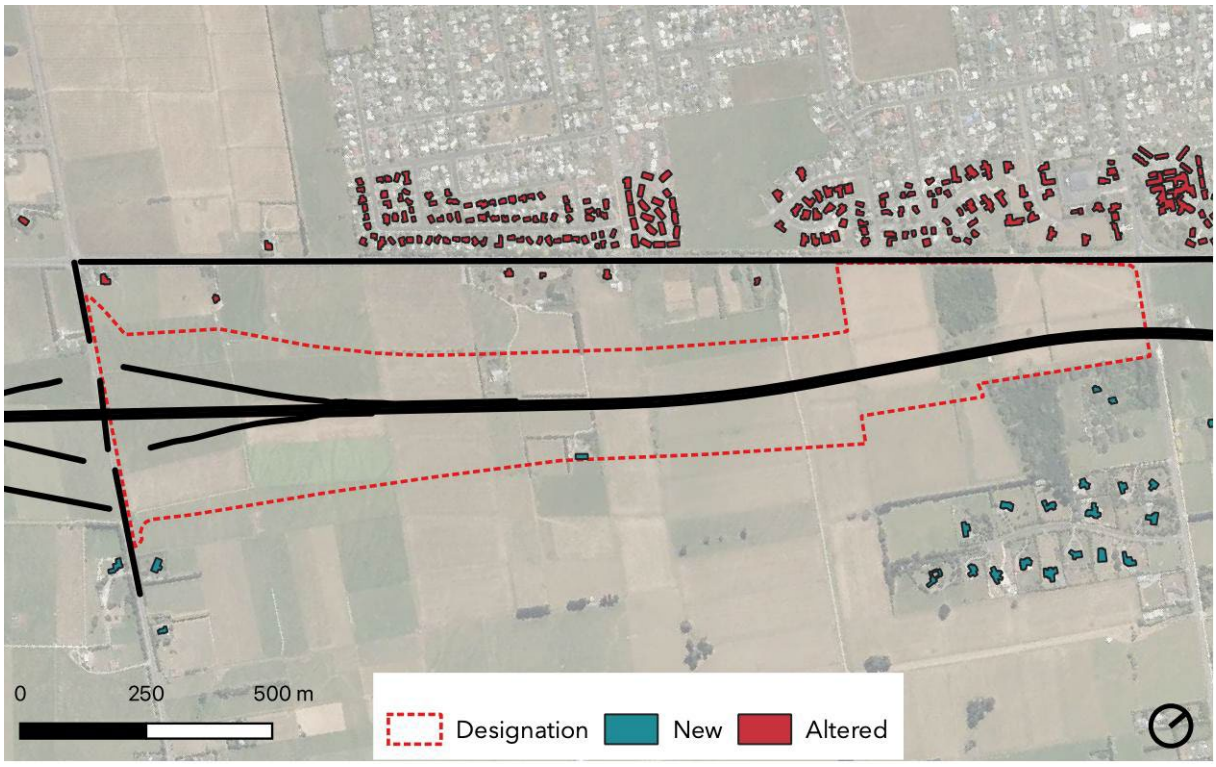
[45] HDC Rule 19.6.8 d (vi).

Table 16 – NZS 6806 Road Traffic Noise Threshold Criteria

NZS 6806 Category	Where applied	New road	Altered road
Category A (primary)	External	57 dB $L_{Aeq(24h)}$	64 dB $L_{Aeq(24h)}$
Category B (secondary)	External	64 dB $L_{Aeq(24h)}$	67 dB $L_{Aeq(24h)}$
Category C	Internal	40 dB $L_{Aeq(24h)}$	40 dB $L_{Aeq(24h)}$

The Ō2NL Project is defined as a new road for the purposes of NZS 6806, however noise emissions have been considered for both the new road and Arapaepae Road/SH57. For many PPFs, road-traffic noise from SH57 is, and will remain, the dominant source of noise. Therefore, in this instance, it is appropriate to apply the altered road criteria. For this reason, all of the PPFs west of SH57 and within 100m to the east of SH57 have had the altered road criteria applied as shown in Figure 16.

Figure 17 – Application of New and Altered Road Criteria at PPFs



NZS 6806 requires consideration of road-traffic noise at all PPFs within 100 metres of a road in an urban area defined by Statistics New Zealand, or within 200 metres of a road in a rural area. The area between Tararua Road and Queen Street East is classified as an urban area. The assessment of effects of the proposed designation is more conservative than this and includes all dwellings where noise from either the existing or future state highway network would exceed 50 dB $L_{Aeq(24h)}$. In open areas this can extend up to 350 metres from the road.

In accordance with NZS 6806, noise effects on possible future (unbuilt) PPFs do not need to be considered, unless they have building consent. Waka Kotahi has made enquiries with HDC to identify any unimplemented building consents for new houses within 200 metres of the proposed designation.

Long term health effects

Health effects from road-traffic noise are assessed with reference to the World Health Organisation 'Noise Guidelines for the European Region (2018)' ("WHO Guidelines"). The WHO Guidelines note that there is a correlation between road-traffic noise and high annoyance, sleep disturbance and ischaemic heart disease.

High annoyance and sleep disturbance can be caused directly by road-traffic noise. Noise levels above 50 dB $L_{Aeq(24h)}$ are considered to produce an increased risk of adverse health effects.

Health impacts can only be assessed on a population basis and the consequence of exceeding the criterion at a single property cannot be determined.

Reduction in amenity

A qualitative assessment has been undertaken to understand how the road-traffic noise may affect how people use their outdoor and indoor living spaces.

31.1.2 Operational road-traffic vibration

There are no relevant New Zealand Standards or National Environmental Standard, and no relevant district plan rules that manage operational road-traffic vibration.[46] Consistent with Waka Kotahi guidance[47], a Norwegian Standard, NS 8176[48] has been applied. NS 8176 establishes a recommended criterion of 0.3mm/s $v_{w,95}$ for road-traffic vibration from new roads.

31.1.3 Construction noise and vibration

The District Plan[49], requires as a condition for a permitted activity that construction, maintenance and demolition work shall be measured, assessed, managed and controlled in accordance with the provisions of New Zealand Standard NZS 6803:1999 Acoustics – Construction noise ("NZS 6803"). This also forms the basis of Waka Kotahi guidance[50].

NZS 6803 sets out guideline criteria and management methods for construction noise. Table 17 sets out the criteria that apply to the Ō2NL Project (being greater than 20 weeks construction duration).

Table 17 – NZS 6803 Construction Noise Criteria (External)

Day	Time	$L_{Aeq(15min)}$	L_{AFmax}
Occupied PPFs (as defined in NZS 6808:2010)			
Weekdays	0630h - 0730h	55 dB	75 dB
	0730h - 1800h	70 dB	85 dB
	1800h - 2000h	65 dB	80 dB
	2000h - 0630h	45 dB	75 dB
Saturdays	0630h - 0730h	45 dB	75 dB
	0730h - 1800h	70 dB	90 dB
	1800h - 2000h	45 dB	75 dB
	2000h - 0630h	45 dB	75 dB
	0630h - 0730h	45 dB	75 dB

[46] The District Plan includes Policy 10.3.12 that relates reverse sensitivity effects and directs land use activities protect themselves from vibration from state highways.
[47] NZ Transport Agency (2013) *Technical memorandum NV3 State highway noise and vibration management*.
[48] Norwegian Standard NS 8176:2017 *Vibration and shock – Measurement of vibration in buildings from land-based transport and guidance to evaluation of its effects on human beings*.
[49] HDC Rule 19.6.8 (c).
[50] NZ Transport Agency (2019) State highway construction and maintenance noise and vibration guide, August 2019, Version 1.1.

Day	Time	$L_{Aeq(15min)}$	L_{AFmax}
Sundays and Public Holidays	0730h - 1800h	55 dB	85 dB
	1800h - 2000h	45 dB	75 dB
	2000h - 0630h	45 dB	75 dB
Commercial and industrial receivers			
All	0730h – 1800h	75 dB	
	1800h – 0730h	80 dB	

In terms of construction vibration, there are no rules in the District Plan and there are no relevant New Zealand Standards or National Environmental Standards. In the absence of any standard, Waka Kotahi has developed construction vibration criteria based on standards from other countries,[51] as set out in the following Table 18. The criteria relate both to perception of vibration resulting in disturbance for people or annoyance (Category A) and also to potential cosmetic damage to buildings (Category B).

Table 18 – Construction Vibration Criteria

Receiver	Details	Category A	Category B
Occupied PPFs	Night-time 2000h - 0630h	0.3 mm/s ppv	1 mm/s ppv
	Daytime 0630h - 2000h	1 mm/s ppv	5 mm/s ppv
Other occupied buildings	Daytime 0630h - 2000h	2 mm/s ppv	5 mm/s ppv
All other buildings	Vibration - transient	5 mm/s ppv	BS 5228-2* Table B2
	Vibration - continuous		BS 5228-2* 50% of table B2 values

*BS 5228-2:2009 'Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration'

These vibration criteria provide a tiered approach to the difference in vibration sensitivities of people and buildings to be considered.

31.2 Operational Noise Effects

The predicted road-traffic noise for different scenarios are included in **Appendix III**. The scenarios are as set out in Table 18.

31.2.1 Positive effects

The Project as a whole will result in positive noise effects to those communities located adjacent to SH57 (and SH1) due to a reduction in vehicle movements generally and the rerouting of heavy vehicles onto the Ō2NL highway. This includes PPFs located generally adjacent to Arapaepae Road/SH57 and the Tara-Ika Growth Area.

In all, the reduction in noise levels adjacent to existing SH1 and SH57 is assessed as a moderate positive effect.

[51] British Standard BS 5228-2 and German Standard DIN 4150-3.

Table 19 – Predicted Noise Levels

Figure	Scenario
Figure 1	Existing state highway network (2019).
Figure 2	The future state highway network (2039) without the Ō2NL Project.[52]
Figure 3	Ō2NL Project (2039) without specific noise mitigation, but including a standard low-noise surface (Epoxy Modified Open Graded Porous Asphalt ("OGPA"))
Figure 4	Ō2NL Project (2039) with noise mitigation.

HDC's 'Transforming Taitoko/Levin Town Centre Strategy' identifies that a pleasant acoustic environment is an important component of improving the vibrancy of the area. The reduction in traffic on SH1 through Taitoko/Levin (as set out earlier in respect of transport effects), and particularly a reduction in heavy vehicles, will improve the character of the noise environment in this area and is assessed as a minor positive effect.

31.2.2 Adverse effects

For PPFs west of the proposed designation, the road-traffic noise will remain dominated by noise from Arapaepae Road/SH57. To the east of the proposed designation, without specific noise mitigation, the Category A criteria from NZS 6806 will generally be achieved at 65 metres from the anticipated road edge. The western building of 'Ashleigh' (at 1024 Queen Street East) is identified as a PPF in Figure 16. However, it is now confirmed that this building is not a PPF. In any case, the predicted noise level is 58 dB $L_{Aeq(24h)}$, which is Category B.

The PPF at 248 Tararua Road is predicted to receive noise levels of 59 dB LAeq(24h), which is also Category B. However, this noise exposure is from vehicle movements along Tararua Road east of the proposed designation, rather than from the Ō2NL Project.

With the exception of the two PPFs described above (noting that the 'Ashleigh' building is now confirm as not being a PPF), predicted noise levels are within 'reasonable' ranges as defined by NZS 6806. That said, it is anticipated that the change in the noise environment may have a significant adverse effect on some people. It is also likely to affect peoples' level of enjoyment and how they use inside and outside spaces. This includes PPFs located in Redwood Grove.

In terms of potential health impacts, the only PPF to the east of the proposed designation exceeding the 50 dB $L_{Aeq(24h)}$ criterion is 249 Tararua Road. Other PPFs on Arapaepae Road/SH57 remain above 50 dB, but this is not due to road-traffic noise from the Ō2NL highway (and, as set out above, noise levels for these PPFs will reduce as a result of the Ō2NL Project). Health impacts can only be assessed on a population basis, that is the consequence of exceeding the criterion on a single PPF cannot be determined.

In respect of the road surface, the anticipated approach to construction will mean that an interim chipseal surface will be installed and used for the first year that the Ō2NL Project is operational, and before an OGPA surface is practicably able to be laid. This will result in noise levels being up to 6 dB higher during this first year and, as a result, will have a moderate temporary adverse effect.

31.3 Operational Vibration Effects

Vibration from road-traffic (particularly heavy vehicles) has the potential to cause disturbance for people near roads, particularly roads in poor condition.

Road-traffic vibration generally achieves compliance with the NS8170 criterion of 0.3 mm/$s_{vw,95}$ at greater than 15 metres from the edge of a new road and some new roads have shown compliance at much shorter distances.

[52] This includes speed reductions along SH57 as part of the Safety Improvements Programme ("SIP").

All PPFs are located considerably more than 15 metres from the indicative edge of the new road and, therefore, the Project does not give rise to adverse operational vibration effects.

Several PPFs located within 15 metres of Arapaepae Road/SH57 likely currently experience road-traffic vibration. The reduction in heavy vehicles on the existing road network should result in an improvement in operational vibration in terms of fewer events, and therefore positive effects. A reduction in magnitude is also likely due to speed reductions.

31.4 Construction Noise and Vibration Effects

Activities associated with the construction of the Ō2NL Project will include extensive earthworks, paving and compaction, piling for structures and construction related traffic movements.

Construction activities may cause temporary daytime disturbance to nearby residents, but most people should be able to continue normal domestic activities with only minor adjustments. Any night works near PPFs will be limited to short-term works in particular locations, such as where the works are required to connect to the existing road network. Therefore, the potential for sleep disturbance is limited.

Compliance with the 70 dB $L_{Aeq(15\ min)}$ daytime construction noise standard will generally be achieved for all receivers located more than 50 metres from construction works. Adverse effects of construction activities may extend beyond 50 metres and it is anticipated that the effects of daytime works at a distance of 200 metres from the works will be minimal. It is also expected that vibration from construction will be in accordance with the vibration standards (German Standard DIN4150 / BS 5228).

Increased noise screening and management can be required to manage effects at distances less than 50m from some construction activities, such as the construction of structures. In this regard, there are a number of PPFs, generally located west of Arapaepae Road/SH57 near its intersection with Queen Street East, that are closer than 200 metres and 50 metres of the designation boundary.

31.5 Measures to Avoid, Remedy or Mitigate the Adverse Effects of Noise

31.5.1 Operational noise

While the Project has been developed with an assumption that the road will be surfaced with a low-noise road surface (standard 30mm thick OGPA), it is proposed that the surface that is laid through the section of the Ō2NL Project that is subject to this NoR is a 50mm thick OGPA, which is conservatively assumed to provide approximately 2 dB benefit over the standard 30mm thick OGPA. The 50mm depth OGPA has been assessed by the Waka Kotahi road-surface research programme as the best performing surface.

The use of this surface also responds to Proposed PC4 and the anticipated future urban development of the area. That is, the proposed 50mm depth OGPA surface is fit for a highway traversing an urban area. In this regard, it is also noted that the provisions of Proposed PC4, which provide for the development of the Tara-Ika Growth Area, include a requirement for future noise sensitive activities to achieve standards in respect of indoor noise levels in order to appropriately manage potential impacts in terms of health and amenity values.

A plan showing noise levels for the network with the Ō2NL Project with mitigation (2039) is included in **Appendix III**.[53]

With the inclusion of proposed mitigation, the predicted noise level at the western building of 'Ashleigh'(1024 Queen Street East) reduces to 56 dB $L_{Aeq(24h)}$, which is Category A.

Options to mitigate the adverse effects of the temporary chipseal surface are limited. The potential impact can be controlled by confining the duration that the temporary surface is in place and through timely and clear communication with the communities that are affected.

Subject to the mitigation proposed, the adverse effects of operational noise are assessed as reasonable and appropriate for a project of this nature and scale in the context of the existing environment.

[53] 'Predicted Noise Levels (2039) High performance road surface Figure 2'.

31.5.2 Construction noise and vibration

The potential adverse effects of construction noise and vibration will be managed through practices and measures set out in a management plan, or management plans, that embed normal good practice[54]. Such management plans providing a framework that includes measures, procedures and standards to manage construction activities and construction traffic to mitigate any adverse effects. Such measures may include temporary screening and the avoidance of site access points, heavy vehicle routes, yards, laydown areas and fixed plant close to PPFs.

Subject to good practice management to mitigate the noise and vibration effects of construction activities, the adverse noise and vibration effects caused by construction activities are assessed as minor.

31.6 Summary of Noise and Vibration Effects

Operational road-traffic noise on the Ō2NL highway will increase the amount of road-traffic noise experienced by people living to the east of the proposed designation. This will have an adverse effect. This adverse effect can be mitigated in part by a high performance low-noise road surface being laid. With this mitigation the residual adverse noise effects are considered reasonable and appropriate.

Construction related noise and vibration may have an adverse effect of PPFs located within 200 metres of construction activities. Subject to good practice management embedded through a management plan or plans, such adverse effects are assessed as being minor.

Because the proposed low-noise road surface will be constructed following a year of operation of the road, there is a temporary moderate adverse noise effect as a result of greater noise from the initial chipseal surface.

The Project will not result in any adverse operational vibration effects on existing PPFs located near the Ō2NL highway. Conversely, the Project will have a minor positive effect on PPFs near existing SH1 and SH57 as a result of reduced traffic using these routes (and therefore reduced vibration).

Similarly, noise levels received by PPFs near existing SH1 and SH57 will reduce as a result of the Project. Further, a reduction in traffic (and particularly heavy vehicles) on SH1 will result in a minor positive effect on the character of the noise environment in the Levin town centre.

32. Landscape and Visual

32.1 Introduction and Assessment Methodology

The potential adverse effects of the Ō2NL Project on landscape and visual amenity values have been assessed in a manner consistent with 'Te Tangi a te Manu Aotearoa New Zealand Landscape Assessment Guidelines', which has been adopted by Tuia Pito Ora/NZ Institute of Landscape Architects.

Landscape character is assessed with reference to the following:

- A desk-top review, including a review of reference works relating to the area;
- field work; and
- targeted engagement, including the Project Iwi Partners.

This assessment process has been carried out in tandem with the ongoing development of the CEDF to provide continuity in assessment and responses.That approach ensures alignment with the CEDF in terms of identifying existing landscape values; addressing potential adverse effects on landscape values; and taking opportunities to enhance and improve outcomes for landscape values.

[54] As set out in the NZ Transport Agency guidelines.

Issues considered include:

- the appropriateness of the alignment of the proposed designation (compared to alternatives);
- the nature and degree of effects on landscape character and amenity values (with respect to physical, perceptual and associative aspects); and
- visual effects from public and private views, including during construction.

Effects on landscape character and amenity values are assessed with reference to the Levin-Koputaroa Landscape Domain that is identified and described in the District Plan. Effects on landscape values are assessed on a seven-point scale of magnitude from very-low to very-high.

The assessment of visual effects from houses has been based on desk top analysis and road-side observation. Factors influencing the degree of effect include distance to the formed highway, apparent orientation of house, the nature of the highway at each location, the extent of screening, and elements in the foreground and middle-ground that would contribute to perspective depth.

Construction effects may include biophysical effects (such as increased potential for sediment discharge during the time surfaces are open) and visual effects of construction. The latter are likely to be experienced from similar locations as permanent effects but are typically amplified, especially from residential properties, by the raw appearance of works and heavy construction machinery.

32.2 Visual and Landscape Effects

32.2.1 Landscape character and visual amenity values

The Ō2NL Project introduces a major element of infrastructure into the existing environment and an area that is earmarked to change from a rural to urban character. As such, the Project will have some adverse effects on landscape character and visual amenity values. Effects arise from:

- the scale of the works footprint;
- the geometric constraints or requirements that establish the horizontal and vertical alignment of the highway;
- the severance because of limited access;
- the visual effects of highway elements, such as safety barriers and signs; and
- the visual effects associated with volumes and speed of traffic (including lights at night).

These effects have been addressed in the first instance by the avoidance of effects on more sensitive receiving environments through the selection of an eastern route.

The highway will result in moderate adverse visual effects with the road and traffic being at-grade and visible. There would also be some localised effects on the legibility of the Kei te Whakahoro te Whenua landform[55] because of fills placed on the surface, although the legibility of broad landform surface would be retained.

The highway will also have an impact on connectivity, with the lack of a straight alignment connecting Queen Street East and Levin resulting in relatively poor connectivity and legibility, while at Tararua Road moderate-low connectivity is retained. The structures necessary to provide connectivity contribute to visual effects to some degree.

The section of highway subject to the NoR is parallel to SH57 and, while the current landscape is mostly open pasture, the proposed Tara-Ika Growth Area is planned to occupy both sides of the new highway. This includes a relatively narrow area of urban development planned between the Ō2NL highway and the existing SH57. The proposed alignment parallel with Arapaepae Road best enables the Tara-Ika Growth Area to be developed as a coherent area and connected with Levin along the two existing connections (Tararua Road

[55] The landform Kei te Whakahoro te Whenua (the great landslide) from which Horowhenua takes its name. This is the landform that gently slopes between the Arapapepae foothills of the Tararua Ranges to Waipunahau (Lake Horowhenua).

and Queen Street East), particularly when compared to alignments within the Growth Area, but further to the east.

32.2.2 Visual effects from public and private views

Public views

Visual effects from public viewpoints are an aspect of landscape character and amenity values considered above. The proposed highway will be an integral part of the Horowhenua landscape. The highway will be part of everyday life and people will experience the Horowhenua landscape from the highway. Any public places that might warrant special assessment (such as reserves, scenic lookouts, historic places, cemeteries, wāhi tapu) appear to be well separated from the alignment. While the proposed designation does pass close to 'Ashleigh', which has historic values, the effects on that property are considered in respect of private views below.

Private views

An assessment of visual effects for individual properties has been undertaken. This assessment estimated the nature and magnitude of visual effect having regard to factors such as distance, orientation, screening and extent to which elements in the intervening landscape might contribute to a sense of separation (perspective depth). The effects range in magnitude from 'very low' to 'very high' and 'removal' (that is, those properties within the highway footprint).

Reducing potential visual effects on properties was a factor that was considered in the MCA processes for selecting the preferred detailed alignment within the proposed designation. However, it is acknowledged that a highway through a settled landscape such as the Horowhenua will unavoidably require the removal of houses and result in adverse visual effects on other properties.

The proposed designation is across open farmland between the Tararua Road and Queen Street East. Visual effects will be experienced from around 10 rural dwellings in this area, a cluster of around 21 lifestyle properties in the Redwood Grove area, and some 60 urban properties on the eastern edge of Levin. The degree of visual effect was assessed for each of these groups is set out in Table 20

Table 20 – Visual Effects – Private Views

Property Type	Adverse Effects						
	Very high	High	Mod-high	Mod	Low-mod	Low	Very low
Rural dwellings	2	4	1	3		1	
Lifestyle properties				5		16	
Urban properties eastern edge of Taitoko/Levin			8	12	39		

The 2 rural dwellings assessed as likely to have 'very high' visual effects are within the designation and close to the alignment. The 4 assessed as 'high' are in the vicinity of the Tararua Road Interchange, where adverse effects would be amplified by the scale and elevation of structures at that location. 'Ashleigh' was assessed as mod-high, while the highway will be reasonably close to the house, it will not encroach into the curtilage and the visual effects will be moderated by foreground vegetation. The 3 rural dwellings assessed as 'mod' are approximately 190m – 270m from the highway and visual effects will be softened by other factors such as middle-ground trees and buildings.

The 5 lifestyle properties assessed as likely to have 'mod' visual effects are those on the south-west corner of Redwood Grove. They are approximately 280m from the proposed alignment and views will be softened by foreground vegetation. The other 16 properties in the Redwood Grove area have greater separation, and views will be softened by intervening houses and vegetation, especially the vegetation at 'Ashleigh'.

Urban properties on the eastern edge of Taitoko/Levin are on the opposite side of the existing SH57 from the proposed designation. The properties back on to the existing highway, and in many cases have high fences and buffer planting. The 8 properties assessed as likely to have 'mod-high' visual effects are those near Queen Street that are closer to the proposed alignment (<200m) and with open outlook. Those assessed as likely to have 'mod' or 'low-mod' effects are further away and have middle-ground trees, bush, and buildings that will soften views.

The description of effects set out above is confined to dwellings between Queen Street East and Tararua Road. Properties north and south of these roads respectively would also experience visual effects, but such effects would be influenced to a greater degree by sections of the Ō2NL Project beyond the extent of the NoR.

The assessment above is also based on the existing environment and it is noted that views of the highway from existing dwellings are in most instances likely to be screened by new urban development if Proposed PC4 becomes operative. In that event, visual effects from private dwellings would become confined to a narrower but more densely settled corridor of new houses either side of the Ō2NL highway. Greatest visual effects would be experienced from dwellings closest to the highway. At the same time, those dwellings most affected would help screen the highway from properties further away.

32.2.3 Construction visual effects

Potential adverse effects on the biophysical landscape arising from construction activities may include potential effects on bush through careless clearance. In this instance, the retention of bush is proposed with the retention being achieved through a management plan approach.

Visual effects during construction include the raw appearance of earthworks, and construction clutter (construction yards, machinery, safety barriers, stored materials). Such effects cannot be completely avoided, but are limited by their temporary nature. While construction activities will have adverse visual effects for properties near the works, the wider community is also likely to take an interest in such activities and keep track as the work progresses.

32.3 Measures to Avoid, Remedy or Mitigate the Adverse Effects and Summary of Effects

The potential landscape and visual impacts of the proposed designation will be mitigated by:

- revegetating between 'Ashleigh' and the highway edge to provide a buffer to the existing bush and the heritage site;
- revegetating between the stand of bush within the designation (near SH57) to the edge of the highway to provide a buffer to the existing bush; and
- planting a band of low/buffer vegetation (such as flax) alongside the highway with planting plans and specifications setting out approaches and appropriate species to soften the views of the highway and traffic, while maintaining visual connections, particularly to the Tararua Range.[56]

A new highway through a landscape such as Horowhenua must have some unavoidable adverse landscape and visual effects. Potential adverse effects have been avoided in the first instance through the selection of an eastern route and refinement of the location of the proposed designation through the Tara-Ika Growth Area. As such, the proposed designation follows what is considered a 'best fit' from a landscape perspective at a district and local level.

While the 'best fit' assists in reducing adverse effects the potential visual and landscape character adverse effects in the area subject to this NoR are moderate. Mitigation measures will help soften the highway and reduce the magnitude of the effects described above, however, the residual adverse effects on landscape and visual amenity values remain moderate.

Where the proposed designation results in adverse visual effects on individual properties that are 'moderate' effects or greater, mitigation is proposed and may include, screening of the highway and traffic, softening

[56] Such planting may be carried out in conjunction with low bunds, and would be integrated with noise walls if required.

(filtering) of views, and emphasising foreground to increase perspective depth. In many instances, such mitigation will be provided by the large-scale planting proposed for landscape reasons (set out above) and will not require additional planting to address visual effect on individual properties.

33. Social

33.1 Introduction and Assessment Methodology

Social effects have been assessed with reference to the International Association of Impact Assessment ("IAIA") Social Impact Assessment Guidelines and Waka Kotahi guidance, which acknowledges and works alongside the IAIA guidelines and provides New Zealand and transport infrastructure context. The social impact methodology is summarised in Figure 17.

Figure 18 – Social Impact Methodology Overview

Social impacts have been considered at a regional community, local community and sub-local community level and can be generally described as:

- Regional community – the wider area connected by the whole of the Ō2NL Project, being the region around SH1 and SH57 between Palmerston North and Wellington.
- Local community – The Taitoko/Levin township area that is traversed by the part of the Project covered by this NoR.
- Sub-local community – The neighbourhood located close to the part of the Project covered by this NoR, being the community east of Taitoko/Levin.

With reference to the IAIA guidance, the Project is assessed in respect of the potential impacts on:

- Way of life –
    - living: how people carry out and get to their activities of daily living including access to and between communities and places where people live, work and play; and
    - sustaining oneself: how people sustain themselves both financially and providing for themselves including viability and feasibility of economic production.
- Community cohesion – connection and participation in the community and stability; character, culture and identity; and services and facilities in a community.
- Health and wellbeing – a state of complete physical, mental, social and spiritual wellbeing, as opposed to being limited to the absence of disease or infirmity.

- Quality of living environment – sense of place, identity and valued community characteristics.

33.2 Construction Social Impacts

The following Table 21 sets out the potential social impacts of the construction of the Project, focussing on the area subject to this NoR:

Table 21 – Construction Social Impacts

Potential Social Impact	Description of Social Impacts of Construction Activities
Way of life	Construction activities may have a 'way of life' impact on the three directly affected landowners within the section of the Project subject to this NoR to the extent that works may disrupt access to and from, and the use of their property. At a local and sub-local level, where local roads are used for construction access, and where works occur on, or near, local road the way people live, work and play may also be disrupted as a result of increased traffic and delays due to physical works. For the section of the Project subject to this NoR, this impact is assessed as a low to moderate negative impact. In terms of 'sustaining oneself; the construction of the Project as a whole may generate retail activity within local communities, including for local cafes and other businesses or supplementary services. Further, construction may provide local employment, training opportunities. These impacts are assessed as low to moderate positive impacts of the Project as a whole.
Community cohesion	Potential impacts on community cohesion are not evenly distributed across the Project as a whole. It is generally anticipated that directly affected landowners and those living adjacent to the Project may be impacted as a result of feeling isolated from the wider local community because of different experiences of the process, concerns and levels of impact. The construction of the Project as a whole may also have an impact on community cohesion through the people moving away due to property acquisition and changes to established community connections. Because there are few directly affected and adjacent properties within the section of the Project subject to this NoR, the potential impact of construction activities on community cohesion is assessed as low.
Health and wellbeing	Construction activities have the potential to impacts on health and wellbeing as a result of construction noise and vibration and construction related traffic. The impacts of construction noise and vibration have been considered earlier in Part G. This assessment concludes that, subject to good practice management, construction noise and vibration effects are minor. Construction traffic and construction activities on local roads may also result in safety impacts for road users, including pedestrians and cyclists. The impacts of construction traffic have been considered earlier in Part G. Subject to the appropriate management of construction traffic (having particular regard to the safety of more vulnerable road users), the impact of construction traffic is assessed as minor.
Quality of living environment	At a sub-local level, and during working hours, construction activities will result in temporary disruption to the living environment. The level of this impact will depend on the duration of construction, level of activity and degree of change from current environment. The degree of change is not considered significant for those who currently live near existing SH1 or SH57. Having regard to the existing environment and temporary nature of activities, the potential impact of construction activities on the quality of the living environment at a local and sub-local level is assessed as being low.

33.3 Operational Social Impacts

33.3.1 Regional community

The following Table 22 sets out the potential social impacts of the Project on the wider region. It is noted that, at this scale, the effects of the Project within the section subject to this NoR are not discernible from the impacts of the entire Ō2NL Project. It is noted that there are no material negative social impacts at a regional scale.

Table 22 – Regional Social Impacts (Operational)

Potential Social Impact	Regional Social Impacts
Way of life	Within the region people travel between Ōtaki and Taitoko/Levin regularly for recreation, education, specialist health services, work opportunities and connecting with friends and family. Currently people report long travel delays particularly around public holidays and at times where there are accidents on SH1 and SH57 in this area. Businesses are also dependent on travelling between Ōtaki and Taitoko/Levin, including for moving goods and being accessible for employment. Current delays and issues with resilience of the existing section of SH1 and SH57 cause disruptions to business operations both in terms of efficiency and function and have economic consequences. If employees cannot reliably travel to work there is an impact on the ability of people within the region to sustain themselves financially. The Project provides improved route resilience, travel time savings and reduced delays. Combined, these improvements will have a positive impact for people within the region who are reliant on this corridor for work and for the transportation of goods being able to sustain themselves by reliably reaching their destinations and reducing travel time. Depending on the communities' frequency of use and reliance on this route, the new corridor will have moderately positive way of life impacts at the regional level.
Community cohesion	The SUP has the potential to become a key community resource as it will link to shared path facilities; extend the regional cycle network and connect communities using alternate forms of transport. This will have a low positive social impact at the regional level (with benefits accruing to the small portion of the community that will use the SUP at these distances).
Health and wellbeing	The predicted reduction in DSIs on the state highway network and local roads will result in a reduction in social impacts through a reduction in the likelihood and severity of outcomes of crashes. This is assessed as a high positive impact on the health and well-being of the region.

33.3.2 Local community and sub-local community social impacts

The following Table 23 sets out the potential social impacts of the Project at a local and sub-local level.

Table 23 – Local and Sub-Local Social Impacts (Operational)

Potential Social Impact	Local and Sub-Local Social Impacts
Way of life	The Project will have low to moderate positive impacts as a result of a more efficient and reliable connection for movements between local communities that, in turn, has social benefits through improved access to work, services, friends/family and recreation. The Project will also reassign traffic from existing SH1 and SH57, reducing congestion and resulting in positive impacts for the local communities. The reduction of traffic through the Taitoko/Levin town centre will improve the function of the town centre and will make travel across and through the town centre easier. This has a high positive impact on the way people work, educate, live and play. The improved resilience, travel time savings and reduced delays as a result of the new highway will have a moderate positive impact on people reliance on the Ōtaki to Taitoko/Levin corridor for work and the transportation of goods – allowing them to sustain themselves. At a sub-local level, the section of the Project subject to this NoR will result in moderate impacts to way people live and work/sustain themselves as a result of vehicle journey diversions. Changes to the noise environment will impact on the enjoyment and use of outdoor areas (and possibly those that work from home). The SUP has a moderate positive impact on way of life, including how people sustain themselves by providing an attraction for locals and visitors, along with being an alternative transport option. At a local level, the Project will have a very low to low negative impact on way of life as the Taitoko/Levin community adjusts to changes in commercial activity. Over time this impact will reduce to negligible.
Community cohesion	The Project reassigns traffic from existing SH1 and SH57, reducing traffic volumes and resulting in moderate to high positive impacts on community cohesion.

Potential Social Impact	Local and Sub-Local Social Impacts
	The SUP provides opportunities for social connection and unplanned interactions and has a low to moderate positive effect on cohesion and character. The Project will result in a less permeable 'boarder' to the east of Taitoko/Levin due to its size, function and connections that is assessed as having a low to negligible effect at a local level. At a sub-local level, the section of the Project subject to this NoR will result in properties between the Ō2NL Project and SH57 being severed from the eastern community (that they likely connected to) and also Taitoko/Levin given the existing SH57 'barrier'. Overtime (and particularly wit the future development of the Tara-Ika Growth Area) a new sub-community may form. This is assess as having a low negative impact.
Health and wellbeing	The Project results in a reduction of 25 – 30 DSIs. This reduces future social impacts and is assessed as having a high positive impact on the health and wellbeing of communities. The provision of an SUP will contribute to the physical, mental, social and spiritual wellbeing of users and, being separated, will provide a safe walking and cycling environment. At a sub-local level, members of the immediate community experience daily stress associated with navigating SH57 intersections. It is anticipated that reduced traffic volumes will reduce this impact.
Quality of living environment	The reduction of traffic, and particularly heavy vehicles, through Taitoko/Levin will have high positive amenity impacts and along SH57 will have a low to moderate positive impact. The SUP provides an amenity for the local community. It will also provide access to communities and resource and has the potential to provide a visual buffer. At a sub-local level, those currently residing near SH57 already experience a noiser, busier environment. For these people, there may be benefits associated with reduced traffic and improved safety on SH57, however for most houses the outdoor living faces away from SH57 to the more rural landscape that will be changed by the presence of Ō2NL creating a more urbanised environment. For those east of the proposed designation, there will be a change in the quality of the living environment for those closest it will be moderate and with distance reduce to minor this is generated from visual and noise impacts and the way people experience their outlook and the outdoor environment (pre-mitigation). In this regard, it is noted that change in this environment is anticipated as part of the development of the Tara-Ika Growth Area.

33.3.3 Summary of operational social impacts

The following Table 24 summarises the social impacts of the NoR (prior to an mitigation).

Table 24 – Summary of Operational Social Impacts

Way of Life		Community Cohesion		Health and Wellbeing		Quality of Living Environment	
+ve	-ve	+ve	-ve	+ve	-ve	+ve	-ve
Regional							
Moderate positive	-	Low positive	-	High positive	-	-	-
Local							
High positive	Very low to low negative	Moderate to high positive	Very low to negligible negative	High positive	-	High positive	-
Sub-Local							
High positive	Very low to low negative	Moderate to high positive	Low negative	High positive	Negligible	Low to moderate positive	Low negative

33.4 Measures to Avoid, Remedy or Mitigate Adverse Effects

In terms of measures to manage potential construction social impacts, the measures and procedures recommended in respect of construction traffic, noise and vibration (embedded through management plans) provide appropriate mitigation of construction related social impacts. However, in addition, the following further measures will further reduce potential adverse impacts:

- planned and responsive community communications set out in a management plan and delivered by a liaison person (or people) to provide up-to-date information, respond to queries and complaints and assure interested or impacted parties there is a point of contact to address any concerns;
- consider possible opportunities for Project-based employment and/or training, particularly for those who may have lost jobs as a result of Project disruptions;
- consider signs to inform road users of services Taitoko/Levin to encourage through traffic to make stops to mitigate loss of business of those reliant on passing trade; and
- engage sub-local and local communities in aspects of local design and enhancement opportunities where the community can actively participate.

As above, the measures to mitigate transport, noise and landscape and visual effects will serve to mitigate many of the identified social impacts identified. In addition, the following further measures will reduce adverse impacts:

- ongoing local community meetings for the first 3-6 months following the opening of the highway to aid in the transition and provide a contact point if initial issues arise;
- engage sub-local and local communities in aspects of local design and enhancement opportunities where the community can actively participate;
- engage local communities in processes to address the future of SH57 and SH1; and
- the provision of pedestrian facilities on local roads connections.

34. Terrestrial Ecology

34.1 Introduction and Assessment Methodology

The potential impacts of the NoR on terrestrial ecology have been identified based on the following:

- the Environment Institute of Australia and New Zealand ("EIANZ") Ecological Impact Assessment Guidelines ("EcIAG");
- a review of google earth imagery to identify properties that may contain indigenous woody vegetation habitats;
- the identification, mapping, and description of vegetation types using the Atkinson framework, with amendments to allow application to more rapid, qualitative techniques;[57]

Habitat types have been coded and mapped (including 'human landscape' components such as gardens and roads) using aerial imagery.

Terrestrial ecological values, and the 'level of effects' of the NoR on these values, have been assessed using the EcIAG. The EcIAG assessment involves the following four steps:

[57] The Atkinson framework is widely used in New Zealand and applicable to all terrestrial ecosystems and provides a consist approach to identifying habitat types and understanding that habitat's intactness, age (for vegetation types), and associated ecological values.

- assigning the level of ‘ecological value’ to areas of vegetation, habitats and species scored on a scale of ‘Negligible’ to ‘Very High’ with the following criteria used to assess value:
    - representativeness of the habitat, including species assemblages;
    - rarity/distinctiveness: whether the area represents a threatened ecosystem, and the rarity of the species the area supports;
    - diversity and pattern: biotic and abiotic diversity;
    - ecological context: how the area contributes to ecosystem functioning through its relationship with the surrounding landscape;
- assigning the ‘magnitude of effect’ of the NoR after all efforts to avoid, remedy, or minimise potential adverse effects have been implemented, with the ‘magnitude of effect’ being a measure of scale of the effect and the predicted level of change from scored from ‘Negligible’ to ‘Very High’ based on:
    - level of confidence in understanding the expected effect;
    - spatial scale of the effect;
    - duration and timescale of the effect;
    - the relative permanence of the effect;
    - timing of the effect in respect of key ecological factors;
- determining an overall level of residual effects that cannot be avoided or minimised for each habitat or species value using a matrix approach combining ‘ecological values’ and ‘magnitude of effect’ with ‘level of effect’ scored from ‘Negligible’ to ‘Very High’;
- using the level of residual effect to guide the recommended type and quantum of offsetting or compensation measures to adequately address adverse effects (with reference to the outcomes directed by the relevant planning provisions).[58]

34.2 Operational Terrestrial Ecology Effects

Most of the part of the Project that is subject to this NoR traverses pasture and cropping land, with smaller areas occupied by houses and associated gardens, and road and rail corridors. Figure 6 identifies ecological systems within and adjacent to the proposed designation. The habitat attributes and values of the systems within the proposed designation are set out in Part B. Similarly, Part B sets out the indigenous fauna that is present, or likely to be present, in the designation (and immediate locality). In this regard it is noted that, while the ecological systems shown on Figure 6 are either adjacent to or included in the proposed designation, they will be retained and left generally undisturbed.

Potential adverse effects of the NoR on terrestrial ecology may include:

- the loss of indigenous and exotic vegetation and their associated habitat values for indenougs fauna (also a construction related effect);
- increase in edge effects for vegetation and habitats retained;
- increase in abundance of pest plants and/or pest animals in habitats retained;
- reduced ecological connectivity between natural areas, with potential adverse effects on populations of less-mobile species;
- effects of road lighting on indigenous habitats and fauna; and

[58] The EcIAG equate ‘not more than minor’ effects to a ‘very low level of effect’ and suggest that ‘low or very low’ level of effect are not normally of concern. The EcIAG notes that effects that are of ‘very high’, ‘high’ or ‘moderate’ level of effect require further management (including offsetting or compensation where relevant.

- roadkill of indigenous fauna

Each of these effects is described and assessed in the following Table 25.

Table 25 – Operational Effects on Terrestrial Ecology

Potential Effect	Description and Assessment
Loss of terrestrial habitats	The direct loss of terrestrial indigenous vegetation and habitats, and some exotic vegetation and habitats, will reduce the extent of habitat available for indigenous biodiversity. While the ecological systems shown on Figure 6 are either adjacent to or included in the proposed designation, the ecosystem is to be retained and left generally undisturbed. As such there is no direct loss of vegetation and habitat.
Effects on adjacent vegetation and habitats that are to be retained	Removal of forest or scrub vegetation results in an increase in edge effects for adjacent vegetation that is retained. Edge effects can include increases in light, wind and associated desiccation of habitats, which in turn are often associated with biotic changes such as increases in pest animals, reduced habitat quality for invertebrates that prefer moist conditions, and/or changes to vegetation structure and composition. A review of edge effects in New Zealand forests concluded that they are likely to extend 50 to 100 metres into the forest habitats. All areas of woody indigenous vegetation within or partly within the Ō2NL Project (including the areas within and adjacent to the area subject to this NoR) are less than 50 metres in width at their narrowest point. As such, all forest, scrub and treeland habitat affected by the Ō2NL Project comprises edge habitat and the Ō2NL Project will therefore not result in any interior areas of forest and scrub becoming edge habitat.
Effects on an increase in pest plants and or pest animals in habitats to be retained	Construction can result in the arrival of new pest species to a site (for example, through earthwork machinery acting as vectors) and the facilitation of pest establishment. If areas subject to earthworks are not adequately rehabilitated with topsoil and plantings, pest plants can become abundant on roadsides, with adverse effects on adjacent indigenous habitats, or exotic habitats that are beneficial to indigenous fauna (such as lizards), by acting as a source of propagules. Key pest plant species that could increase in abundance along the highway edges, with associated adverse effects on ecological values, include pampas, radiata pine, gorse, barberry, blackberry and tutsan. It is likely that increased numbers of predatory mammals and birds will use the new road as a corridor and this may impact on lizard populations as a result.
Effects on ecological connectivity	The potential effects on ecological connectivity primarily relate to how the change from pasture or cropping habitats to road surfaces could alter the movement of species. Most of the indigenous species that can cross areas of pasture or cropping land (that is, common mobile bird species by flying) are also likely to cross the proposed highway in a similar manner. The potential movement for less mobile species across pasture gaps (for example, ornate skink crossing 110 metres of pasture between the two forest habitats idenfied in Figure 6 is less well understood. At times between grazing when the intervening grass may grow too long, movement of fauna between the remnants may occur. Permanent slivers of rough grassland (that is, farm track and road verges) are also likely to act as corridors for dispersal and genetic interchange between sub-populations. If these species do cross pasture between forest remnants and stop doing so if the intervening land use changes to a road surface, the NoR may further isolate small populations of some invertebrate species. This may then increase the risk of localised population extinction.
Effects of road lighting on indigenous habitats and fauna	Lighting of roads can have adverse effects on fauna species. The nature of these effects is primarily determined by the extent, type, and duration of lighting, and the vulnerability of the adjacent habitats or fauna to artificial lighting. Artificial lighting can cause changes to habitat use by some species (that is, attraction to, or avoidance of, lit areas) and can also cause mortality of fauna (that is, of flying invertebrates) if the lighting used generates hot surfaces or by attraction to the road with consequently vehicle collisions. In this instance, lighting is limited to intersections and as such, mid-section lighting is not proposed across the section of the Project subject to this NoR.
Roadkill of indigenous fauna	Direct mortality of flying terrestrial invertebrates is likely to occur through collisions with vehicles using the road. Mortality can be high within invertebrate groups crossing roads with increasing impacts on populations with high traffic volumes.

Potential Effect	Description and Assessment
Injury to and/or mortality of indigenous birds	Traffic related mortalities may occur where birds fly over the road during low light, poor weather conditions, or at night. Birds of prey (for example, kahu and karearea) may not perceive the threat of oncoming vehicles. The placement of roadside stormwater ponds may also increase the risk of bird strike of species which cannot gain flight altitude due to the close proximity of the road to the waterbody.

34.3 Construction Terrestrial Ecology Effects

Noise, vibration, vehicle movements and lighting during construction may result in the temporary and ongoing disturbance to sensitive indigenous fauna. The effects are likely to be greatest where construction activities occur directly adjacent to higher value habitats that are to be retained.

Temporary disturbance from construction may reduce or prevent the use of habitats for bird nesting during the construction period and may result in changes to lizard and invertebrate behaviours (home range, movement, reproduction, and foraging) and physiological state. This effect is likely to be greatest where the boundary of active construction is adjacent to indigenous habitats, and dissipate over the first 100 metres of the adjoining habitat.

Vegetation removal and earthworks is likely to result in the injury or death of some indigenous birds, lizards and invertebrates. Lizards are less mobile and their first response is to ‘hide’ when disturbed, and therefore become injured or are killed when clearance occurs.

Construction activities can also lead to soil compaction, which may reduce the presence of terrestrial invertebrate habitat through potential increased run off and decreased soil porosity. This may result in direct mortality to ground dwelling invertebrates.

34.4 Measures to Avoid, Remedy or Mitigate Adverse Effects

The potential adverse effects of the proposed designation on terrestrial ecology can be appropriately addressed by setting out construction management practices to avoid, minimise and mitigate potential impacts in a management plan.

Any residual adverse effects that are assessed as Moderate, High or Very High (that is, the level of adverse effect after measures to minimise, remedy or mitigate) are addressed by biodiversity offset or compensation measures. For the section of the Project subject to this NoR, indirect effects on high value indigenous habitats (for indigenous lizards and land snails) will require additional ecological management.

These measures may include:

- physical marking of the extent of vegetation the be retained;
- pest plant control, where appropriate, to address construction activity that may otherwise introduce pests and disturbance effects on adjacent areas of habitat that will be retained;
- the establishment of, and restoration of, alternative habitats close to the footprint prior to construction, to provide continuity of habitats at locations where Threatened or At Risk fauna affected by the road are present;
- the salvage of lizards at key sites in the construction footprint to minimise mortality of individuals; and
- approaches to monitoring effectiveness and outcomes.

Where effects relate to activities managed by Horizons (in respect of regional council function), these effects will be addressed as part of the applications for resource consent and similarly addressed by a management plan approach.

34.5 Summary of Effects on Terrestrial Ecology

Ecological input during the earlier design phases has resulted in all indigenous forest remnants being avoided by the Ō2NL Project. Most of the proposed designation comprises exotic grassland with a small area of terrestrial habitat being present (and retained).

While the habitat area within the proposed designation is retained, construction and operation will have indirect effects on a habitat of high ecological value, and particularly the fragmentation of some fauna populations. Most indirect effects can be addressed by mitigation actions (embedded in a management plan) so that residual effects are Low to Moderate.

Residual effects can similarly be addressed through a management plan approach, developed in collaboration with key stakeholders, to set out measures to achieve a net gain for affected habitats and species, including monitoring to track progress of implementation and outcomes.

35. Historic Heritage

35.1 Introduction and Assessment Methodology

Built heritage and historic heritage values have been identified through a desktop and field assessment including:

- a review of the HNZPT New Zealand Heritage List/Rārangi Kōrero;
- a review of the Horowhenua District Plan heritage schedule (Schedule 2);
- a literature review; and
- visual inspections of potential historic heritage within one kilometre of the proposed designation.

The potential effects on built heritage and historic heritage values have been assessed in accordance with national and international best practice and particularly with reference to the following:

- Waka Kotahi 'Guide to Assessing Cultural Heritage Effects for State Highway Projects' dated March 2015;
- International Council on Monuments and Sites ("ICOMOS"), Charter for the Conservation of Places of Cultural Heritage Value, 2010;
- HNZPT's Sustainable Management of Historic Heritage Guidance (2007).

35.2 Effects on Historic Heritage

No heritage sites, buildings or structures have been identified within the proposed designation, either through historical information, previous investigations, or field survey. Further, there are no statutorily listed heritage sites, buildings or structures located in the vicinity of the proposed designation.

While not 'listed' or located within the proposed designation, 'Ashleigh', which is located approximately 68 metres immediately to the east of the proposed designation at 1024 Queen Street East, has been assessed as being of regional significance, based on a site inspection and on research by historian Val Burr.

Dense mature vegetation screens views from the property at the northern, eastern and southern boundaries and as a result there is no adverse visual effect on the heritage values of 'Ashleigh'. It is possible that the Project will be visible from isolated areas on the western boundary and as such the Project will result in a minor adverse effect. Noise from the construction and operation of the Project may also have a minor adverse effect on the heritage values of 'Ashleigh'.

35.3 Measures to Avoid, Remedy or Mitigate the Adverse Effects

While the potential adverse effects of the Ō2NL Project on 'Ashleigh' are assessed as being minor, the following measures provide for monitoring, remediation and mitigation of potential adverse effects:

- continuous vibration monitoring (during and post construction) that is supervised by a conservation architect and includes response measures to prevent or remedy any damage caused by Project related vibration;
- subject to owner agreement, the planting of trees on the western boundary of the property to screen views of the Project; and
- the implementation of recommended noise mitigation within the designation.

With these measures in place, it is concluded that the adverse effects of the proposed designation are less than minor.

36. Archaeology

36.1 Introduction and Assessment Methodology

Known and potential, or unknown, archaeological sites have been identified through:

- a review of the HNZPT New Zealand Heritage List/Rārangi Kōrero;
- a search of the NZAA online database;
- a review of the District Plan heritage schedule (Schedule 2);
- data collection, including:
  - historic survey plans;
  - historic and recent aerial photographs;
  - LiDAR derived topography;
  - close reading of selected historic newspapers, published books and pamphlets;
  - close reading of records of the Native Land Court;
  - engagement with iwi; and
  - observation of selected geotechnical test pits.

The potential effects on archaeological values have been assessed in accordance with the following best practice guidance:

- Waka Kotahi 'Guide to Assessing Cultural Heritage Effects for State Highway Projects' dated March 2015;
- ICOMOS, Charter for the Conservation of Places of Cultural Heritage Value, 2010; and
- HNZPT's Sustainable Management of Historic Heritage and Archaeological Assessment of Effects guidance (2007).

HNZPT's archaeological values framework has been used to determined archaeological values and assess potential effects on those values. This framework uses a scoring matrix to assess six archaeological values and potential effects and identify the importance of a site with a high score indicating national or international significance and a mid-low score equating to regional or local significance.

36.2 Effects on Archaeology

There are no New Zealand Heritage List/Rārangi Kōrero listed sites; NZAA recorded sites or District Plan listed sites within the proposed designation. There is one verified archaeological site ('Ashleigh') and 1 potential archaeological site identified in the vicinity of the proposed designation.

Because 'Ashleigh' is located outside of the proposed designation and will not be physically disturbed by the Project, there is no adverse effect on the archaeological values of this site.

The 1 potential archaeological site is an ancient Māori track through former forest. There is a very low probability that physical remains of this site have survived and, therefore, archaeological remains are not expected to be found. Where an archaeological site is found the adverse effect is expected to be negligible or less than minor.

The Project may have an adverse effect on previously unidentified, or unknown, archaeological sites where such sites are encountered during construction works. However, the area has low archaeological potential because, prior to the late 19th century, the landscape was almost entirely covered in a dense podocarp forest with the main settlements being mostly located in the dune-country to the west of the proposed designation. In addition, any unknown sites are most likely to be encountered adjacent to or in the general proximity of the waterbodies and there are no waterbodies within the proposed designation. Therefore, the probability of an unknown site being encountered is low.

Archaeological sites associated with historic colonial occupation are mostly avoided because the proposed designation is situated to the east of the main settlements where early residential occupation was most concentrated and the proposed designation extent has been shaped to avoid the known late 19th century rural houses and homesteads.

The potential for ongoing (post-construction) adverse effects on archaeological values is expected to be negligible on the basis that any archaeological remains within the new highway's alignment will be found and recovered, recorded or destroyed (as appropriate) during construction, and archaeological sites in the wider proposed designation will be subject to ongoing management and protection.

The Project will result in minor positive effects on archaeological values through aspects of the archaeological and wider heritage landscape being recognised in naming, signs, artworks and design features.

36.3 Measures to Avoid, Remedy or Mitigate the Adverse Effects

The potential for works to disturb unidentified, or unknown, archaeological sites, and any adverse effects associated with such disturbance, can be appropriately managed by an archaeological authority or authorities to be sought from HNZPT. Provision may be made for an interim archaeological discovery protocol until such time as the archaeological authority or authorities are in place. The archaeological authority or authorities will set out a research strategy and management approaches for both identified potential, and unknown archaeological sites including the training discovery protocols.

With an archaeological authority in place, the potential adverse effects of the works on archaeological values is assessed as negligible to less than minor. There is the potential for a minor positive effect associated with new information that may be recovered in the course of any archaeological excavations that may take place.

37. Productive Land

37.1 Introduction and Assessment Methodology

The land resources that have the potential to be impacted by the Project have been determined with reference to:

- recent aerial photography to determine existing land uses; and

- the New Zealand Land Resource Inventory ("NZLRI"), hosted by Landcare Research, to determine whether land is highly productive and highly versatile.

The extent of adverse effects on productive land, and particularly the 'loss' and fragmentation of highly productive land as a result of the proposed designation, has been determined through mapping and analysis of land holdings in conjunction with a calculation of the economic impacts of that loss and fragmentation.

37.2 Effects on Productive Land

The land subject to the proposed designation is highly productive, but not highly versatile. The proposed designation has an adverse effect on productive land through the loss of the ability to use the land for production (market gardening and sheep and cattle farming) and through the fragmentation of land parcels in a manner that impacts on the future productive use of those parcels. Further, the Project may have an impact in terms of the economies of scale of existing productive uses along with the physical disruption or impediments to the operation of productive properties.

At a regional and district level, the area of highly productive land that is no longer available for productive use is small and, as such, the adverse effects of the 'loss' of highly productive land is considered to be less than minor at a district level.

At a property level, the proposed designation has an impact on eight parcels of land held by three different landowners comprising 42.1 hectares of land. Two of these landowners, in particular, will experience a significant reduction (by percentage) of their overall landholding, and this reduction may have an adverse effect on the ability for the properties to be used for production.

That said, all three properties are subject to the Proposed PC4 and it is understood that the landowners are generally supportive of their properties being developed for urban uses in the future. On this basis, it is considered that the productive use of these properties may be 'lost' in any case and the potential adverse effects on the ability to use these properties for a productive use to be minor.

Further, the proposed designation includes land that is required for construction, that is on a temporary basis, and so following construction the extent of the designation will be reduced / narrowed and residual land will becoming available for continued productive use.

37.3 Measures to Avoid, Remedy or Mitigate the Adverse Effects

Because highly productive land is present across much of Horowhenua District, it is not possible for the Project to avoid the 'loss' of the ability to use highly productive land for productive purposes. However, the potential impact of the loss of productive land is assessed as being minor as it represents such a small proportion of the overall.

Options to mitigate potential adverse effects on productive land are limited. Any measures necessary to address subsequent effects on individual property values will be dealt with through the Public Works Act 1981 process.

38. Economy

38.1 Introduction and Assessment Methodology

The potential economic effects of the Project have been assessed using both quantitative modelling and qualitative analysis.

The quantitative analysis uses the following two modelling methods:

- Economic Impact Assessment ("EIA") – quantifies the role of the Ō2NL Project as a whole in terms of Gross Domestic Product ("GDP") and employment and specifically the economic activity generated during construction and the rural production that might be impacted. Market Economics' 'Multi-Regional Input Output Model' ("MRIO") is used for this assessment.

- Retail Impacts Assessment ("RIA") – quantifies the projected change in turnover for Taitoko/Levin town centre and includes a qualitative assessment of centre function and vitality including a consideration of the effects of a service station- based retail node at an interchange. The assessment involves estimating baseline sales; understanding the origin of those sales; defining scenarios for future sales; and undertaking a comparative analysis of the scenarios to determine potential effects. The assessment relates to retail and hospitality, but not service activities.

The qualitative assessment addresses economic impacts that are not readily quantifiable, including Wider Economic Benefits ("WEBs"). This assessment draws on regional, domestic and international case studies.

This assessment adopts a timeframe of 30 years (2021 – 2051) with economic effects expressed in present value ("PV") terms applying a 4% discount rate and is based on growth scenarios set out in district demographic projections.[59]

It is noted that the area subject to the NoR is part of the entire Ō2NL Project that, in turn, is part of the broader suite of projects that make up the Wellington Northern Corridor. This assessment necessarily takes a broad approach while acknowledging that the proposed designation alone does not result in the effects described.

38.2 Economic Effects

38.2.1 Construction economic impacts

The economic effects of construction are influenced by a number of factors including the total budget, the project timing and spatial distribution of expenditure. While the location of spending may vary, the budget and timeframe for the Project will result in economic activity that will have a substantial positive effect on the local economy and community.

Depending on the share of the activity is undertaken by businesses in Horowhenua District, the expected net positive GDP impact on the Horowhenua economy from the construction phase being between $41 million (medium local economic activity) and $125 million (high local economic activity) in PV terms. This would represent an uplift in the District economy of 0.5% to 1.1% in the medium term (10 years). In addition to GDP, the activity will support employment and return income to households.

The economic effects of construction of the Project will be felt in the wider regions with the overall net GDP impact estimated at $1.157Bn to $1.258Bn, sustaining in the order of 11,400 to 11,700 person years of employment. Major shares of these overall impacts would accrue to Wellington region (29% to 39% of the total) and Manawatū-Whanganui region (14% to 25%), with most of the balance to rest of the North Island (28% to 39%). Its current role within the Wellington regional economy suggests that Kapiti Coast economy may see effects in terms of value added at $40-$60m, and employment of 300-500 person years.

38.2.2 Effects on population and household growth

The Ō2NL Project is projected to stimulate additional population growth in Horowhenua as the enhanced accessibility to the large Wellington economy would make Horowhenua more attractive as a place to live and work. This population growth would result in a larger District economy, with more economic activity and employment. While it is difficult to estimate the extent of population growth attributable specifically to the Project, the medium and long-term effects on the economy would be substantial and positive.

38.2.3 Effects on town centres

A reduction in traffic passing through Taitoko/Levin as a result of the Ō2NL Project has the potential to reduce direct access to, visibility of, and sales made by, businesses for which passing motorists are potential customers.

In this regard, the group most likely to reduce patronage of Taitoko/Levin town centre businesses are non-locals passing through Taitoko/Levin. However, this group contributes only 6% of total spending in town centre businesses, and shopping is characterised by lower average spend per person than other consumer

[59] Sense Partners, 'Horowhenua Socio-Economic Projections Summary and Methods: Projections Update Report', May 2020.

segments. Conversely, a large share (79%) of Taitoko/Levin town centre current sales are made to consumers who reside in Horowhenua District and the patterns of these shoppers is unlikely to change substantially as a result of the Ō2NL Project. Similarly, people from outside Horowhenua who visit Taitoko/Levin as a destination (14% of the total) are also unlikely to change their shopping patterns significantly.

Two scenarios of potential impact from loss of passing trade show short term impacts of between -3.3% (if half of the passing trade is lost) and -6.1% (if all the trade is lost, that is, a worst-case scenario). The worst-case scenario effects are expected to be offset by market growth quite quickly – up to 2.7 years in a low growth future, between 1 and 2 years (medium), or less than 1.5 years (high). Those relatively fast recovery periods, combined with the strong underlying market growth which would see town centre sales some 31% above current levels by 2029 (medium growth scenario), indicate that adverse effects on Taitoko/Levin town centre will be minor, and only temporary.

Further, the strong growth in the Horowhenua economy would mean significant potential for new retail businesses to establish and for the town centre's role to expand to better serve the future Horowhenua community. This is, in part, a result of the enabling effects of the Ō2NL Project.

Manakau and Ohau are located south of Taitoko/Levin, with a small number of businesses relying on SH1 traffic for much of their custom, and will be likely to experience adverse economic effects. The effects are predominantly for business owners rather than community dis-enablement.

Effects on other centres in Horowhenua District or Kāpiti Coast District are expected to be very small. Foxton and Shannon continue to be located on SH1 and SH57 respectively and both are expected to be largely unaffected. In Kāpiti Coast District, the effects of trade being diverted from Ōtaki have already occurred as a consequence of the PP2Ō Project. The Ō2NL Project is not expected to increase diverted trade, although will make it faster to travel to Ōtaki from Taitoko/Levin, so there may be some positive economic effects for the centres in Ōtaki as a result of the Ō2NL Project.

38.2.4 Wider economic benefits

Improving the transport connections between Taitoko/Levin and elsewhere is expected to unlock or facilitate a range of other benefits.

They arise primarily from improved accessibility for consumers and businesses having greater ability to 'connect' across space that, in turn, results in changes to the competitive landscape. Those changes have implications for businesses' cost structures, and ability to compete in different markets, and include effects on productivity, employment, competition and regional development that can be summarised as follows:

- **Productivity:** The Project will result in a reduction in travel costs and travel time and will improve reliability. This, in turn, expands the market size and improves cost effectiveness. On this basis the productivity effects of the Project are assessed as being positive and more than minor.
- **Employment:** Improvements in accessibility and connectivity (including reduced travel costs) will increase employment opportunities and as such employment effects are assessed as positive and more than minor over the medium to long term.
- **Competition:** The Project will also enable businesses to more effectively complete over a wider geography. The economic effect of expanded competition is assessed as positive and more than minor over the medium to long term.
- **Regional development:** Reduction in traffic in Taitoko/Levin will improve the character of the town centre that, in turn could result in increased tourism. Further, the Project will enable the provision of greater residential capacity and the potential for improved housing affordability. This is exemplified by the relationship between the Ō2NL Project and the Tara-Ika Growth Area. It is anticipated that the Project will also result in housing demand and therefore stimulate construction activity. Again, effects in respect of regional development are assessed as being positive and more than minor over the medium to long term.

38.2.5 Effects on agricultural and horticultural activity

The Ō2NL Project traverses rural areas and will impact a number of farming operations. Some farms will be disrupted by construction, lose productive land, and some properties may no longer be viable for current farming activities. The potential disruptions and loss of productive land as a result of the proposed designation (within the Tara-Ika Growth Area) has been considered earlier in this assessment with the adverse effects of any disruption to, or loss of, productive land being assessed as minor. Similarly, the resulting economic impact of such loss or disruption is assessed as very minor, particularly given the likely future urban use of the properties subject to the proposed designation.

38.3 Measures to Avoid, Remedy or Mitigate Adverse Effects

No measures are necessary to mitigate the economic effects of the construction of the Project because, with the exception of very minor adverse effects in respect of the disruption to use of productive land, the effects of the construction of the Project are positive.

The potential adverse effects on retail activity in Taitoko/Levin that result from a reduction in spending associated with through traffic are assessed as less than minor and appropriate without mitigation. Those very minor adverse effects may be further mitigated (in addition to the access points provided as part of the Project) by the provision of signs and landscaping at approaches to the access points that identify Taitoko/Levin and set out services that are available.

Additional mitigation measures will occur as a natural function of the Ō2NL Project. The reduction in traffic volumes through the town centre will increase the centre's amenity, make parking easier to find, encourage active modes and generally increase the attractiveness of the centre as a retail destination. That may induce locals to direct more of their retail spend to the Taitoko/Levin town centre, rather than leaving Taitoko/Levin to shop in other places.

38.4 Summary of Economic Effects

The Ō2NL Project (as a whole) will result in positive economic effects at the local, sub-regional and regional level as a result of both the construction of the Project, and its ongoing operation. The positive effects of construction are related to the impacts of construction related expenditure, while the operation of the Project will stimulate strong population and economic growth, and enhance the performance of Taitoko/Levin town centre, in the medium to long term.

Some adverse effects may arise during both the construction and implementation phases, particularly short-term effects in relation to retail spending in Taitoko/Levin. However, these adverse effects on the economy will be less than minor, and measures, such as signs and landscaping, can mitigate these effects.

39. Property and Network Utilities

The NoR has a direct impact on property and assets located within the proposed designation. For those properties where land is required either permanently or for construction, the acquisition or lease of land will be undertaken by the Crown through the PWA process. The PWA establishes acquisition and compensation processes and as such, the acquisition of land is not considered further here.

The NoR has a direct impact on three private property owners. A limited number of residences are adjoining or within 200m of the proposed designation. The effects on these properties, and their occupants, have been addressed above in relation to social impacts, traffic and transport effects, property access, productive land, noise and vibration effects and impacts on natural values (landscape, visual amenity, and terrestrial ecology).

The NoR will also have an impact on network utilities and infrastructure located within or near the proposed designation. This infrastructure includes telecommunications and electricity supply infrastructure and municipal infrastructure including local roads and water supply.

Consultation has occurred with most network utility operators to discuss the nature of the infrastructure in the vicinity of the Project and how that infrastructure may be affected, as well as measures to manage potential adverse effects. That consultation is ongoing.

Potential effects on electricity distribution, telecommunications and water supply networks relate to:

- continuity of supply during construction;
- maintenance access during construction;
- disruption due to necessary temporary or permanent relocation of the network/s; and
- machinery strike during construction.

These potential adverse effects are typically temporary in nature and can be managed by Waka Kotahi, in consultation with the network utility owner or operator, to:

- confirm the scope, location and timing of works to relocate network utilities and any measures necessary to provide for the identification of, safety and protection of network utilities;
- maintain permanent practical ongoing access to existing and relocated network utilities, including reasonable and emergency access during construction of the Project; and
- ensure compliance with relevant protocols and standards.

Effects on local roads include disruption during construction and the need for appropriate connection or 'tie-in' at the completion of the Project. As set out above, construction traffic effects are effectively addressed by a management plan mechanism while operational, or 'tie-in' matters are addressed directly with HDC as the asset owner.

40. Natural Hazards

Part B notes that the section of the Project that is subject to this NoR does not traverse any areas that are identified as being subject to a natural hazard risk, although the proximity to the active Northern Ohariu Fault is noted, along with the potential to generate landslides and liquefaction. Similarly, it is acknowledged that the wider area may also be vulnerable to flooding and extreme weather events.

In this regard, natural hazard risks are addressed through the Project being designed and constructed to standards that will minimise damage from design seismic events. In terms of flood risk, extreme weather and climate change, standards applied to the design of slopes and retaining structures, along with future hydrological studies to inform bridge and stormwater design, reflect an appropriate precautionary approach to the effects of climate change. On this basis, and when compared to the existing state highway network, the Project is substantially more resilient to seismicity, flooding and other significant weather event related natural hazards such that the risks and impact of natural hazards is reduced.

41. Management of Effects on the Environment

The following sets out the approach Waka Kotahi proposes to take to the management of effects on the environment, and particularly the measures proposed to avoid, remedy, mitigate, offset or compensate for the actual or potential adverse effects on the environment of the Project. This includes the effects that relate particularly to the section of the Project subject to this NoR, and construction effects.

As described earlier, the process undertaken to identify and refine the Project and the extent of the proposed designation (including as described in Part E) has sought to avoid adverse effects. The effects that have been avoided or minimised through this 'project shaping' approach are summarised earlier in Table 13 . Where it has not been practicable to avoid adverse effects a range or responses and measures will be used to appropriately manage actual and potential adverse effects of the proposed designation and Project as a

whole. Key measures proposed to address actual and potential adverse effects on the environment are discussed throughout Part G, in relation to each category of effect.

The following provides an overview of the approach to the delivery of the Project, including the outline plan processes and future notices of requirement and resource consents.

41.1 Approach to the Delivery of the Queen Street East to Tararua Road Section and Ō2NL Project

This NoR is the first stage of 'consenting' for the Ō2NL Project. The NoR identifies a 'corridor' that traverses the Tara-Ika Growth Area within which a yet-to-be-designed road can be constructed, operated, maintained and improved. Conditions that may be imposed on the designation are a key tool to establish the parameters within which the subsequent design of the Project must be undertaken. These parameters respond to environmental and site constraints; ensure that actual or potential adverse effects of the Project are appropriately managed; and provide for appropriate community and stakeholder engagement over the life of the Project. The conditions also provide for the designations to be reduced in size following the completion of construction.

As set out earlier, the advance designation over the Tara-Ika Growth Area enables the design and development of the two projects to be integrated; protects the Ō2NL route; and provides certainty for stakeholders and the community (including in respect of planning for the Taitoko/Levin town centre).

NoRs will be given for the remainder of the Ō2NL corridor in the near future in both Horowhenua District and Kāpiti Coast District. At the same time, applications will be made for all necessary resource consents from Wellington Regional Council and Horizons and other approvals required to carry out works along the entire Ō2NL Project route, that is, both within the section of the Project subject to this NoR and in the remainder of the Ō2NL Project. It is possible consents for enabling works may be separately sought, while outline plans may be submitted in parallel with, or following, the whole Project NoRs and application for resource consents.

It is desirable, and possible, that the latter planning approvals will 'catch-up' with this NoR and be considered together from a statutory process perspective.

41.2 Addressing Effects of this Notice of Requirement

The following Table 26 identifies the matters addressed as part of this NoR and also the matters that are to be addressed as part of future resource consents from Horizons and Wellington Regional Council (including those matters that are addressed in both). The framework set out in Table 26 demonstrates how the assessment of effects on the environment, and subsequent conditions, reflect the respective council functions set out in sections 30 and 31 of the RMA; and respond by avoiding conflict or duplication.

In order to assess the actual and potential effects on the environment of the Project for the purposes this NoR, that is, the effects of "allowing the requirement", in terms of section 171 of the RMA, the effects are understood:

- with reference to the existing environment, as described in Part B;
- acknowledging that the section subject to this NoR is part of the Ō2NL Project, and the broader suite of projects that make up the Wellington Northern Corridor, and that the potential effects and wider benefits of this NoR are accrued as part of the overall Project and wider transport network so that the assessment necessarily takes a broad approach while acknowledging that the proposed designation alone does not result in the effects described;
- on the basis of realistic and technically feasible road alignments that may be accommodated within the proposed designation, as described in Part C.

Table 26 – Matters Addressed by the Notice of Requirement and Future Resource Consents

Notice of Requirement	Resource Consents
Extent and duration of designation Outline plan content Engagement and community participation Consideration of alternatives Historic heritage and archaeology Social Traffic and transport Landscape and visual Road traffic noise and vibration Network utilities, infrastructure and property impacts	Freshwater ecology Water quality/discharges to water Air quality/discharges to air Works in, on and over the bed of a river (including diversion) Earthworks and land disturbance/discharges to land
Natural character[60] Construction management Terrestrial ecology/indigenous vegetation clearance Cultural values	

41.3 Conditions

Based on the measures to avoid, remedy or mitigate potential adverse effects that are summarised above, a suite of designation and resource consent conditions will be developed to ensure that the potential adverse effects that might arise from the construction, operation and maintenance of the Project will be adequately avoided, remedied or mitigated (with offsetting and/or compensation for ecology effects as necessary).

The suite of conditions will be developed to distinguish:

- district and regional council functions (as set out in Table 26);
- pre-construction, construction and operation phases of the Project;
- district and regional council jurisdictions (that is, for the Ō2NL Project as a whole, not all conditions that apply in Horowhenua District will also be relevant in Kāpiti Coast District).

As noted above, Waka Kotahi favours a scenario where the latter planning approvals for the whole of the Ō2NL Project will 'catch-up' with this NoR. This has advantages in terms of the development of a one set of designation conditions that would apply to the Project in Horowhenua District, as opposed to a suite of conditions being development specifically for the section of the Project subject to this NoR.

It is intended that the proposed suite of conditions will reflect the following:

- conditions are to avoid, remedy, mitigate, offset or compensate for, to an appropriate level, the adverse effects of the construction and operation of the Project;
- all works are to be undertaken in compliance with applicable current New Zealand standards and legislation and where compliance with a standard or other legislation achieves an outcome without the need for a condition, duplication of the requirement in conditions is not necessary;
- in some circumstances, conditions will set an 'envelope' of effects, being the maximum adverse effects that can be caused by the Project and, in turn, enable flexibility for design development and changes to project details in all phases, particularly where there are opportunities to provide positive outcomes;

[60] It is noted that effects on natural character are not relevant to the section of the Project subject to this NoR because the proposed designation is not in the coastal environment and there are no wetlands, lakes or rivers within the area subject to the NoR.

- timeframes; minimum requirements; mitigation actions and compliance are clearly and easily understood by Waka Kotahi, contractors, consent authorities, stakeholders and the public;
- a long-term view so that whole of life commitments are considered and there is flexibility to respond to emerging technologies and potential legislation changes;
- conditions work together alongside the construction programme to avoid delays, disruptions or constraints to construction;
- an integrated and collaborative approach has been, and will continue to be, used to develop the design and the similarly integrated methods and outcomes to avoid, remedy or mitigate actual and potential effects;
- phases are distinguished so that enabling works are 'enabled' and construction related conditions 'fall away' once they are not required;
- Waka Kotahi will maintain on-going engagement with the Councils, tangata whenua, directly affected parties, other key stakeholders and the community;
- Consistency with other Waka Kotahi projects and conditions is achieved (where appropriate); and
- the outline plan process provides for continued refinement to approaches to the management of effects and enables on-going integration, collaboration and engagement.

41.4 The Role of The Outline Plan Process

Section 176A of the RMA sets out the process that Waka Kotahi, as requiring authority, must follow in order to progress a work or project enabled by a designation. The process entails the requiring authority submitting an outline plan or plans to a council. The council then reviews and may provide input (by requesting changes) to the detailed design and construction methodology, amongst other matters. A requiring authority may submit one or more outline plans to reflect project phases or construction sequencing.

An outline plan must detail the following information, in accordance with section 176(3) of the RMA:

- the height, shape, and bulk of the public work, project, or work;
- the location on the site of the public work, project, or work;
- the likely finished contour of the site;
- the vehicular access, circulation, and the provision for parking;
- the landscaping proposed; and
- any other matters to avoid, remedy, or mitigate any adverse effects on the environment.

An outline plan (or outline plans) for the Project will therefore demonstrate and explain how the Project meets the conditions of the designation. The outline plan will also include particular information that is required by the designation conditions and may including management plans and details of further engagement with various parties.

In this way, the outline plan, or plans, will allow for a more comprehensive confirmation of the mitigation of any potential effects once design has progressed and a construction methodology has been finalised. The details within any outline plan will (and must) address the actual or potential effects of the works and how they will be mitigated. For example, the detailed design will necessitate a specific assessment of potential visual effects, especially if structures are introduced, and specific mitigation will be devised (and incorporated into the outline plan) to address these effects. Currently, the assessment is based on generic design elements with generic responses, but with the knowledge that the potential effects can be adequately mitigated.

41.5 Management Plans

In some cases, potential adverse effects of the Project will be addressed through measures, processes and procedures set out in a management plan, or management plans.

The purpose of a management plan is to set out the way in which standards or objectives specified in conditions are to be achieved. A management plan may, for instance, direct how construction activities occur or how mitigation measures are developed and implemented.

The management plan framework will be set out in designation conditions (and future resource consent conditions). This will include the objectives of the management plan; the necessary content; consultation requirements and the manner in which a management plan is provided to the Council(s). Depending on the purpose and content of a particular management plan, Councils may:

- have a role certifying that a management plan meets the requirements of the conditions; or
- request changes through the outline plan process set out above.

Conditions will set out management plan certification or approval processes, including timeframes and specific processes to make minor and immaterial changes without delay.

PART H: STATUTORY ASSESSMENT AND CONCLUSION

42. Overview

The following provides an assessment of the statutory matters that are relevant to the Ō2NL Project under the RMA. The assessment is particularly guided by the requirements of section 171(1), which sets out the matters that must be considered by a territorial authority in making a recommendation on a notice of requirement. As such, this assessment generally follows the hierarchy of applicable planning documents, addresses the other relevant considerations under section 171(1), and concludes with an assessment in relation to Part 2 of the RMA.

This assessment is made with reference to the preceding Parts, including:

- Part E: Consideration of Alternatives;
- Part F: Consultation and Engagement; and
- Part G: Assessment of Effects on the Environment.

The relevant provisions of National Policy Statements, the One Plan and the District Plan are included in full in **Appendix II**.

43. National Policy Statements

43.1 National Policy Statement on Urban Development

Provisions identified as relevant: Objective 1, Objective 4, Objective 5, Objective 6, Policy 1, Policy 6 and Policy 9

At the most broad level, the NPSUD can be described as setting out the objectives and policies for planning for well-functioning urban environments. The Objectives that are relevant to this NoR:

- seek well-functioning urban environments that enable people and communities to provide for their wellbeing and health and safety now and into the future; and
- recognise that urban environments in New Zealand and their amenity values change over time in response to changing needs;
- require planning decisions to take into account the principles of the Treaty of Waitangi/Te Tiriti o Waitangi; and
- require decisions on urban development to be integrated with infrastructure planning and funding; strategic and responsive to proposals that would supply significant development capacity.

The NPSUD Policies that implement these Objectives direct that:

- planning decisions contribute to well-functioning urban environments that have, amongst other matters, good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and
- planning decisions have regard to the planned urban built form of an area anticipated by RMA planning documents, which may involve significant changes to an area and its amenity values and may contribute to development capacity; and
- local authorities take into account cultural values and provide for tangata whenua involvement in decision-making.

In terms of contribution to the outcome of a well-functioning urban environment, the Ō2NL Project provides for safer, more resilient, more efficient and more reliable travel at a community, district and regional level. The Project supports urban growth in Horowhenua and provides transport connections for the community. Further, the proposed SUP, and associated connection provide for active transport modes.

In terms of urban development and future urban form, the NoR for the Queen Street East to Tararua Road Section responds to proposed PC4; provides for the strategic protection of the Ō2NL route; and enables the design and development of the Project and the Tara-Ika Growth Area to be integrated. The Project supports the future growth in Horowhenua by providing capacity on the state highway network.

Through the iwi partnership approach, the development of the Ō2NL Project is underpinned, and responds, to cultural values and, in doing so, takes into account the principles of the Treaty of Waitangi/Te Tiriti o Waitangi.

For the reasons set out above, it is concluded that allowing the requirement contributes to a well-functioning urban environment and is consistent with, and achieves the outcomes sought by the provisions of the NPSUD.

44. Regional Policy Statement – Horizons One Plan (Part 1)

44.1 Chapter 2:Te Ao Māori

Provisions identified as relevant: Objective 2-1, Policy 2-2 and Policy 2-4

Objective 2-1 seeks that:

- regard be had to the mauri of natural resources to enable hapū and iwi to provide for their well-being;
- kaitiakitanga be given particular regard; and
- the relationship of hapū and with the ancestral lands, water, sites, wāhi tapu and other taonga be recognised and provided for.

This Objective 2-1 is implemented by Policy 2-2 that provides for the identification of, and protection of, wāhi tapu, wāhi tupuna and other sites of significance, while Policy 2.4 references a table of 'resource issues of significance to hapū and iwi that "must be addressed".

The approach taken by Waka Kotahi to the recognising and providing for tangata whenua values (including managing potential adverse effects on those values) is set out in Part G of this Report. The approach of Waka Kotahi is one of partnership and collaboration in the development of the Project and the integration of cultural values throughout, including through directly responding to cultural values through project shaping and in approaches to the management of adverse effects. This approach achieves Objective 2-1 and goes beyond the extent of protection required by Policy 2-2, given that the proposed designation is not over any of the areas that Policy 2-2 directs must be protected (clause (a)).

In terms of clauses (c) and (d) of Policy 2-2, the Project provides for the disturbance of unidentified sites of significance through Archaeology Authorities to be sought under the HNZPT Act or otherwise through an interim accidental discovery protocol.

44.2 Chapter 3: Infrastructure, Energy, Waste, Hazardous Substances and Contaminated Land

44.2.1 Infrastructure

Provisions identified as relevant: Objective 3-1, Objective 3-3, Policy 3-1, Policy 3-3, Policy 3-4 and Policy 3- 7

These provisions seek that regard be had to the benefits of regionally and nationally important infrastructure (including the road and rail network as identified in the RLTP) by providing for their establishment, operation, maintenance and upgrading. The Ō2NL Project falls within the definition of regionally and nationally important infrastructure (Policy 3-1) and therefore these provisions are relevant to the NoR.

Policy 3-3 establishes a framework for the management of adverse effects arising from the establishment, operation, maintenance and upgrading of infrastructure. This framework provides for minor adverse effects to be allowed, and more than minor effects to be avoided, remedied or mitigated – taking into account:

- the need for the infrastructure;
- functional, operational or technical constraints that require the infrastructure to be located or designed in the manner proposed;
- whether there are any reasonably practicable alternative locations or designs; and
- whether more than minor adverse effects that cannot be adequately avoided, remedied or mitigated can be offset.

The Ō2NL Project delivers a wide range of benefits including positive transport, social and economic impacts, as set out in Part G. As such, the Ō2NL Project achieves the RPS Objective.

In terms of effects, the Project will result in a range of adverse effects on the environment. These effects are also presented in Part G. The policy framework that applies specifically to infrastructure allows for minor effects and provides for the management of more than minor effects that is somewhat tempered by a range of considerations. In terms of these considerations, the need for the Project is clearly reflected by its NLTP and RLTP priority, while the constraints and alternatives consideration are summarised in Part E and Part G.

Having regard to the measures to avoid, remedy or mitigate adverse effects set out in Part G, it is concluded that the effects of the Project are able to be managed in a manner that is consistent with Policy 3-3.

Objective 3-3, and implementing Policies 3-4 and 3-7, require territorial authorities to integrate provision of infrastructure (including sustainable transport options) with strategic land use development. In this regard, the NoR responds to the further urban form of the Tara-Ika Growth Area; provides for the strategic protection of the Ō2NL route; and enables the design and development of the Project and the Tara-Ika Growth Area to be integrated. The Project provides transport connections for the community, including by providing for active modes through the provision of a SUP. On this basis the Project is consistent with the provisions that direct the integration of infrastructure with land use.

44.3 Chapter 4: Land

Provisions identified as relevant: Objective 4-2, Policy 4-2

These provisions generally provide for the regulation of vegetation clearance, land disturbance, forestry and cultivation activities to ensure that accelerated erosion and increased sedimentation in water bodies are avoided, as far as reasonably practicable, or otherwise remedied or mitigated.

The Project includes the clearance of vegetation and land disturbance activities. The extent of these works is to be confirmed and managed through detailed design, and further authorised by future resource consent and outline plan processes. That said, within the section of the Project that is subject to this NoR, the potential effects of such activities, including in relation to accelerated erosion) are limited because the area subject to the NoR does not include any waterbodies and is generally flat pasture grass.

To the extent that the Project responds to these provisions at this stage, the proposed designation:

- through project shaping, and an envelope of effects, avoids or otherwise minimises the extent of vegetation clearance;
- foreshadows a management plan framework to implement measures to manage effects as a result of vegetation clearance and land disturbance activities;
- includes an adequate area to accommodate stormwater treatment, and erosion and sediment control measures, that will be integrated in the detailed design of the Project; and
- sets out clear design outcomes in relation to earthworks, slope treatments and topsoil management

On this basis, allowing the requirement will be consistent with, and does not compromise, the ability for the Project to achieve, the outcomes sought by these provisions.

44.4 Chapter 6: Indigenous Biological Diversity and Historic Heritage

44.4.1 Indigenous biological diversity

Provisions identified as relevant: Objective 6-1, Policy 6-2

Objective 6-1 seeks to protect areas of protect areas of significant indigenous vegetation and significant habitats of indigenous fauna and maintain biodiversity. Policy 6-2 directs how this is achieved including by applying Regional Plan Policies 13-4 and 13-5 and Schedule F to the One Plan.

As part of an exercise of project shaping, the potential impacts of the Project on indigenous biological diversity have been avoided in the first instance. This includes an area of vegetation immediately to the east of the proposed designation. Where areas of significant indigenous vegetation and significant habitats of indigenous fauna are not avoided (in terms of the designation footprint), the potential effects of the Project have been assessed with reference to the One Plan provisions. As set out in Part G, potential adverse effects can be minimised constraining the ability to disturb the habitat. While not disturbed, it is acknowledged that the NoR severs the connection between two significant habitats. The impact of this severance is addressed by the expansion of a severed habitat to provide a more viable habitat that does not traverse the formed highway. On the basis of this approach, and noting the limited area with indigenous biological diversity value within the proposed designation, the Project is able achieve the outcomes sought by the relevant provisions.

44.4.2 Historic heritage

Provisions identified as relevant: Objective 6-3

The Objective requires the protection of historic heritage from activities that would significantly reduce heritage qualities.

No archaeological or other heritage sites have been identified within the proposed designation, and sites identified in the broader Project area have been avoided as part of the route selection process. While not directly affected by the NoR, the “Ashleigh” homestead has medium heritage values that in part relate to its setting. Measures are proposed to mitigate the indirect effects of the project on the heritage values of the Ashleigh site.

The potential for works to disturb unidentified archaeological sites is appropriately managed by an Archaeological Authority that is to be sought from HNZPT and, if necessary, an interim archaeology discovery protocol.

44.5 Chapter 7: Air

Provisions identified as relevant: Objective 7-1, Policy 7-4

Objective 7-1 requires that a standard of ambient air quality is maintained and establishes fine particle levels. Policy 7-4 also address issues relating to incompatible land uses.

Matters related to air quality and discharges to air are considered as part of future resource consent processes and it is anticipated (as indicated in Table 26 – Matters Addressed by the Notice of Requirement

and Future Resource Consents) that an analysis of air quality effects, including the development of an approach to managing those effects, is undertaken at that time.

That said, the indicative approach to construction of the Project set out in Part C, along with management plans to implement measures and practices to address effect, directly foreshadow the management of discharges as a result of construction activities. In all, the proposed designation does not preclude the management of air discharges to achieve the standards established by these provisions, and does not give rise to the incompatibility issues addressed by Policy 7-4.

44.6 Chapter 9: Natural Hazards

Provisions identified as relevant: Objective 9-1, Policy 9-3

Objective 9-1 seeks that the adverse effects of natural hazard events on, amongst other matters, infrastructure are avoided and mitigated. The Objective is achieved by Policies that provide clear direction around the avoidance of increased risk, except where certain circumstances apply, and applying a precautionary approach to the effects of climate change. Policy 9-3 particularly relates to the placement of new critical infrastructure.

The Project is not located in an area of significant natural hazard event risk, and will be designed and constructed to standards that will minimise damage from design seismic events. Further, the Project is located and designed so that it does not accelerate or worsen the risk of severe events and their effects. In this way the Project appropriately avoids or mitigates the effects of potential natural hazard effects in a manner that achieves the identified Objective and Policies. In fact, when compared to the existing environment, the Project is substantially more resilient to seismicity, flooding and other significant weather event related natural hazards such that the risks and impact of natural hazards is reduced.

In terms of climate change, standards applied to the design of slopes and retaining structures, along with future hydrological studies to inform bridge and stormwater design, reflect an appropriate precautionary approach to the effects of climate change.

45. Regional Plan – Horizons One Plan (Part 2)

Matters that are addressed and managed by the Regional Plan are, in the most part considered as part of future resource consent processes given that the Regional Plan provisions address regional council functions set out in section 30 of the RMA. It is anticipated (as indicated in Table 26 – Matters Addressed by the Notice of Requirement and Future Resource Consents) that an analysis of matters that are relevant to section 30 functions will be undertaken as part of the future applications for resource consent.

45.1 Chapter 13: Land Use Activities and Indigenous Biological Diversity

Provisions identified as relevant: Objective 13-1, Objective 13-2, Policy 13-4, Policy 13-5

To the extent that the Regional Plan provisions are relevant to the NoR process, the matters set out therein have been addressed above, in the context of the assessment of the relevant provisions of Chapter 4 and Chapter 6 of the RPS.

46. District Plan – Horowhenua District Plan

46.1 Chapter 1: Matters of Importance to Tangata Whenua

Provisions identified as relevant: Objective 1.1.1, Objective 1.2.1, Objective 1.3.1, Policy 1.1.3, Policy 1.1.5, Policy 1.1.7, Policy 1.2.3, Policy 1.2.5, Policy 1.3.2, Policy 1.3.3 and Policy 1.3.5

The Objectives in Chapter 1 establish outcomes in respect of:

- the provision of active engagement with tangata whenua;
- the recognition of, and provision for, the spiritual and cultural values and tangata whenua relationships with (amongst other matters) their ancestral lands, heritage landscapes and cultural sites, wāhi tapu, wāhi tūpuna and other taonga; and
- the protection of areas or sites of cultural significance.

Waka Kotahi has taken a partnership approach to relationships with tangata whenua. The partnership approach is maintained through regular and on-going engagement at governance management and operational levels, including formal hui, informal meetings, site visits, participation in fieldwork, site walkovers and co-creation of key project documentation. Regular workshops, focusing on particular aspects of the Ō2NL Project's design, have assisted to integrate cultural and spiritual values into the Project as it has developed. These workshops have included a particular consideration of design and integration as it relates to the Tara-Ika Growth Area.

The Waka Kotahi approach to recognising and providing for tangata whenua values (including managing potential adverse effects on those values) is set out in Part G. It includes the provision for cultural values to be directly articulated by tangata whenua and subsequently managed in the context of the Project, particularly through the CEDF.

As set out in Table 13 – Adverse Effects That Are Avoided or Minimised Through Project Shaping the Project has been designed and shaped to avoid sites of cultural significance as much as possible. In the case of unknown sites, the Project provides for the disturbance of unidentified sites of significance through Archaeology Authorities to be sought under the HNZPT Act or otherwise through an interim accidental discovery protocol.

Where the NoR traverses a spiritual pathway and affects habitat of taonga species, management approaches include ongoing active engagement to ensure that these values are appropriately respected, acknowledged, protected and repaired in the final design.

Because sites of cultural significance are avoided, or managed through active engagement in respect of the design and delivery of the Project, it is concluded that the Project is entirely consistent with the relevant provisions of Chapter 1.

46.2 Chapter 2: Rural Environment

Provisions identified as relevant: Objective 2.1.1, Objective 2.4.1 Policy 2.1.9, Policy 2.1.11, Policy 2.1.17, Policy 2.1.18, Policy 2.1.19, Policy 2.1.20, Policy 2.4.3, Policy 2.4.4, Policy 2.4.13, Policy 2.4.16, Policy 2.4.17, Policy 2.4.18 and Policy 2.4.19

While the area subject to the NoR is both zoned 'Greenbelt Residential Deferred', and is also subject to Proposed PC4, the alternate zoning that applies to the area is Rural. For this reason, the provisions in Chapter 2 have some relevance to the Project. That said, it is noted that Proposed PC4 replaces the Rural Zone and Greenbelt Residential Deferred Zone with a new multi zone precinct. When a decision is made on Proposed PC4, and those provisions are beyond challenge, it is possible that Chapter 2 is no longer relevant to the NoR.

The Chapter 2 Provisions include a range of directions in respect of adverse effects of development on the rural environment. Further, the Chapter 2 Provisions prioritise primary production activities and provide

direction in respect to reverse sensitivity along with rural and residential amenity (noise, lighting, signs and traffic).

In this regard, it is noted that:

- the NoR is generally not an activity that is sensitive to the effects of rural activities and, as such, is consistent with the policies;
- the NoR provides for the adverse effects of, and on, the future state highway network to be appropriately managed;
- lighting of the Ō2NL Project is only proposed at intersections;
- while the NoR will alter the noise environment in the adjacent urban areas, the potential effects of noise are managed as set out in Part G and by Proposed PC4 so that noise received by sensitive activities is within acceptable limits and, in some cases (near SH57), it is noted that road traffic noise will reduce;
- signs are limited to those necessary to direct safe and efficient traffic outcomes;
- property accesses that are altered by the NoR will be provided in a manner that does not impact on the transport network.

Provisions identified as relevant: Policy LK.1, Policy LK.2, Policy LK.3, Policy LK.4

The provisions that relate to the Levin-Koputaroa Landscape Domain direct the management of effects of activities on the particular characteristics of this Landscape Domain. As set out in Part G, the scale of the Project means that impacts on the landscape cannot be avoided but can be appropriately managed. This includes through the avoidance of outstanding features and landscapes, project shaping and the consideration of alternatives, through to the direction given in the CEDF that responds to landscape and cultural values by clearly defining 'look and feel' outcomes for the Project. On this basis, the Project appropriately responds to and reflects the values of the Levin-Koputaroa Landscape Domain and is consistent with the relevant provisions.

46.2.1 Fragmentation and Soil Resource

Provisions identified as relevant: Objective 2.2.1, Policy 2.2.3, Policy 2.2.4, Policy 2.2.5, Policy 2.2.6, Policy 2.2.7 and Policy 2.2.9

Objective 2.2.1 (and associated policies) seek the protection of the life supporting capacity of soils for future generations by managing activities on versatile land and avoiding fragmentation.

As set out in Part G, the land subject to the proposed designation is highly productive, but not highly versatile, it is concluded that the proposed designation has a minor adverse effect on productive land as a result of 'loss', fragmentation and impacts on productive use. That said, it is noted that Proposed PC4 and the Greenbelt Residential Zone would result in the whole of the Tara-Ika Growth Area no longer being used for production.

46.3 Chapter 3: Natural Features and Values

Provisions identified as relevant: Objective 3.2.1, Policy 3.2.2 and Policy 3.2.3

The relevant provisions of Chapter 3 seek to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.

The NoR is consistent with the relevant provisions of Chapter 3 because areas of significant indigenous vegetation and significant habitats of indigenous fauna have been avoided in the first instance and, where within the proposed designation, constraints are to be imposed to prevent disturbance (and retain significant habitat). It is acknowledged that the Project severs the connection between significant habitats, however the impact of this severance is addressed by the providing for the expansion of a severed habitat.

46.4 Chapter 6: Urban Environment

Provisions identified as relevant: Objective 6.1.1, Objective 6.3.1, Policy 6.1.8, Policy 6.1.9, Policy 6.1.15, Policy 6.1.18, Policy 6.3.23 and Policy 6.3.30

While the area subject to the NoR is currently zoned Rural and Greenbelt Residential Deferred, the provisions of Chapter 6 are of relevance because the District Plan includes a clear signal that the area will be used for urban development in the future, and Proposed PC4 proposes an urban multi zone precinct.

The relevant provisions of Chapter 6 generally enable urban activities while managing adverse effects and providing for the protection of infrastructure including the transport network.

The NoR is consistent with these objectives and policies for the following reasons:

- the proposed designation is generally consistent with the structure plan for the area and will contribute to structured and integrated development of the Tara-Ika Growth Area that, in turn, will ensure sustainable management of the urban land resource (Objective 6.1.1, Policy 6.1.8 and Policy 6.1.9);
- the NoR provides for the adverse effects of, and on, the future state highway network to be appropriately managed (Policy 6.1.15, Policy 6.1.18 and Policy 6.3.23);
- while the NoR will alter the noise environment in the adjacent urban areas, the potential effects of noise are managed as set out in Part G and by Proposed PC4 so that noise received by sensitive activities is within acceptable limits and, in some cases (near SH57), it is noted that road traffic noise will reduce (Policy 6.3.23).

46.5 Chapter 7: Greenbelt Residential

Provisions identified as relevant: Objective 7.3.1 Policy 7.3.2, 7.3.3, 7.3.4, 7.3.5, 7.3.6

The provisions in Chapter 7 are relevant to the NoR because the areas subject to the proposed designation is zone 'Greenbelt Residential Deferred', it is understood that this means the zone provisions are relevant where infrastructure is available to support residential development. It is noted that Proposed PC4 replaces the Greenbelt Residential Deferred Zone with a new multi zone precinct. When a decision is made on Proposed PC4, and those provisions are beyond challenge, it is probable that Chapter 7 is no longer relevant to the NoR.

The provisions in Chapter 7 generally seek that residential development is achieved in a comprehensive and coordinated manner that is integrated with the provision of infrastructure and that manages effects on infrastructure.

To the extent relevant, the NoR is consistent with the Chapter 7 provisions because the rationale for the proposed designation is to protect the Ō2NL route; to provide certainty to the future urban development; and to enable timely integration.

46.6 Chapter 8: Natural Hazards

Provisions identified as relevant: Objective 8.1.1 and 8.2.1, Policy 8.1.8, 8.1.9, 6.1.15, 8.2.2 and 8.2.3

The relevant Objectives seek that the adverse effects of natural hazards are avoided or mitigated, and that development does not worsen the risks or severity of natural hazards. The implementing policies expand on these outcomes by directing that critical infrastructure is not located in areas with significant risk, and that structures minimise material damage.

As set out above, the Project is not located in an area of significant natural hazard event risk, and will be designed and constructed to standards that will minimise damage from design seismic events. Further, the Project is located and designed so that it does not accelerate or worsen the risk of severe events and their effects. In this way the Project appropriately avoids or mitigates the effects of potential natural hazard effects in a manner that achieves the identified Objective and Policies. In fact, when compared to the existing environment, the Project is substantially more resilient to seismicity, flooding and other significant weather event related natural hazards such that the risks and impact of natural hazards is reduced.

46.7 Chapter 10: Land Transport

Provisions identified as relevant: Objective 10.1.1, 10.2.1 and 10.3.1, Policy 10.1.3, 10.1.4, 10.1.5, 10.1.6, 10.1.7, 10.1.8, 10.1.13, 10.2.2, 10.2.3, 10.2.4, 10.3.11 and 10.3.12

The Objectives in Chapter 10 generally provide for efficient and safety transport networks, including for active modes and seeks that adverse effects of, and on, transport infrastructure are appropriately managed.

The NoR is consistent with the Chapter 10 Objectives and Policies for the following reasons:

- the Project will have significant positive effects on the ability of both the state highway and local road components of the overall land transport network to safely and efficiently meet the current and future needs of the District, including through the provision allowing for a better separation of local and inter-regional traffic (including heavy vehicles);
- as detailed in Part C, minimum design standards, guidelines and specifications will apply to the detailed design and construction of the Project such that the state highway network will be safe and efficient;
- the SUP has the potential to be connected to other existing and future walking and cycling facilities, encourages the use of non-vehicular modes of transport in a safe environment;
- as set out in Part G, the NoR avoids sensitive areas and the potential adverse effects of the NoR are appropriately avoided, remedied or mitigated.
- the NoR allows the adverse effects of new development in the area to avoid, remedy, or mitigate adverse effects on the safe and efficient functioning of the future state highway network, and in conjunction with provisions to be introduced by Proposed PC4, will ensure that activities establishing adjacent to the designation incorporate measures to protect themselves against the effects of the Project once operational.

46.8 Chapter 12: Utilities and Energy

Provisions identified as relevant: Objective 12.1.1, Policy 12.1.2, 12.1.3, 12.1.4, 12.1.5, 12.1.6, 12.1.8

The provisions in Chapter 12 are relevant to the Project because the 'roading' falls within the definition of 'network utilities' in the District Plan. The relevant provisions in Chapter 12 seek to protect and provide for the establishment, operation, maintenance and upgrading of network utilities while managing their adverse effects. Policies direct particular protection for sensitive areas and ensuring that the health and safety of the community is not compromised. Policies also provide for a consideration of co-location and the specific technical and operational needs of network utilities.

The proposed designation provides for the establishment, and future operation and maintenance, of a portion of the Ō2NL Project (where the Project traverses the Tara-Ika Growth Area) while appropriately managing adverse effects, as set out in Part G. Further the proposed designation avoids all sensitive areas listed in Policy 12.1.4 and, in terms of Policy 12.1.5, the NoR does not compromise the health and safety and instead delivers significant health benefits. For these reasons the NoR is consistent with the provisions in Chapter 12.

46.9 Chapter 13: Historic Heritage

Provisions identified as relevant: Objective 13.2.1, Policy 13.2.5

Objective 13.2.1 seeks to protect significant historic heritage and Policy 13.2.5 directs that the adverse effects of activities that could destroy or diminish the heritage values of an item listed in the 'Historic Heritage Schedule' are avoided or mitigated. No items listed in the 'Historic Heritage Schedule are listed in the District Plan and as such Policy 13.2.5 is of no relevance. That said, while not listed or within the proposed designation, the 'Ashleigh' homestead, located immediately to the east of the proposed designation, has medium heritage values that in part relate to its setting. In order to ensure that 'Ashleigh' is protected, measures are proposed to mitigate the indirect effects of the project on the heritage values of the 'Ashleigh' site and therefore the NoR is consistent with Objective 13.2.1.

46.10 Proposed Plan Change 4: 6A Tara-Ika Multi Zone Precinct

Provisions identified as relevant: Objective 6A.1, Policy 6A.1.1, Policy 6A.1.2, Policy 6A.1.4, Objective 6A2, Policy 6A.2.2, Policy 6A.2.3

The notified PC4 Objectives set out the development outcomes sought for the Tara-Ika Growth Area. These outcomes make particular reference to the efficient delivery of infrastructure, and development being integrated and connected and reflecting cultural values. Policies, amongst other matters, direct development to be consistent with the related structure plan.

Structure Plan 13 shows the Ō2NL corridor in the same (but not exactly mirroring) location as the NoR. As such, it is considered that the NoR is consistent with the structure plan and Policy 6A.1.1 and provides one part of the infrastructure outcomes anticipated by Proposed PC4. In respect of cultural values, the approach taken by Waka Kotahi is set out in respect of Chapter 1 and it is noted that implementing the CEDF will respond to cultural values in the manner anticipated by Policy 6A.1.2.

In terms of the provision of infrastructure being aligned with the development of the Tara-Ika Growth Area and ensuring that development does not compromise the provision of infrastructure (Policy 6A.2.2 and Policy 6A.2.3), it is noted that the rationale for this NoR is to protect the Ō2NL route; to provide certainty to the future urban development; and to enable timely integration.

It is acknowledged that Proposed PC4 is yet to be decided and it is anticipated that the relevant provisions are likely to be changed through decision-making in response to submissions. In this regard, following the adjournment of the hearing, Waka Kotahi and HDC have agreed amendments to the provisions of Proposed PC4 to respond to matters raised in submissions. These amendments have been provided to the hearing panel for consideration as part of decision-making.

47. Statutory Considerations Relevant to the Proposed Designation

47.1 Adequate Consideration of Alternatives (section 171(1)(b))

Section 171(1)(b) requires the territorial authority, when considering a NoR, to have particular regard to whether adequate consideration has been given to alternative sites, routes and methods for undertaking the work (where the requiring authority does not have an interest in the land sufficient for undertaking the work, or the work is likely to have a significant adverse effect on the environment). The focus is on the process followed to consider alternatives, rather than the outcome. The RMA does not require the 'best' or 'most preferred' option to be selected.

The alternatives consideration process followed for the Project is summarised in Part E of this Report. Waka Kotahi adopted a systematic and best practice approach to identifying a suitable preferred corridor, then identifying and refining its preferred route within that corridor. That approach has involved:

- identifying a broad range of alternative corridors, routes and route refinements to be assessed (including and the addition of further hybrid routes and methods during the process as additional information came to light – this particularly included further consideration of options east of Taitoko/Levin);
- implementing multiple MCA processes, with inputs from tangata whenua, stakeholders and technical specialists;
- selecting a preferred route and developing a proposed designation, involving further consideration of alternatives using increasingly comprehensive information; and
- as part of those processes, assessing effects on landowners, social and other environmental effects, key RMA considerations and relevant statutory planning instruments, alignment with Project objectives, and strategic considerations (including Project risk, cost, and wider transport networks).

The alternatives consideration process was robust, comprehensive and iterative, included significant engagement with stakeholders and assessments undertaken by independent technical experts, such that it clearly meets the relevant statutory test in section 171(1)(b).

47.2 Reasonably Necessary to Achieve Objectives (section 171(1)(c))

Section 171(1)(c) of the RMA provides that, when considering a NoR, a territorial authority must have particular regard to "*whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought*". In the context of section 171(1)(c), 'reasonably necessary' is to be understood as requiring something less than 'absolutely necessary' or essential. It is also important to note that as a requiring authority, Waka Kotahi is entitled to establish its own priorities and objectives in relation to the state highway network, provided those objectives do not predetermine the consideration of alternatives.

The Project objectives are for the entire Ō2NL Project and respond directly to defined 'problems' in respect of the existing state highway network; they reflect the national and regional importance of this part of SH1 alongside the role SH1 in respect of the local community. The objectives of Waka Kotahi for the Project are to:

- enhance safety of travel on the state highway network.
- enhance the resilience of the state highway network.
- provide appropriate connections that integrate the state highway and local road network to serve urban areas.
- enable mode choice for journeys between local communities by providing a north-south cycling and walking facility.
- support inter-regional and intra-regional growth and productivity through improved movement of people and freight on the state highway network.

In the context of this NoR, and in terms of achieving the integration of the Ō2NL Project and the development of the Tara-Ika Growth Area, the latter three of these Objectives are of particular importance.

As set out in Part G, the Ō2NL Project, including the section subject to this NoR, is reasonably necessary to achieve the objectives of Waka Kotahi because it will:

- provide a greater level of safety when compared to the existing state highway;
- be less likely to be subject to closures as a result of traffic accidents or natural hazard events when compared to the existing state highway;
- service current urban areas and support the development of future urban areas through connection onto, and across the state highway network;
- provide enhanced walking and cycling facilities (in particular the SUP that traverses the length of the route) and connections; and
- enable more efficient and reliable inter-regional and intra-regional journeys.

The proposed designation is reasonably necessary as a planning tool as it identifies and protects land required for the Project and will enable Waka Kotahi to carry out the proposed work. Designations are recognised as being an appropriate planning tool for state highways and other linear infrastructure. The principal reasons for requiring a designation to facilitate the work to which the requirement relates are because it will:

- allow the land required to be identified in the Horowhenua District Pan, giving a clear indication of the intended use of the land;
- protect the proposed route from future development that would prevent or hinder the construction of the Project;

- provide certainty for landowners of the intended use of the land and the work to be undertaken in the future;
- enable the integrated development of the Ō2NL Project and the development of the Tara-Ika Growth Area; and
- allow Waka Kotahi, or its authorised agents, to undertake the works necessary for the Ō2NL Project within the area subject to the proposed designation.

In addition, the proposed designation is reasonably necessary to enable Waka Kotahi to achieve its principal objective under the LTMA.

47.3 Other Matters (section 171(1)(d))

Section 171(1)(d) of the RMA provides that when considering a NoR a territorial authority must have particular regard to "*any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement*". 'Other matters' that may be identified as relevant are typically other statutes (such as those identified in Part D) and non-RMA planning documents. Those that are considered directly relevant described briefly in Table 27 below:

Table 27 – Other Relevant Matters

Other Matter	Discussion
Other statutes	
Land Transport Management Act 2003 ("LTMA")	The LTMA provides the statutory framework for the management of New Zealand's land transport network. The purpose of the LTMA as set out at section 3 is "*to contribute to an effective, efficient, and safe land transport system in the public interest*". The NZ Transport Agency's objective is set out in section 94: "*The objective of the Agency is to undertake its functions in a way that contributes to an effective, efficient, and safe land transport system in the public interest.*" The Project objectives are consistent with the legislative purpose of Waka Kotahi and purpose of the LTMA so that, in achieving its stated objectives the Project is consistent with the LTMA.
Transport related plans and policies	
Government Policy Statement on Land Transport: 2021/22 – 2030-31	The GPS, prepared under the LTMA, sets Government's strategy to guide land transport investment over a 10-year period. The GPS identifies safety and access as the key strategic land transport priorities for the Government, alongside the environment and value for money as supporting priorities. The Project, and therefore this NoR, is directly aligned with the GPS priorities through improved travel time, increased resilience, a safer journey and the provision of greater access for all road users.
National Land Transport Programme 2018 – 2021	The NLTP gives effect to the GPS forecasts of activities and expenditure. The NLTP identifies the Project as a key priority and confirms an initial investment for its design and construction. The NLTP recognises the Ō2NL Project as a key project that is funded by NZUP.
Horizons Regional Land Transport Plan 2015 - 2025 (2018 review)	The RLTP sets out the strategic direction for land transport in the Region. The RLTP identifies the Ō2NL Project as regionally significant and one of the 'Significant Inter-Regional Activities Between the Manawatū-Whanganui Region and Greater Wellington Region'. Allowing the requirement is consistent with the priority given to the Project.
Local government plans and policies	
Horowhenua Growth Strategy 2040	Allowing the requirement is consistent with this strategy because the NoR will facilitate planned and integrated urban development of the Tara-Ika Growth Area, which is identified as a growth area in the Levin section of the Horowhenua Development Area that underpins the Growth Strategy.

48. Part 2 Assessment

The purpose of the RMA, in section 5(2), is to promote the sustainable management of natural and physical resources. In achieving this purpose, it is often necessary to balance competing resource values and benefits and adverse effects associated with a proposal. A designation for a public work requires a consideration of the local, regional or national benefits that may accrue and the more localised adverse effects that the designation might have on the environment.

48.1 Section 5 – Purpose and Principles

In terms of Section 5 of the RMA, the Project will enable people and communities to provide for their social, economic and cultural wellbeing and for their health and safety, by providing for:

- economic benefits, including increased economic activity during construction, and through responding to and in part facilitating urban growth to the east of Levin;
- transport benefits through improved efficiency, reliability, safety, resilience and travel times, and through better separation of local and inter-regional traffic with resultant improvements to the safety and amenity of both existing and the proposed routes; and
- social benefits through integration with the Tara-Ika Growth Area to deliver a well-functioning urban environment, including in respect of provision for active modes being included as part of the Project, including for the section of the Project that is subject to this NoR.

Sustainable management also involves the promotion of the matters in section 5(2)(a) to (c) of the RMA. In this regard, the following conclusions from the planning assessment in Part G are made:

- allowing the requirement will, in light of the pending urban development of the area, sustain the potential for both the local road and the state highway network as physical resources to meet the needs of future residents of the area and wider Horowhenua district;
- there are no effects from the Project on natural resources in the area that will jeopardise the ability of those natural resources to meet the needs of future generations;
- to the extent relevant to the NoR, allowing the requirement safeguards the life supporting capacity of air, water, soil and ecosystems through the implementation of measures and practices to manage construction activities and achieve established environmental outcomes;
- the adverse effects of allowing the requirement are appropriately managed by:
  - avoiding effects where practicable;
  - then remedying and mitigating the majority of effects, including through the implementation of measures set out in Part G.

48.2 Section 6: Matters of National Importance

The proposed designation recognises and provides for the following matters in section 6 of the RMA that are relevant in this instance:

- Section 6(c): the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna is achieved in the first instance by the NoR avoiding such areas and, where within the designation imposing constraints on the disturbance of the area. While the Project severs a significant habitat, the impact of this severance is remedied by the expansion of a severed habitat (section 6(c)).
- Section 6(e): the relationship of tangata whenua and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga has been recognised and provided for through the partnership approach taken by Waka Kotahi, including by enabling cultural values to be directly articulated by tangata whenua and subsequently managed in the context of the Project, particularly

through the CEDF. Of direct relevance to this NoR is the fact that areas of significant cultural value to the west of Taitoko/Levin have been avoided by the selection of this route.

- Section 6(f): the protection of historic heritage has been recognised and provided for through the route selection which avoids any direct effect on scheduled heritage sites. Any direct physical effects on 'Ashleigh' have been specifically and deliberately avoided.

The section 6 of the RMA matters that are not relevant to the section of the Project that is subject to this NoR are:

- sections 6(a) and (d) because the NoR does not traverse the coastal environment, wetlands, lakes or rivers;
- section 6(b) because there are no outstanding natural features or landscapes within the proposed designation;
- section 6(g) because the NoR does not impact on any recognised customary rights; and
- section 6(h) because, while the risk of natural hazards is considered, the NoR does not traverse any area that is vulnerable to significant risks from natural hazards.

The ability to have recognised and provided for these section 6 matters may have presented some challenges if a route to the west of Taitoko/Levin had been pursued; the selection of the route traversed by the NoR has avoided those issues.

48.3 Section 7: Other Matters

This following sets out how the NoR has particular regard to, and appropriately responds to the relevant matters in section 7 of the RMA as follows:

- The kaitiakitanga of tangata whenua has been recognised through the partnership approach adopted by Waka Kotahi (section 7(a)).
- The ethic of stewardship has been recognised in the engagement with and participation of community groups who have a specific interest in and exercise stewardship over particular resources (section 7(aa)).
- The Ō2NL Project is a physical resource of critical importance to the Region and the development of the Project, as described in this document (including in respect of route selection and the management of adverse effects), provides for the efficient development and use of natural and physical resources (section 7(b)).
- The significant transport benefits that are realised by the Project, once operational, including reduced travel times will deliver fuel savings and therefore greater efficiency of the end use of energy (section 7(ba)).
- The selection of, and refinement of, the proposed designation has sought to avoid adverse effects on existing amenity values such that amenity values are generally maintained or enhanced (particularly in respect of those who live in close proximity to the existing state highways (section 7(c)).
- The impacts on significant ecosystems are generally avoided or minimised through the route selection and project shaping processes with residual effects associated with habitat severance and 'edge' effects remedied by expansion of the severed habitat (section 7(d)).
- The selection of a preferred corridor, and subsequent refinement of that corridor, alongside a comprehensive consideration of the impacts of the Project, has been undertaken with a view to achieving an outcome that avoids and minimises adverse effects on the environment (to the extent practicable). While the Project results in a permanent change to the existing environment, when considered in the context of the benefit of the Project and the various measures to minimise, remedy and mitigate adverse effects, the overall quality of the environment is not compromised (section 7(f)).
- The Project has been designed to respond the effects of climate change, particularly (of direct relevance to this NoR) in respect to stormwater management (section 7(i)).

48.4 Section 8: Treaty of Waitangi (Te Tiriti o Waitangi)

Waka Kotahi, as a Crown agency, has a commitment to a partnership-based approach with tangata whenua that reflects the principles of the Treaty of Waitangi/Te Tiriti o Waitangi. This approach is reflected in the on-going engagement between parties and a collaborative approach to the design and delivery of the Project that is exemplified by the CEDF.

48.5 Part 2: Summary

In all, while the section of the Ō2NL Project between Queen Street East and Tararua Road will result in adverse effects on the environment, when considering the significant regional and local benefits of the Project, alongside the measures to avoid, remedy, mitigate, offset or compensate for the actual and potential adverse effects, the Project achieves the purpose and principles of the RMA.

49. Conclusion

The purpose of the Ō2NL Project is to "*improve safety and access, support economic growth, provide greater route resilience, and better access to walking and cycling facilities*". The Project provides the final northern link of the Wellington Northern Corridor that extends from Wellington International Airport.

The Ō2NL Project is identified as a priority investment area in the Horizons RLTP. The Horizons RLTP explains that linkages "*to the Wellington Region via a new highway and rail corridor are vital to the Manawatū-Whanganui Region and wider central north island to enable the efficient, effective and safe movement of people and freight through the region. It is therefore essential that a safe, efficient and reliable link is provided through implementation of the Wellington Northern Corridor project, specifically the section from Ōtaki to north of Levin…*".

The Ō2NL Project is a key priority for the Waka Kotahi (as reflected in the National Land Transport Programme 2018 – 2021) and is described in Horizons' Regional Land Transport Plan as being important to "*relieve severe congestion on both the state highway and connecting local roads, improve safety, and improve journey time reliability"*.

This NoR, given by Waka Kotahi for the part of the Ō2NL Project that traverses the Tara-Ika Growth Area, identifies and protects the Ō2NL route; enables the design and development of the Tara-Ika Growth Area and the Ō2NL Project to be integrated; and provides certainty for stakeholders and the community.

Allowing the requirement:

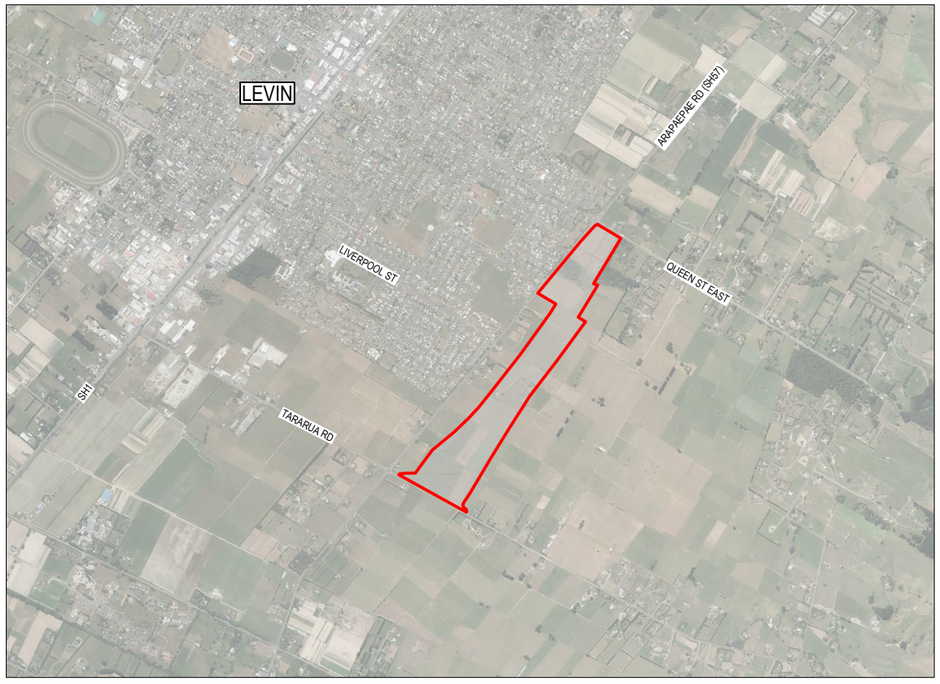
- will, once the Ō2NL Project is operational, result in substantial safety improvements, improved efficiency through a significant reduction in travel times, and improved network resilience;
- is consistent with the objectives and policies of the relevant national and regional statutory planning documents;
- is consistent with the relevant objectives and policies of Horowhenua District Plan, including the provisions of Proposed PC4 that relate to the development of the Tara-Ika Growth Area;
- will enable communities at a local, regional, and national level to provide for their social, economic, and cultural wellbeing, health and safety;
- will sustain the potential of natural and physical resources for future generations, and safeguard the life-supporting capacity of air, soils, water, and ecosystems;
- appropriately avoids, remedies or mitigates adverse effects of the Project where it traverses the Tara-Ika Growth Area such that the requirements of section 5 of the RMA are satisfied;
- provides for, and appropriately responds to, the matters in sections 6, 7, and 8 of the RMA; and
- as such, achieves the sustainable management purpose of the RMA.

PART I: APPENDICES

Appendix I: Drawings and Plans

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

LOCALITY PLAN



Sheet No. 310203848-03-001-G0001

Rev. A

DRAWING NO.	SHEET TITLE
	GENERAL
310203848-03-001-G0001	COVER SHEET
310203848-03-001-G0002	DRAWING INDEX
	CONTEXT DRAWINGS
310203848-03-100-C1000	CONTEXT DRAWING TOPOGRAPHY AND ECOLOGY SYSTEMS
310203848-03-100-C1001	CONTEXT DRAWING GEOLOGICAL MAPPING
310203848-03-100-C1002	CONTEXT DRAWING ZONING INCORPORATING NOTIFIED VERSION OF PROPOSED PC4
	LAND REQUIREMENT PLANS
310203848-03-100-C1200	LAND REQUIREMENT PLAN SHEET 1
310203848-03-100-C1201	LAND REQUIREMENT PLAN SHEET 2
310203848-03-100-C1202	LAND REQUIREMENT SCHEDULE
	DESIGNATION PLANS
310203848-03-100-C1300	DESIGNATION PLAN SHEET 1
310203848-03-100-C1301	DESIGNATION PLAN SHEET 2
	INDICATIVE ALIGNMENT PLANS
310203848-03-100-C1400	GENERAL ARRANGEMENT PLAN - INDICATIVE DESIGN SHEET 1
310203848-03-100-C1401	GENERAL ARRANGEMENT PLAN - INDICATIVE DESIGN SHEET 2
	LONGITUDINAL AND CROSS SECTIONS
310203848-03-100-C1500	PLAN AND LONG SECTION SHEET 1
310203848-03-100-C1501	PLAN AND LONG SECTION SHEET 2
310203848-03-100-C2000	TYPICAL SECTIONS SHEET 1
	ACCOMMODATION WORKS
310203848-03-100-C3000	ACCOMMODATION WORKS SHEET 1
310203848-03-100-C3001	ACCOMMODATION WORKS SHEET 2

NOTE

ALL INFORMATION SHOWN IS SUBJECT TO FINAL DESIGN AND THE DETAILS MAY CHANGE. AREAS AND MEASUREMENTS ARE SUBJECT TO SURVEY.

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REV	REVISIONS	DRN	CHK	APP	DATE
A	ISSUED FOR SUBMISSION	SS	JP	-	

SURVEYED		
DESIGNED	Steve Muller	18.06.21
DRAWN	Steve Sutton	18.06.21
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		

Stantec

Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

DRAWING INDEX

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales:

Drawing No.: 310203848-03-001-G0002

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VEGETATION AND HABITAT TABLE	
ID CODE	DESCRIPTION
ITF7	TĪTOKI FOREST ON TERRACE
ITT03	PLANTED INDIGENOUS TREELAND ON TERRACES AND HILLSLOPES
ITT05	TĪTOKI TREELAND ON TERRACE
ITT06	TĪTOKI-HĪNAU-MAIRE TREELAND ON TERRACE
ETF4	EXOTIC TREELAND AND FOREST ON TERRACES AND HILLSLOPES
ETF5	SWEET CHERRY FOREST ON TERRACE
ETF6	REDWOOD FOREST ON TERRACE
ETF7	FALSE ACACIA-KARAKA FOREST ON TERRACE
ETF8	MACROCARPA-RADIATA PINE-FALSE ACACIA FOREST ON TERRACE
EWH5	WATER PEPPER HERBFIELD ON GULLY FLOOR AND POND EDGES
EWG3	BLUE SWEETGRASS-CREEPING BUTTERCUP GRASSLAND ON LOW-LYING TERRACE
MTF3	FALSE ACACIA-TĪTOKI-CHERRY FOREST ON TERRACE
MTF5	MIXED INDIGENOUS-EXOTIC PLANTED FOREST ON HILLSLOPES
MTF6	KARAKA-MĀHOE-KAWAKAWA FOREST AND SCRUB ON TERRACE
MTF7	TĪTOKI-KARAKA FOREST ON TERRACE
MTF8	TĪTOKI-FALSE ACACIA-POATANIWHA-KARAKA FOREST ON TERRACE

NOTE

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Stantec

Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

CONTEXT DRAWING
TOPOGRAPHY AND ECOLOGY SYSTEMS

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 15000 (A3)

Drawing No.: 310203848-03-001-C1000

Rev.: A

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ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

CONTEXT DRAWING
GEOLOGICAL MAPPING

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 15000 (A3)

Drawing No.: 310203848-03-001-C1001

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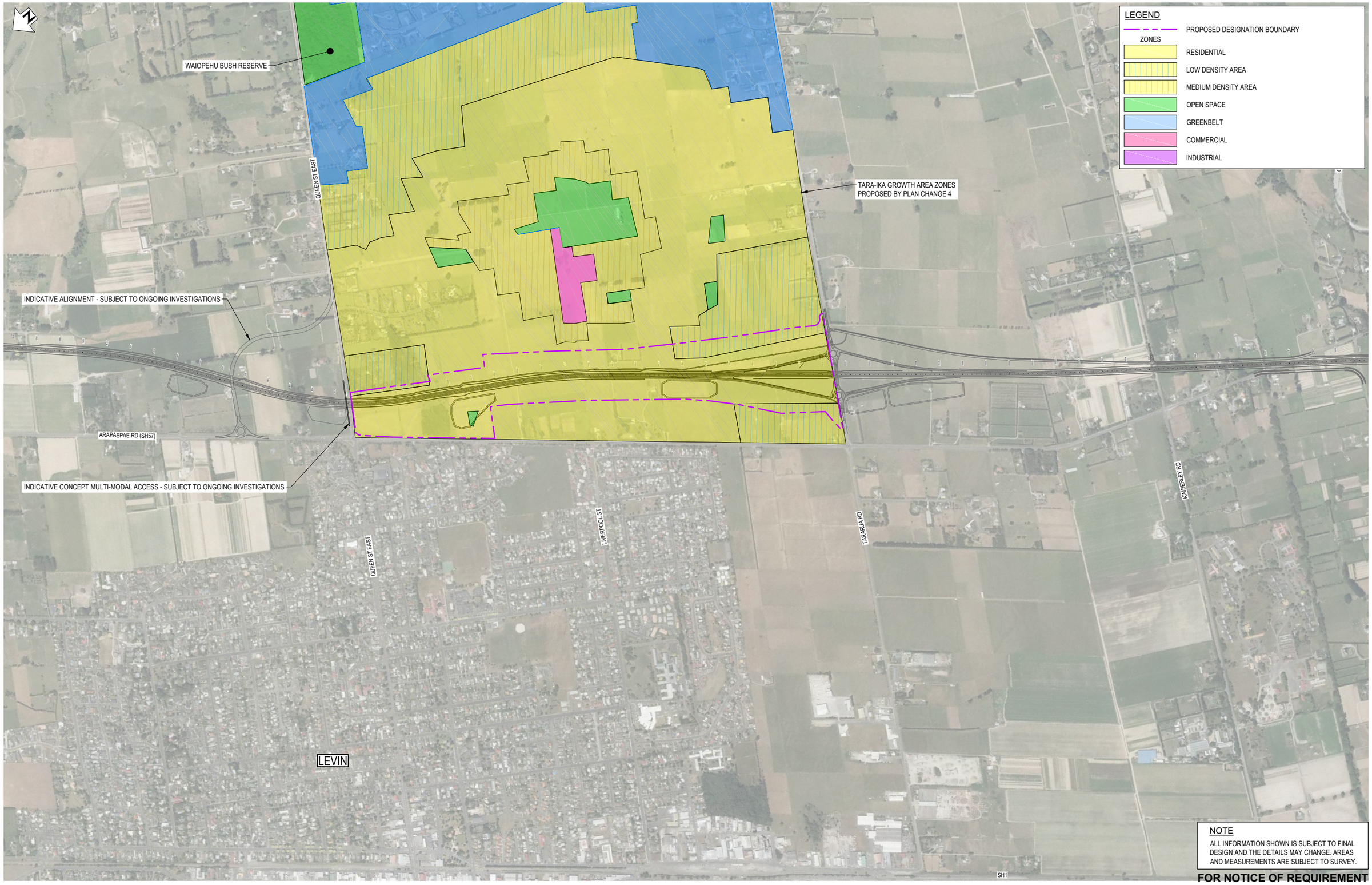

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Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

CONTEXT DRAWING
ZONING INCORPORATING NOTIFIED VERSION OF PROPOSED PC4

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 15000 (A3)

Drawing No.: 310203848-03-001-C1002

Rev.: A

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Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

LAND REQUIREMENT PLAN
SHEET 1

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 4000 (A3)

Drawing No.: 310203848-03-001-C1200

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Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

LAND REQUIREMENT PLAN
SHEET 2

Status Stamp: **WORKING PLOT**
Date Stamp:
Scales: 1 : 4000 (A3)
Drawing No.: 310203848-03-001-C1201
Rev.: A

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STANTEC REFERENCE ID	TITLE REFERENCE	LEGAL DESCRIPTION	PARCEL ID	OWNERSHIP	COUNCIL	AREA OF LAND (HA)		
						LAND TO BE DESIGNATED (HA)	BALANCE LAND (HA)	TOTAL LAND (HA)
413	WN16A/319	PART LOT 1 DP 4237	3760580	IAN DOUGLAS GRAY, SANDRA RUBY GRAY	HOROWHENUA DISTRICT COUNCIL	18.2346	10.6310	28.8656
424	WN43D/745	LOT 5 DP 77522	3759067	JAMES MCDONNELL LIMITED	HOROWHENUA DISTRICT COUNCIL	2.3476	4.8364	7.184
435	WN43D/744	LOT 4 DP 77522	3814088	JAMES MCDONNELL LIMITED	HOROWHENUA DISTRICT COUNCIL	2.5322	4.6928	7.225
441	WN43D/743	LOT 3 DP 77522	3974909	JAMES MCDONNELL LIMITED	HOROWHENUA DISTRICT COUNCIL	2.4745	4.751	7.2255
443	WN43D/742	LOT 2 DP 77522	3814078	JAMES MCDONNELL LIMITED	HOROWHENUA DISTRICT COUNCIL	2.1787	5.0053	7.184
448	WN36C/865	LOT 1 DP 63980	3951491	JAMES MCDONNELL LIMITED	HOROWHENUA DISTRICT COUNCIL	2.4277	4.7747	7.2024
462	WNA4/1323	PART LOT 3 DP 6490	3929894	JAMES MCDONNELL LIMITED	HOROWHENUA DISTRICT COUNCIL	9.0219	18.2059	27.2278
465	WN52C/744	PART LOT 1 DP 86925	7094085	HER MAJESTY THE QUEEN	HOROWHENUA DISTRICT COUNCIL	12.8396	0.000	12.8396
479	WN52C/745	LOT 2 DP 86925	3858261	MICHAEL ANTHONY COCHRANE, KAREN MARY AND STEPHEN JEFFREY PROUSE	HOROWHENUA DISTRICT COUNCIL	1.5586	11.3359	12.8945

NOTE

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DESIGNED	Steve Sutton	19.01.22
DRAWN	Steve Sutton	19.01.22
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		

Stantec

Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

LAND REQUIREMENT SCHEDULE

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: NTS

Drawing No.: 310203848-03-001-C1202

Rev.: A

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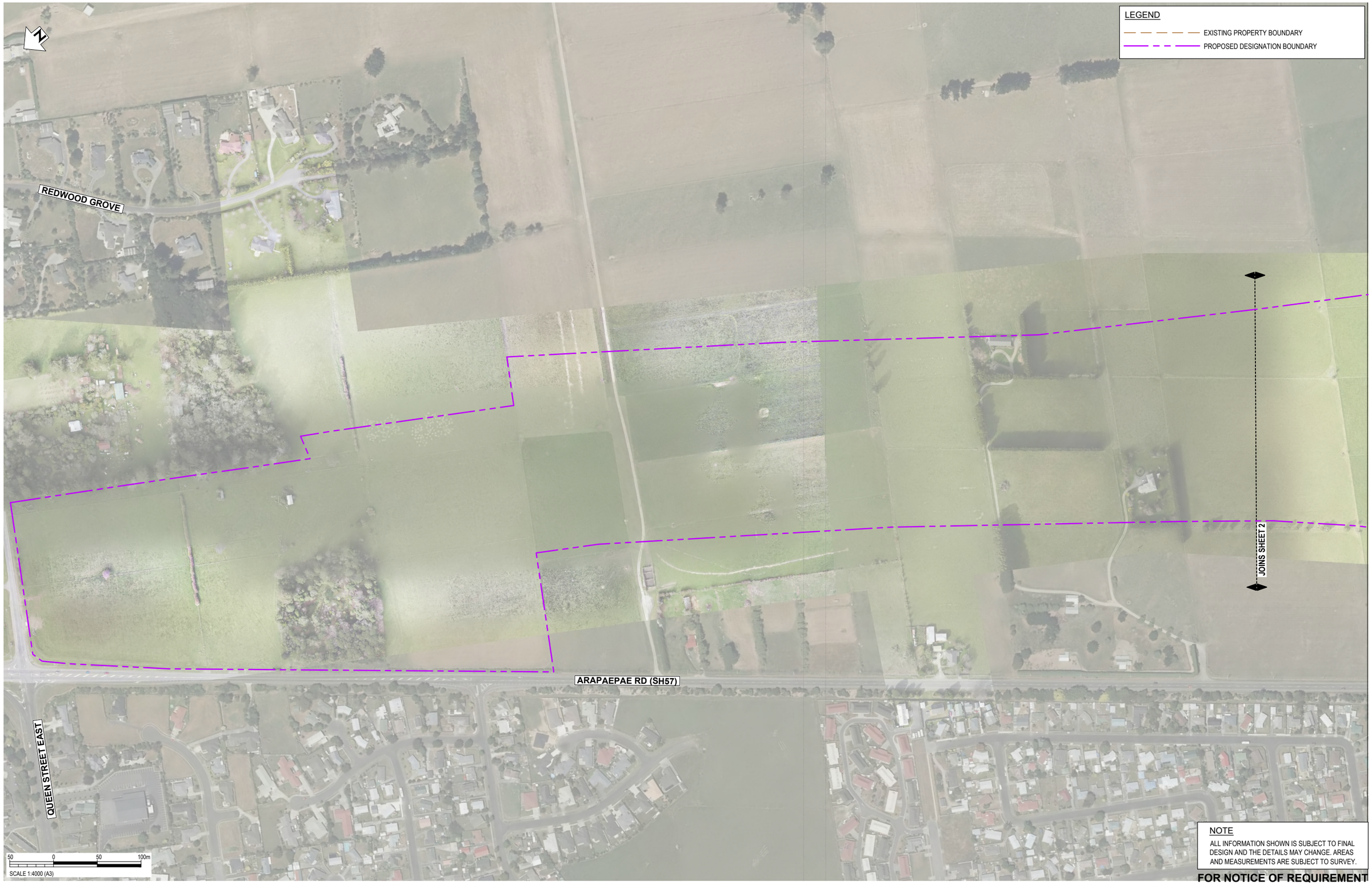

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Stantec

Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

DESIGNATION PLAN
SHEET 1

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 4000 (A3)

Drawing No.: 310203848-03-001-C1300

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Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

DESIGNATION PLAN
SHEET 2

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 4000 (A3)

Drawing No.: 310203848-03-001-C1301

Rev.: A

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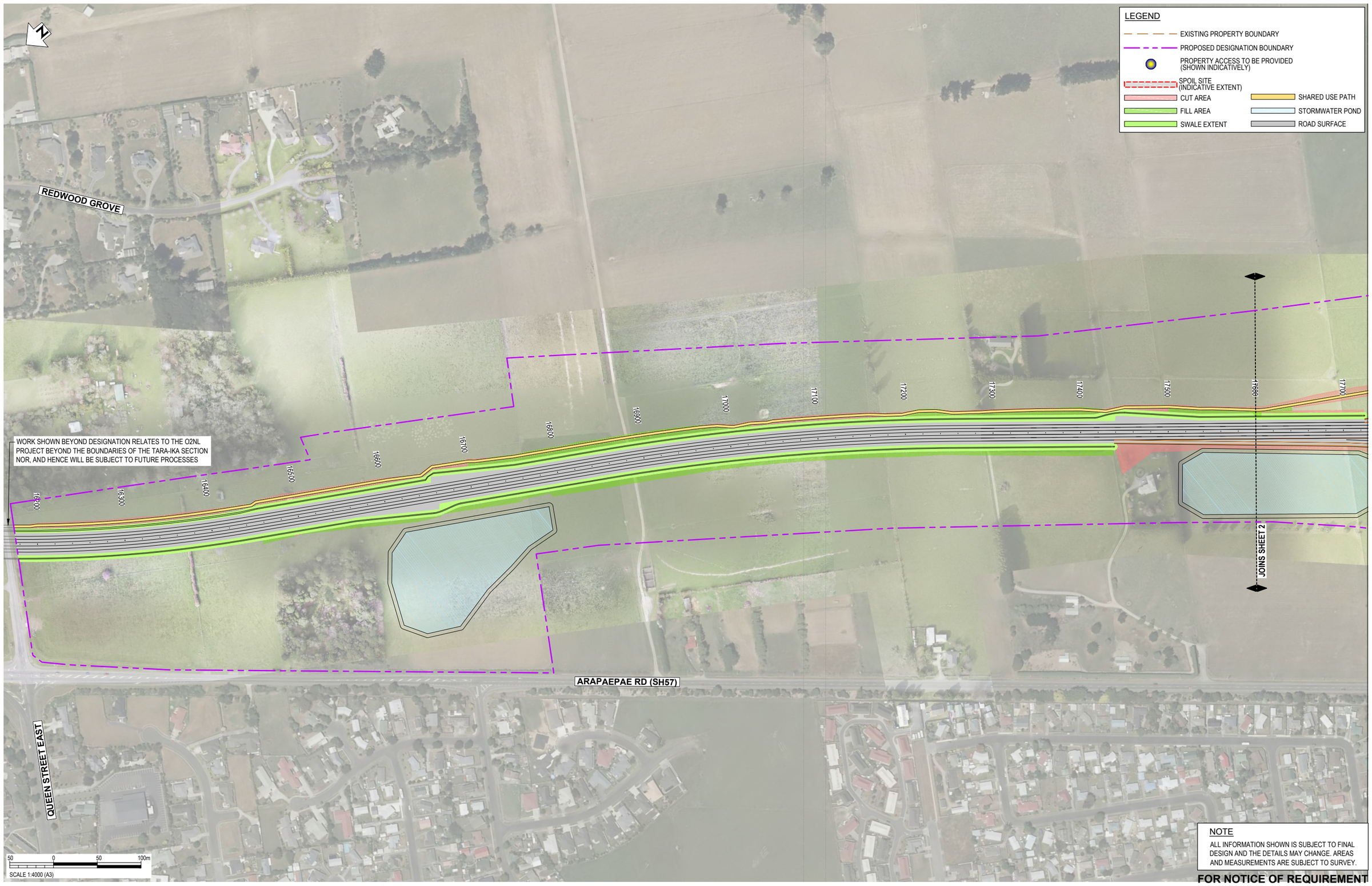

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CAD REVIEW		
DESIGN CHECK		
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APPROVED		
PROF REGISTRATION:		

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Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

GENERAL ARRANGEMENT PLAN - INDICATIVE DESIGN
SHEET 1

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 4000 (A3)

Drawing No.: 310203848-03-001-C1400

Rev.: A

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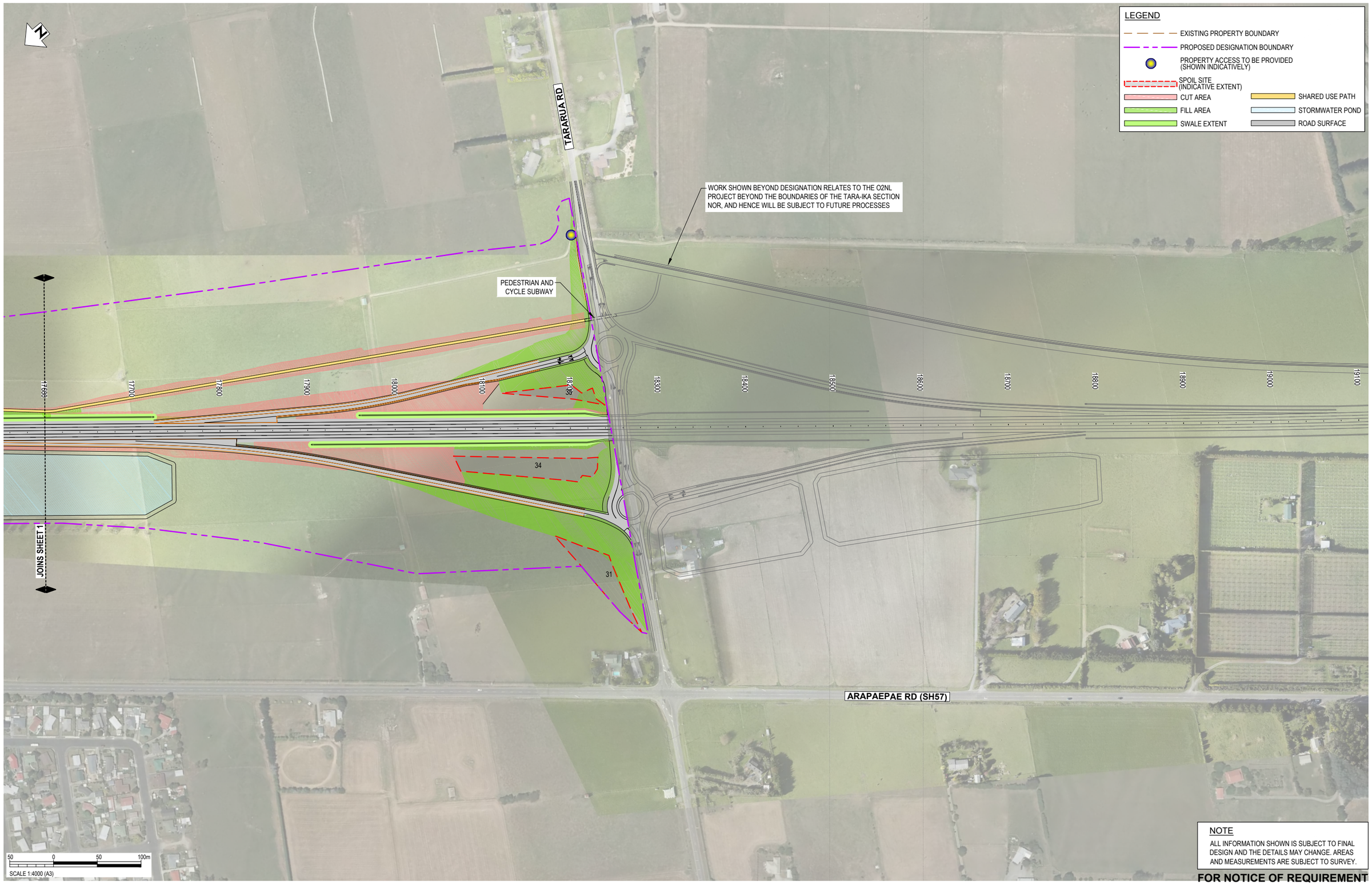

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Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

GENERAL ARRANGEMENT PLAN - INDICATIVE DESIGN
SHEET 2

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 4000 (A3)

Drawing No.: 310203848-03-001-C1401

Rev.: A

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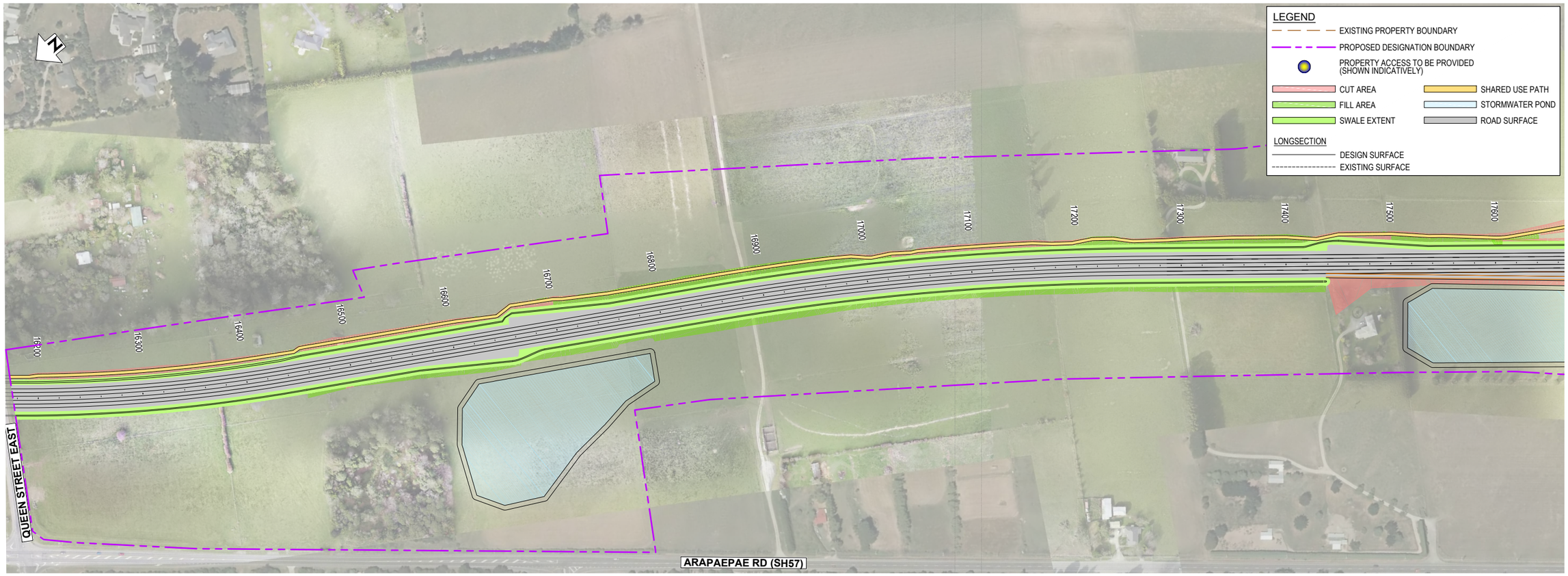

PLAN

SCALE 1 : 4000

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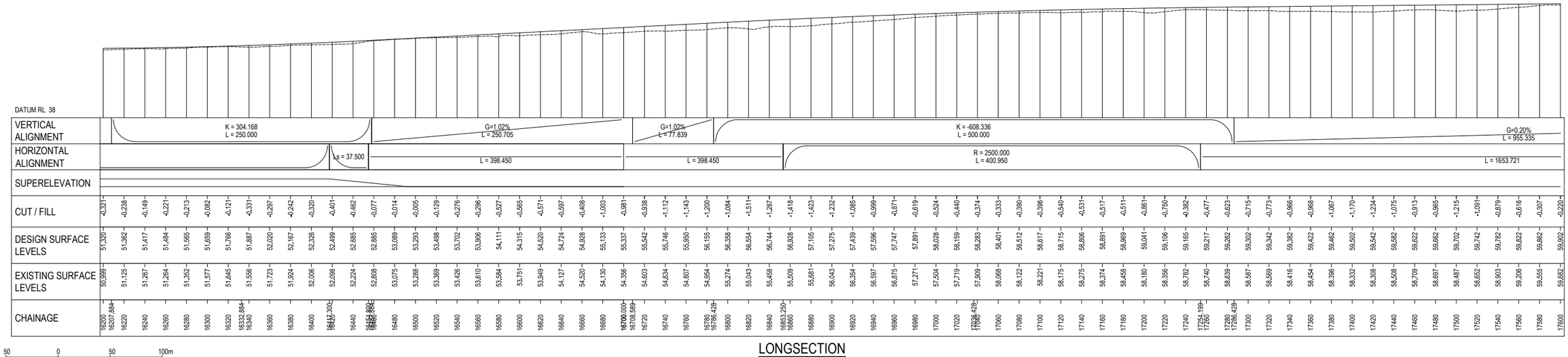

50 0 50 100m

SCALE 1:4000 (A3)

LONGSECTION

SCALE 1 : 4000H 1:20,000V

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Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

PLAN AND LONG SECTION
SHEET 1

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 4000 (A3)

Drawing No.: 310203848-03-001-C1500

Rev.: A

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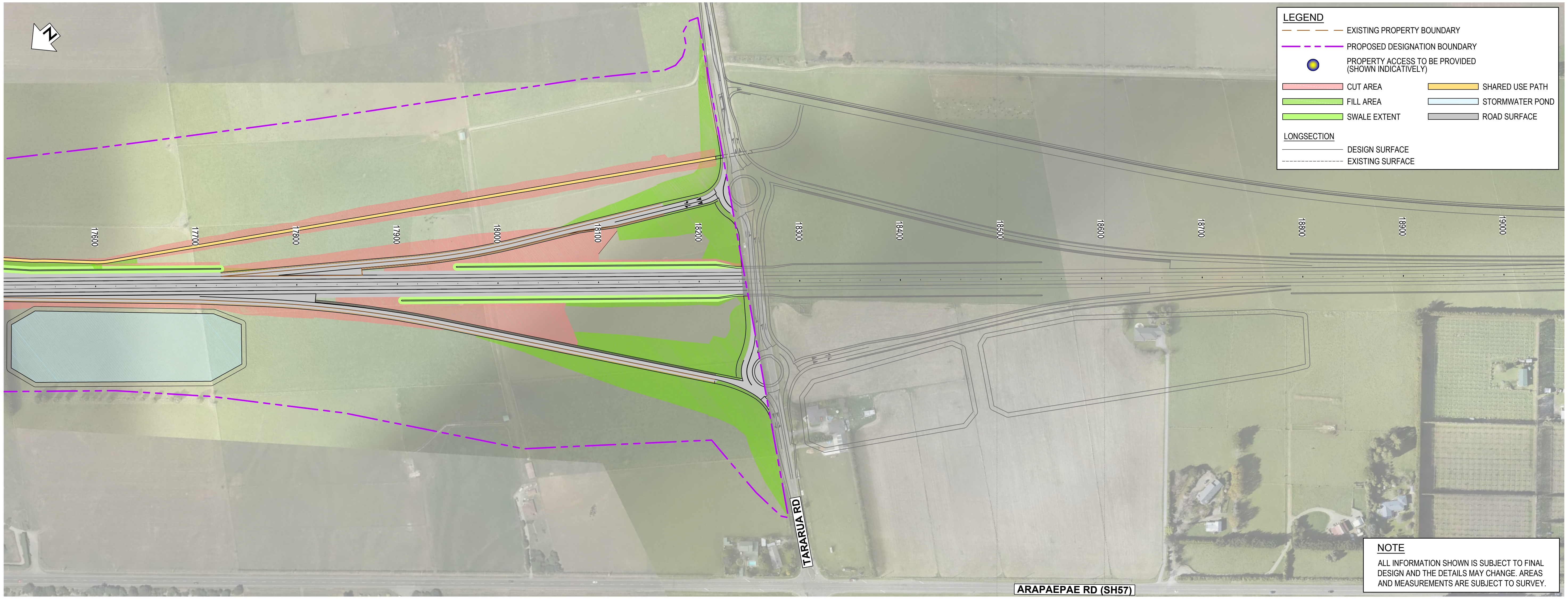

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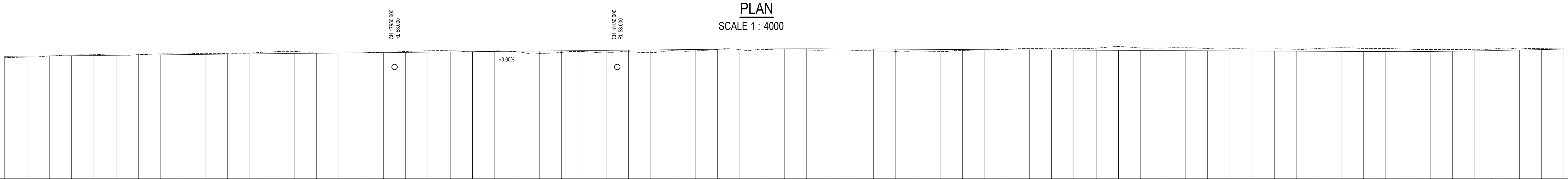
PLAN

SCALE 1 : 4000



DATUM RL 38

VERTICAL ALIGNMENT: G=0.20% L = 955.335 | G=0.20% L = 955.335 | K = -366.667 L = 110.000 | G=-0.10% L = 473.119 | K = 211.538 L = 110.000 | G=0.42% L = 87.276

HORIZONTAL ALIGNMENT: L = 1653.721 | L = 1653.721

SUPERELEVATION: -3.0% Left

CHAINAGE	CUT / FILL	DESIGN SURFACE LEVELS	EXISTING SURFACE LEVELS
17600	-0.220	59.902	59.682
17620	-0.176	59.942	59.766
17640	-0.011	59.982	59.971
17660	0.153	60.022	60.175
17680	0.150	60.062	60.212
17700	0.034	60.102	60.136
17720	0.078	60.142	60.220
17740	0.187	60.182	60.369
17760	0.098	60.222	60.320
17780	0.180	60.262	60.443
17800	0.085	60.302	60.388
17820	0.145	60.342	60.487
17840	0.332	60.382	60.714
17860	0.369	60.422	60.791
17880	0.225	60.462	60.687
17900	0.199	60.502	60.701
17920	0.134	60.542	60.676
17940	0.067	60.582	60.649
17960	0.163	60.622	60.786
17980	0.247	60.662	60.909
18000	0.201	60.702	60.903
18020	-0.048	60.742	60.694
18040	0.103	60.782	60.885
18060	-0.102	60.822	60.720
18080	-0.462	60.862	60.400
18100 / 18100.000	-0.290	60.902	60.613
18120	-0.188	60.942	60.755
18140	-0.456	60.982	60.527
18160	-0.290	61.022	60.732
18180	-0.471	61.062	60.592
18200	-0.173	61.102	60.929
18220	-0.256	61.142	60.886
18240 / 18241.763	-0.023	61.182	61.159
18260	-0.095	61.218	61.123
18280	-0.070	61.242	61.173
18296.763 / 18300	-0.205	61.256	61.051
18315.097 / 18320	-0.224	61.259	61.034
18340	-0.197	61.251	61.053
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18840 / 18846.036	0.549	60.758	61.307
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18879.882 / 18880	0.368	60.784	61.152
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18920	0.288	60.886	61.175
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50 0 50 100m

SCALE 1:4000 (A3)

LONGSECTION

SCALE 1 : 4000H 1:20,000V

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REV	REVISIONS	DRN	CHK	APP	DATE
A	ISSUED FOR SUBMISSION	SS	JP		

SURVEYED		
DESIGNED	Steve Muller	30.11.21
DRAWN	Steve Muller	30.11.21
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		

Stantec

Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

PLAN AND LONG SECTION
SHEET 2

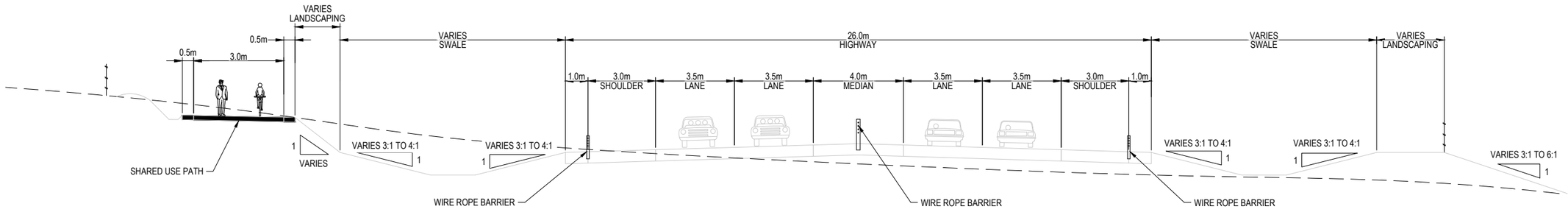
Status Stamp: **WORKING PLOT**

Date Stamp

Scales 1 : 4000 (A3)

Drawing No. 310203848-03-001-C1501

Rev. A



TYPICAL DETAIL - SHARED USE PATH AT GRADE

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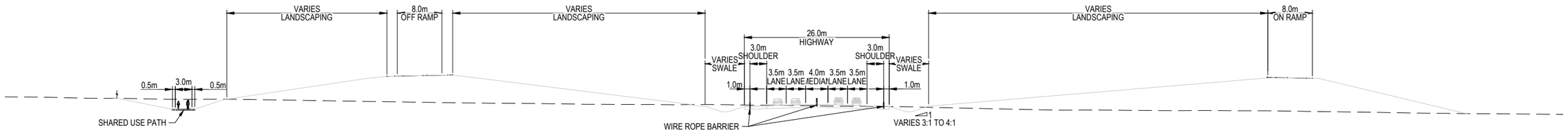

TYPICAL DETAIL - THROUGH INTERCHANGE RAMPS

SCALE 1 : 750 (A3)

NOTE

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DRAWN	Reid Hermansen	18.06.21
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		

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Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

TYPICAL SECTIONS

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: AS SHOWN

Drawing No.: 310203848-03-001-C2000

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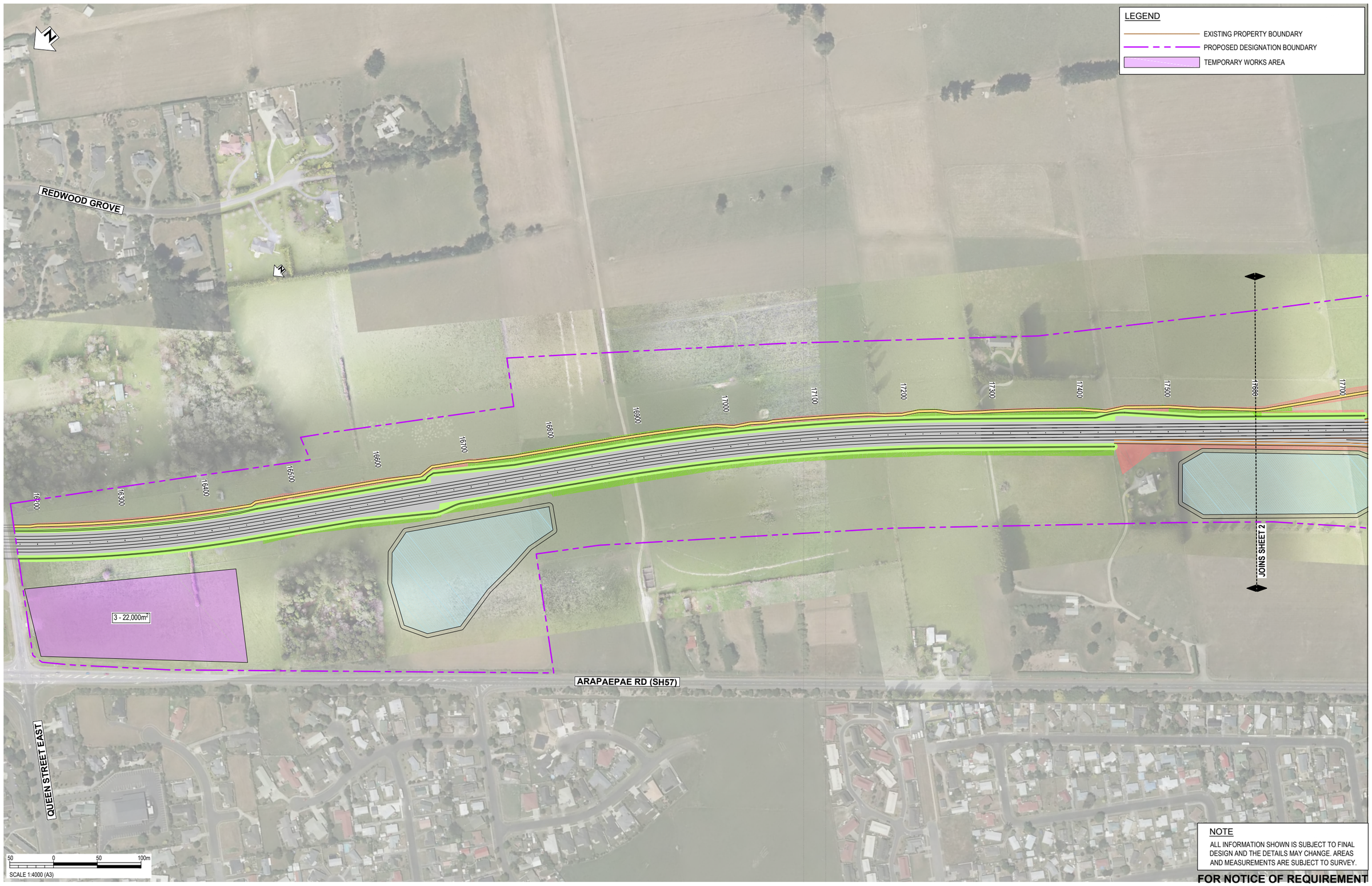

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DESIGNED	Jamie Povall	11.11.21
DRAWN	Steve Sutton	11.11.21
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		

Stantec

Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

ACCOMMODATION WORKS
SHEET 1

Status Stamp: **WORKING PLOT**

Date Stamp:

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Drawing No.: 310203848-03-001-C3000

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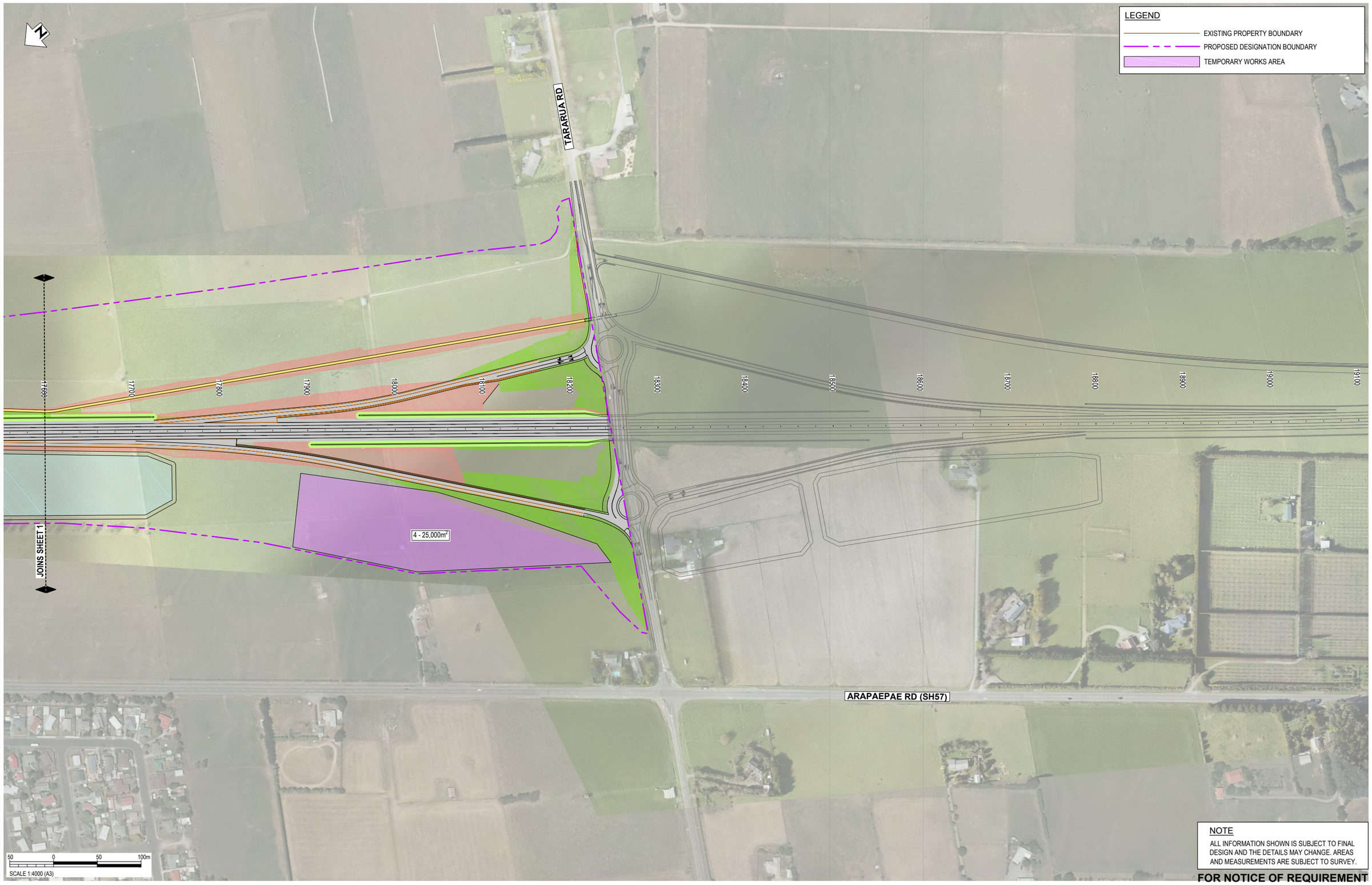

NOTE

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DRAWN	Steve Sutton	11.11.21
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DESIGN CHECK		
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		

Stantec

Client: WAKA KOTAHI NZ TRANSPORT AGENCY

ŌTAKI TO NORTH OF LEVIN PROJECT:
SECTION BETWEEN QUEEN STREET EAST AND TARARUA ROAD

ACCOMMODATION WORKS
SHEET 2

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: 1 : 4000 (A3)

Drawing No.: 310203848-03-001-C3001

Rev.: A

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Appendix II: Relevant Statutory Provisions

APPENDIX II – RELEVANT STATUTORY PROVISIONS

1. Introduction

The following statutory provisions have been identified by Waka Kotahi as having relevance to the consideration of the NoR for the section of the Ō2NL Project between Queen Street East and Tararua Road under section 171(1)(a) of the RMA. The assessment of the NoR in relation to these provisions is provided in Part H of this document.

2. National Policy Statements

National Policy Statement on Urban Development 2020

The National Policy Statement on Urban Development 2020 ("NPSUD") supersedes the National Policy Statement on Urban Development Capacity 2016. It came into effect on 20 August 2020.

Reference	Provision
Objective 1	New Zealand has well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future.
Objective 4	New Zealand's urban environments, including their amenity values, develop and change over time in response to the diverse and changing needs of people, communities, and future generations.
Objective 5	Planning decisions relating to urban environments, and FDSs, take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi)
Objective 6	Local authority decisions on urban development that affect urban environments are: a) integrated with infrastructure planning and funding decisions; b) and strategic over the medium term and long term; c) and responsive, particularly in relation to proposals that would supply significant development capacity.
Policy 1	Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum: a) have or enable a variety of homes that: (i) meet the needs, in terms of type, price, and location, of different households; and (ii) enable Māori to express their cultural traditions and norms; and b) have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; and c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and d) support, and limit as much as possible adverse impacts on, the competitive operation of land and development markets; and e) support reductions in greenhouse gas emissions; and f) are resilient to the likely current and future effects of climate change.
Policy 6	When making planning decisions that affect urban environments, decision-makers have particular regard to the following matters: a) the planned urban built form anticipated by those RMA planning documents that have given effect to this National Policy Statement b) that the planned urban built form in those RMA planning documents may involve significant changes to an area, and those changes: (i) may detract from amenity values appreciated by some people but improve amenity values appreciated by other people, communities, and future generations, including by providing increased and varied housing densities and types; and (ii) are not, of themselves, an adverse effect

Reference	Provision
	c) the benefits of urban development that are consistent with well-functioning urban environments (as described in Policy 1) d) any relevant contribution that will be made to meeting the requirements of this National Policy Statement to provide or realise development capacity e) the likely current and future effects of climate change.
Policy 9	Local authorities, in taking account of the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) in relation to urban environments, must: a) involve hapū and iwi in the preparation of RMA planning documents and any FDSs by undertaking effective consultation that is early, meaningful and, as far as practicable, in accordance with tikanga Māori; and b) when preparing RMA planning documents and FDSs, take into account the values and aspirations of hapū and iwi for urban development; and c) provide opportunities in appropriate circumstances for Māori involvement in decision-making on resource consents, designations, heritage orders, and water conservation orders, including in relation to sites of significance to Māori and issues of cultural significance; and d) operate in a way that is consistent with iwi participation legislation.

3. Regional Policy Statement – Horizons One Plan (Part 1)

The Horizons One Plan was made operative on 19 December 2014. The Regional Policy Statement Provisions are included in Part 1.

Chapter 2 – Te Ao Māori

Reference	Provision
Objective 2-1: Resource Management	a) To have regard to the mauri of natural and physical resources to enable hapū and iwi to provide for their social, economic and cultural wellbeing. b) Kaitiakitanga must be given particular regard and the relationship of hapū and iwi with their ancestral lands, water, sites, wāhi tapu and other taonga (including wāhi tūpuna) must be recognised and provided for through resource management processes.
Policy 2-2: Wāhi tapu, wāhi tupuna and other sites of significance	a) Wāhi tapu, wāhi tūpuna and other sites of significance to Māori identified: i. in the Regional Coastal Plan and district plans, ii. as historic reserves under the Reserves Act 1977, iii. as Māori reserves under the Te Ture Whenua Māori Act 1993, iv. as sites recorded in the New Zealand Archaeological Association's Site Recording Scheme, and v. as registered sites under the [Heritage New Zealand Pouhere Taonga Act 2014] must be protected from inappropriate subdivision, use or development that would cause adverse effects on the qualities and features which contribute to the values of these sites. b) The Regional Council must facilitate hapū and iwi recording the locations of wāhi tapu, wāhi tūpuna and other sites of significance to Māori in an appropriate publicly-available database. c) Potential damage or disturbance (including that caused by inappropriate subdivision, use or development) to wāhi tapu, wāhi tūpuna and other sites of significance to Māori not identified (for confidentiality and sensitivity reasons) by hapū or iwi under (a), above, must be minimised by the Regional Council facilitating the compilation of databases by hapū and iwi to record locations which need to remain confidential. d) The Regional Council must ensure that resource users and contractors have clear procedures in the event wāhi tapu or wāhi tūpuna are discovered.
Policy 2-4: Other resource management issues	The specific issues listed in 2.2 which were raised by hapū and iwi must be addressed in the manner set out in Table 2.1 below. Table 2.1 highlights issues of significance to the Region's hapū and iwi, provides explanations in the context of Māori belief and demonstrates how the Regional Council must address these matters. The issues and explanations do not in any way represent a complete picture of hapū and iwi concerns, but

Reference	Provision
	they offer possible explanations as to the depth of feeling and connection hapū and iwi have with the Region's natural resources. **Table 2.1 Resource management issues of significance to hapū and iwi.** [set out below – as relevant to the NoR]

Table 2.1 Resource management issues of significance to hapū and iwi

Resource issue of significance to hapū and iwi	Resource issue in the context of tikanga Māori	Relevant part of One Plan where issue is addressed
a) Management of water quality and quantity throughout the Region does not provide for the special qualities significant to Māori.	**Mauri** Wai Māori (pure water) is essential to hapū and iwi in the Region to ensure activities conducted for cultural purposes, such as spiritual cleansing, baptismal rituals and food gathering, are achievable. Mauri acts as a balancing agent to ensure the life-supporting qualities within the water are maintained. Human activities, application of impure agents, loss of water capacity, and contaminants all affect the ability of the mauri to perform its role effectively, therefore resulting in a standard of water not suitable for hapū and iwi to perform their relevant tikanga Māori or cultural activities associated with its use.	Surface water quality Chapter 2 - Te Ao Māori Objective 2-1 Policy 2-3 Chapter 2 Methods Chapter 5 - Water Objective 5-1 Policy 5-1 Chapter 5 Methods Rules, Chapter 14 -Discharges to Land and Water
b) Hazardous substances and nitrate run-off need to be better managed to avoid contaminants entering water.		Surface water quality Chapter 5 - Water Objective 5-2 Policy 5-8 Chapter 5 Methods Rules, Chapter 14 -Discharges to Land and Water
c) Lakes and streams (for example, Punahau/Waipunahau (Lake Horowhenua and Hokio Stream)) have suffered degradation which continues and are considered culturally unclean.		Surface water quality Chapter 5 - Water Objectives 5-1 and 5-2, Policies 5-1 to 5-5 and 5-8 to 5-10 Chapter 5 Methods Rules, Chapter 14 -Discharges to Land and Water
d) Access to and availability of clean water to exercise cultural activities such as food gathering and baptismal rituals have diminished.		Surface water quality Chapter 5 - Water Objective 5-2 Policies 5-2 to 5-11 Chapter 5 Methods
i) More riparian retirement and planting is needed to protect river banks from erosion. Several iwi believe harakeke (flax) would provide the most desirable outcome.	**Manaaki whenua (nurturing the land)** Hapū and iwi would like to see more measures put in place to plant river banks throughout the Region to avoid bank erosion and silt build-up in rivers. Harakeke (common New Zealand flax) would be the ideal choice. Land management plans give hapū* and iwi* more certainty that	Surface water quality Chapter 5 - Water Objective 5-2 Policy 5-8 Rules, Chapter 14 -Discharges to Land and Water and Water Quality Standards in Schedule D Land use management
j) Land management plans need to be encouraged to ensure consistent land management practices Region-wide.		

Resource issue of significance to hapū and iwi	Resource issue in the context of tikanga Māori	Relevant part of One Plan where issue is addressed
k) Adverse effects of land use continue to have a detrimental effect on traditional food gathering areas, native habitats and ecosystems.	landowners have an holistic land use management approach. Traditional food gathering sites and associated native habitats and ecosystems are valued very highly by Māori.	Chapter 4 - Land Objective 4-1 Policy 4-1 Chapter 4 Methods Rules, Chapter 13 – Land Use Activities and Indigenous Biological Diversity
l) The removal, destruction or alteration of wāhi tapu and wāhi tūpuna by inappropriate activities continues to have a detrimental effect on those sites and upon hapū and iwi.	**Wāhi tapu and wāhi tūpuna** Hapū and iwi view wāhi tapu and wāhi tūpuna as western cultures view cemeteries and churches - as locations that are a significant part of history which require protection and preservation. Wāhi tapu are sites that remain tapu (sacred), given the nature of their location and purpose. Ancient urupā (burial sites) are prominent throughout the Region and their locations more often than not remain the intellectual property of hapū or iwi members charged with keeping them safe from harm.	Land use management Chapter 4 - Land Objective 4-1 Policy 4-1 Chapter 4 Method Rules, Chapter 14 -Discharges to Land and Water Chapter 6 – Indigenous biological diversity, landscape and historic heritage Objective 6-3 Policies 6-11 and 6-12 Method 6-10 Rules and conditions protecting wāhi tapu throughout the Plan.
m) The transfer of indigenous plants from rohe to rohe is considered culturally unnatural.	**Tapu (sacred)** The transfer of indigenous plants from one rohe to another can result in the cross-pollination of plants native to a particular rohe, affecting elements of tapu. The act of artificially cross-pollinating plants including trees or removing and planting them away from their points of origin is not common practice to hapū and iwi. Ideally they would like the integrity of each rohe preserved in its natural state. Hapū and iwi are advocating for assistance via policy and funding to protect the integrity of indigenous plants and animals from human activity and pest plants and pest animals.	Chapter 6 - Indigenous biological diversity, landscape and historic heritage Objective 6-1 Policies 6-1 to 6-5 Chapter 6 Methods Rules, Chapter 13 - Land Use Activities and Indigenous Biological Diversity
n) Indigenous plants and animals continue to be under increased threat by human and pest activity.		Indigenous biological diversity Chapter 6 - Indigenous biological diversity, landscape and historic heritage Objective 6-1 Policies 6-1 to 6-5 Chapter 6 Methods Rules, Chapter 13 - Land Use Activities and Indigenous Biological Diversity
p) Biodiversity research needs more funding.	**Tiro whakamua (a glance at the future)** Many Māori landowners are actively involved in restoring and preserving wetlands to maintain native habitats for future generations.	Threatened indigenous biological diversity Chapter 6 - Indigenous biological diversity, landscape and historic heritage Objective 6-1 Policies 6-1 to 6-4 Chapter 6 Methods Rules, Chapter 13 - Land Use Activities and Indigenous Biological Diversity

Chapter 3 – Infrastructure, Energy, Waste, Hazardous Substances and Contaminated Land

Reference	Provision
Objective 3-1: Infrastructure and other physical resources of regional or national importance	Have regard to the benefits of infrastructure and other physical resources of regional or national importance by recognising and providing for their establishment, operation, maintenance and upgrading.
Objective 3-3: The strategic integration of infrastructure with land use	Urban development occurs in a strategically planned manner which allows for the adequate and timely supply of land and associated infrastructure.
Policy 3-1: Benefits of infrastructure and other physical resources of regional or national importance	a) The Regional Council and Territorial Authorities must recognise the following infrastructure as being physical resources of regional or national importance: i. facilities for the generation of more than 1 MW of electricity and its supporting infrastructure where the electricity generated is supplied to the electricity distribution and transmission networks ii. the National Grid and electricity distribution and transmission networks defined as the system of transmission lines, subtransmission and distribution feeders (6.6kV and above) and all associated substations and other works to convey electricity iii. pipelines and gas facilities used for the transmission and distribution of natural and manufactured gas iv. the road and rail networks as mapped in the Regional Land Transport Strategy v. the Palmerston North and Wanganui airports vi the RNZAF airport at Ohakea vii. telecommunications and radiocommunications facilities viii. public or community sewage treatment plants and associated reticulation and disposal systems ix. public water supply intakes, treatment plants and distribution systems x. public or community drainage systems, including stormwater systems xi. the Port of Wanganui. b) The Regional Council and Territorial Authorities must recognise the following facilities and assets as being physical resources of regional or national importance: i. solid waste facilities including landfills, transfer stations and resource recovery facilities that deal with municipal waste ii. existing flood protection schemes iii. New Zealand Defence Force facilities. c) The Regional Council and Territorial Authorities must, in relation to the establishment, operation, maintenance, or upgrading of infrastructure and other physical resources of regional or national importance, listed in (a) and (b), have regard to the benefits derived from those activities. d) The Regional Council and Territorial Authorities must achieve as much consistency across local authority boundaries as is reasonably possible with respect to policy and plan provisions and decision-making for existing and future infrastructure.
Policy 3-3: Adverse effects of infrastructure and other physical resources of regional or national importance on	In managing any adverse environmental effects arising from the establishment, operation, maintenance and upgrading of infrastructure or other physical resources of regional or national importance, the Regional Council and Territorial Authorities must: a) recognise and provide for the operation, maintenance and upgrading of all such activities once they have been established, b) allow minor adverse effects arising from the establishment of new infrastructure and physical resources of regional or national importance, and c) avoid, remedy or mitigate more than minor adverse effects arising from the establishment of new infrastructure and other physical resources of regional or national importance, taking into account:

Reference	Provision
the environment	i. the need for the infrastructure or other physical resources of regional or national importance, ii. any functional, operational or technical constraints that require infrastructure or other physical resources of regional or national importance to be located or designed in the manner proposed, iii. whether there are any reasonably practicable alternative locations or designs, and iv. whether any more than minor adverse effects that cannot be adequately avoided, remedied or mitigated by services or works can be appropriately offset, including through the use of financial contributions.
Policy 3-4: The strategic integration of infrastructure with land use	Territorial Authorities must proactively develop and implement appropriate land use strategies to manage urban growth, and they should align their infrastructure asset management planning with those strategies, to ensure the efficient and effective provision of associated infrastructure.
Policy 3-7: Energy efficiency	a) The Regional Council and Territorial Authorities must have particular regard to the efficient end use of energy in consent decision-making processes for large users of energy. b) Territorial Authority decisions and controls on subdivision and housing, including layout of the site and layout of the lots in relation to other houses/subdivisions, must encourage energy-efficient house design and access to solar energy. c) Territorial Authority decisions and controls on subdivision and land use must ensure that sustainable transport options such as public transport, walking and cycling can be integrated into land use development.

Chapter 4 – Land

Reference	Provision
Objective 4-2: Regulating potential causes of accelerated erosion	Land is used in a manner that ensures: a) accelerated erosion and increased sedimentation in water bodies (with resultant adverse effects on people, buildings and infrastructure) caused by vegetation clearance, land disturbance, forestry, or cultivation are avoided as far as reasonably practicable, or otherwise remedied or mitigated, and b) sediment loads entering water bodies as a result of accelerated erosion are reduced to the extent required to be consistent with the water management objectives and policies for water quality set out in Chapter 5 of this Plan.
Policy 4-2: Regulation of land use activities	a) In order to achieve Objective 4-2 the Regional Council must regulate vegetation clearance, land disturbance, forestry and cultivation through rules in this Plan and decisions on resource consents, so as to minimise the risk of accelerated erosion, minimise discharges of sediment to water, and maintain the benefits of riparian vegetation for water bodies. b) Territorial Authorities may regulate, through rules in district plans and decisions on resource consents, the actual or potential effects of the use, development, or protection of land, in order to achieve Objective 4-2. However, Territorial Authorities must not have rules that are contradictory to the rules in this Plan that control the use of land. c) The Regional Council will generally allow small scale vegetation clearance, land disturbance, forestry and cultivation to be undertaken without the need for a resource consent if conditions are met. Vegetation clearance and land disturbance require a resource consent if they are undertaken adjacent to some water bodies (including certain wetlands) in Hill Country Erosion Management Areas or in coastal foredune areas. Any other large scale land disturbance will also require a resource consent.

Chapter 6 – Indigenous Biological Diversity, Landscape and Historic Heritage

Reference	Provision
Objective 6-1: Indigenous	Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna and maintain indigenous biological diversity, including enhancement where appropriate.

Reference	Provision
biological diversity	
Objective 6-3: Historic heritage	Protect historic heritage from activities that would significantly reduce heritage qualities.
Policy 6-2: Regulation of activities affecting indigenous biological diversity[61]	For the purpose of managing indigenous biological diversity in the Region: a) Habitats determined to be rare habitats and threatened habitats under Schedule F must be recognised as areas of significant indigenous vegetation or significant habitats of indigenous fauna. b) At-risk habitats that are assessed to be significant under Policy 13-5 must be recognised as significant indigenous vegetation or significant habitats of indigenous fauna. c) The Regional Council must protect rare habitats, threatened habitats and at-risk habitats identified in (a) and (b), and maintain and enhance other at-risk habitats by regulating activities through its regional plan and through decisions on resource consents. d) Potential adverse effects on any rare habitat, threatened habitat or at-risk habitat located within or adjacent to an area of forestry must be minimised. e) When regulating the activities described in (c) and (d), the Regional Council must, and when exercising functions and powers described in Policy 6-1, Territorial Authorities must: i. allow activities undertaken for the purpose of pest plant and pest animal control or habitat maintenance or enhancement, ii. consider indigenous biological diversity offsets in appropriate circumstances as defined in Policy 13-4, iii. allow the maintenance, operation and upgrade of existing structures, including infrastructure and other physical resources of regional or national importance as identified in Policy 3-1, and iv. not unreasonably restrict the existing use of production land where the effects of such land use on rare habitat, threatened habitat or at-risk habitat remain the same or similar in character, intensity and scale.

Chapter 7 – Air

Reference	Provision
Objective 7-1: Ambient Air quality	A standard of ambient air quality is maintained which is not detrimental to amenity values, human health, property or the life-supporting capacity of air and meets the national ambient air quality standards.
Policy 7-4: Incompatible land uses	Air quality problems arising from incompatible land uses establishing near each other must be avoided, remedied or mitigated primarily through district plans and Territorial Authority consent decisions which: a) prevent the future establishment of potentially incompatible land use activities near each other, or b) allow the establishment of potentially incompatible land use activities near each other provided no existing lawful activity, operated in a manner that adopts the best practicable option or which is otherwise environmentally sound, is restricted or compromised.

Chapter 9 – Natural Hazards

Reference	Provision
Objective 9-1: Effects of	The adverse effects of natural hazard events on people, property, infrastructure and the wellbeing of communities are avoided or mitigated.

[61] Regional Plan Policies 13-4 and 13-5 are relevant provisions to the extent that they are referenced in, and necessary for, Policy 6.2. These provisions are set out below.

Reference	Provision
natural hazard events	
Policy 9-3: New critical infrastructure	The placement of new critical infrastructure in an area likely to be inundated by a 0.5% AEP (1 in 200 year) flood event (including floodways mapped in Schedule J), or in an area likely to be adversely affected by another type of natural hazard, must be avoided, unless there is satisfactory evidence to show that the critical infrastructure: a) will not be adversely affected by floodwaters or another type of natural hazard, b) will not cause any adverse effect on the environment in the event of a flood or another type of natural hazard, c) is unlikely to cause a significant increase in the scale or intensity of natural hazard events, and d) cannot reasonably be located in an alternative location.

4. Regional Plan – Horizons One Plan (Part 2)

As set out above, the Horizons One Plan was made operative on 19 December 2014. Part 2 of the One Plan includes Regional Plan provisions.

Chapter 13 – Land Use Activities and Indigenous Biological Diversity

Reference	Provision
Objective 13-1: Accelerated erosion – regulation of vegetation clearance, land disturbance, forestry and cultivation	The regulation of vegetation clearance, land disturbance, forestry and cultivation in a manner that ensures: a) accelerated erosion and any associated damage to people, buildings and infrastructure and other physical resources of regional or national importance are avoided as far as reasonably practicable or otherwise remedied or mitigated, and b) increased sedimentation in water bodies as a result of human activity is avoided as far as reasonably practicable, or otherwise mitigated.
Objective 13-2: Regulation of activities affecting indigenous biological diversity	The regulation of resource use activities to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna or to maintain indigenous biological diversity, including enhancement where appropriate.
Policy 13-4: Consent decision-making for activities in rare habitats, threatened habitats and at-risk habitats	a) For activities regulated under Rule 13-8 and 13-9, the Regional Council must make decisions on consent applications and set consent conditions on a case-by-case basis: i. For all activities, having regard to: a) the Regional Policy Statement, particularly Objective 6-1 and Policy 6-2, b) a rare habitat or threatened habitat is an area of significant indigenous vegetation or a significant habitat of indigenous fauna, c) the significance of the area of habitat, in terms of its representativeness, rarity and distinctiveness, and ecological context, as assessed under Policy 13-5, d) the potential adverse effects of the proposed activity on significance, e) for activities regulated under ss13, 14 and 15 RMA, the matters set out in Policy 13-2(k) and relevant objectives and policies in Chapters 5, 14, 16 and 17, and f) for activities involving a discharge, the matters in Policy 14-9. ii. For electricity transmission and renewable energy generation activities, providing for any national, regional or local benefits arising from the proposed activity. b) Consent must generally not be granted for resource use activities in a rare habitat, threatened habitat or at-risk habitat assessed to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna under Policy 13-5, unless:

Reference	Provision
	i. any more than minor adverse effects on that habitat's representativeness, rarity and distinctiveness, or ecological context assessed under Policy 13-5 are avoided. ii. where any more than minor adverse effects cannot reasonably be avoided, they are remedied or mitigated at the point where the adverse effect occurs. iii. where any more than minor adverse effects cannot reasonably be avoided, remedied or mitigated in accordance with (b)(i) and (ii), they are offset to result in a net indigenous biological diversity gain. c) Consent may be granted for resource use activities in an at-risk habitat assessed not to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna under Policy 13-5 when: i. there will be no significant adverse effects on that habitat's representativeness, rarity and distinctiveness, or ecological context as assessed in accordance with Policy 13-5, or ii. any significant adverse effects are avoided. iii. where any significant adverse effects cannot reasonably be avoided, they are remedied or mitigated at the point where the adverse effect occurs. iv. where significant adverse effects cannot reasonably be avoided, remedied or mitigated in accordance with (c)(ii) and (iii), they are offset to result in a net indigenous biological diversity gain. d) An offset assessed in accordance with b(iii) or (c)(iv), must: i. provide for a net indigenous biological diversity gain within the same habitat type, or where that habitat is not an area of significant indigenous vegetation or a significant habitat of indigenous fauna, provide for that gain in a rare habitat or threatened habitat type, and ii. reasonably demonstrate that a net indigenous biological diversity gain has been achieved using methodology that is appropriate and commensurate to the scale and intensity of the residual adverse effect, and iii. generally be in the same ecologically relevant locality as the affected habitat, and iv. not be allowed where inappropriate for the ecosystem or habitat type by reason of its rarity, vulnerability or irreplaceability, and v. have a significant likelihood of being achieved and maintained in the long term and preferably in perpetuity, and vi. achieve conservation outcomes above and beyond that which would have been achieved if the offset had not taken place.
Policy 13-5: Criteria for assessing the significance of, and the effects of activities on, an area of habitat	a) Rare habitats are areas of significant indigenous vegetation or significant habitats of indigenous fauna under criterion (ii)(e) below. Threatened habitats are areas of significant indigenous vegetation or significant habitats of indigenous fauna under criterion below. An area of rare habitat or threatened habitat may also be an area of significant indigenous vegetation or significant habitat of indigenous fauna under one or more of the other criteria below. An at-risk habitat may be recognised as being an area of significant indigenous vegetation or a significant habitat of indigenous fauna if one or more of the following criteria are met: i. in terms of representativeness, that habitat: a) comprises indigenous habitat type that is under-represented (20% or less of known or likely former cover), or b) is an area of indigenous vegetation that is typical of the habitat type in terms of species composition, structure and diversity, or that is large relative to other areas of the same habitat type in the Ecological District or Ecological Region, or has functioning ecosystem processes. or ii. in terms of rarity and distinctiveness, that habitat supports an indigenous species or community that: a) is classified as threatened (as determined by the New Zealand Threat Classification System and Lists), or b) is distinctive to the Region, or c) is at a natural distributional limit, or d) has a naturally disjunct distribution that defines a floristic gap, or e) was originally (ie., prehuman) uncommon within New Zealand, and supports an indigenous species or community of indigenous species. or iii. in terms of ecological context, that habitat provides: a) connectivity (physical or process connections) between two or more areas of indigenous habitat, or b) an ecological buffer (provides protection) to an adjacent area of indigenous habitat (terrestrial or aquatic) that is ecologically significant, or

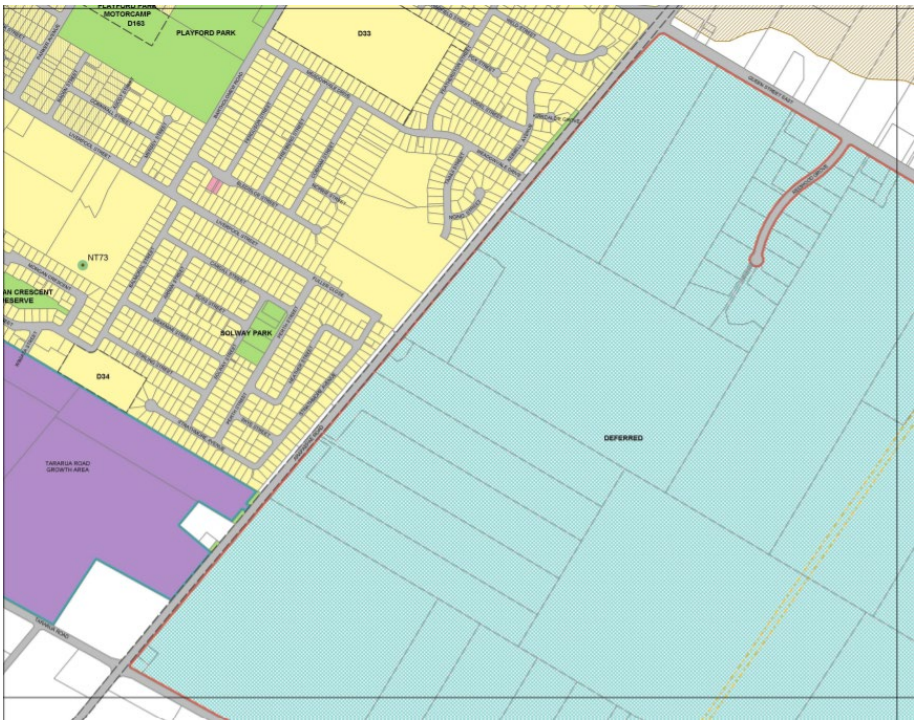
Reference	Provision
	c) part of an indigenous ecological sequence or connectivity between different habitat types across a gradient (eg., altitudinal or hydrological), or d) important breeding areas, seasonal food sources, or an important component of a migration path for indigenous species, or e) habitat for indigenous species that are dependent on large and contiguous habitats. b) The potential adverse effects of an activity on a rare habitat, threatened habitat or at-risk habitat must be determined by the degree to which the proposed activity will diminish any of the above characteristics of the habitat that make it significant, while also having regard to any additional ecological values and to the ecological sustainability of that habitat.

5. Horowhenua District Plan

The Horowhenua District Plan ("District Plan") was made operative in June 2015. The operative District Plan includes operative Plan Variations 1 – 3 and Plan Changes 1 and 2.

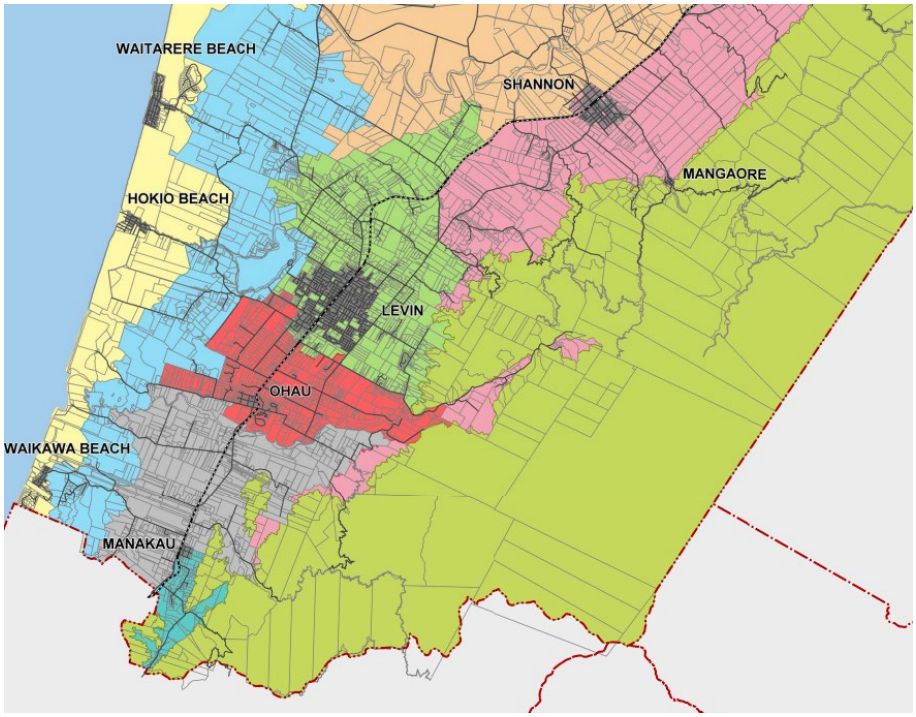
The following excerpt of Planning Map 30 confirms that the proposed designation traverses land that is zoned 'Greenbelt Residential Deferred'. This Planning Map does not include any other notations.

Operative Horowhenua District Plan: Excerpt of Planning Map 30



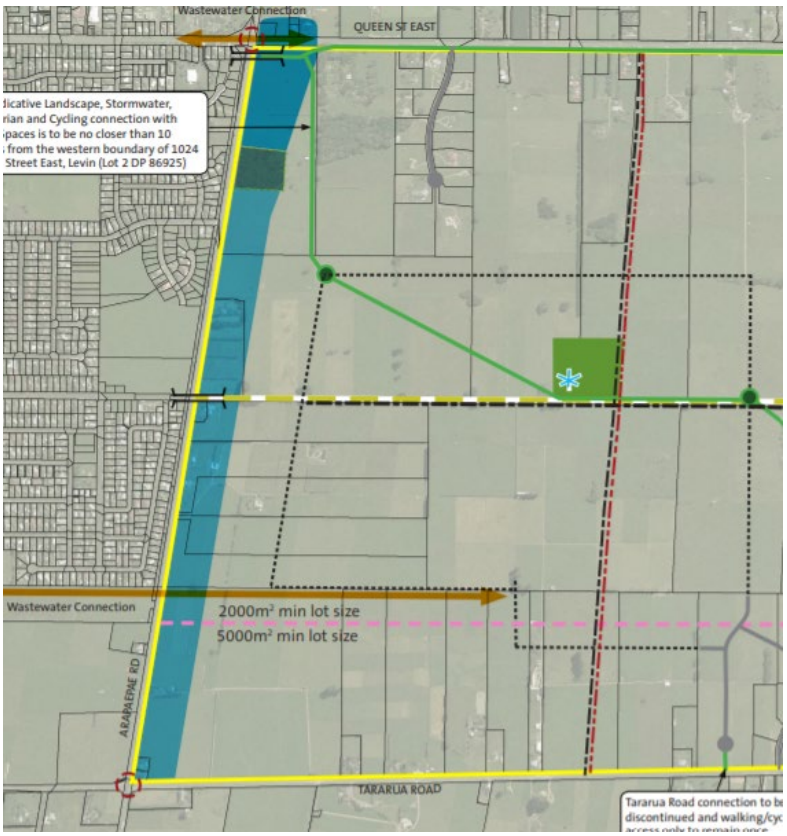
The proposed designation is also within the area identified as the 'Levin-Koputaroa Domain' as shown in green on Planning Map 39.

Operative Horowhenua District Plan: Excerpt of Planning Map 39 (Landscape Domains)



The District Plan also includes Structure Plan 13 'Gladstone Greenbelt Levin - Queen Street / Tararua Road'. Structure Plan 13 includes a notation for 'Transport Corridor (Future Upgrade)'.

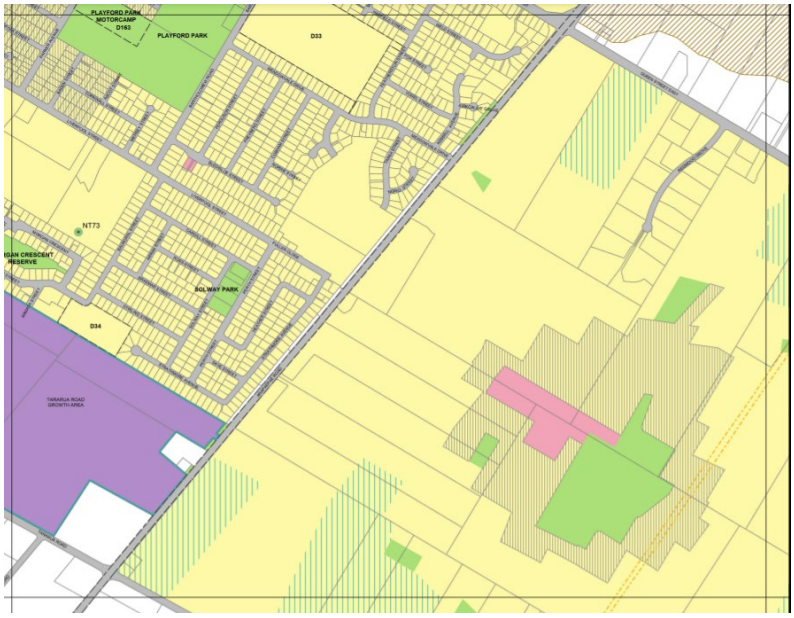
Operative Horowhenua District Plan: Excerpt of Structure Plan 13



Proposed Plan Change 4 was publicly notified in November 2020, submissions and further submissions have been made on the Proposed PC4 and a hearing was held in late 2021. A decision on these submissions has not been made.

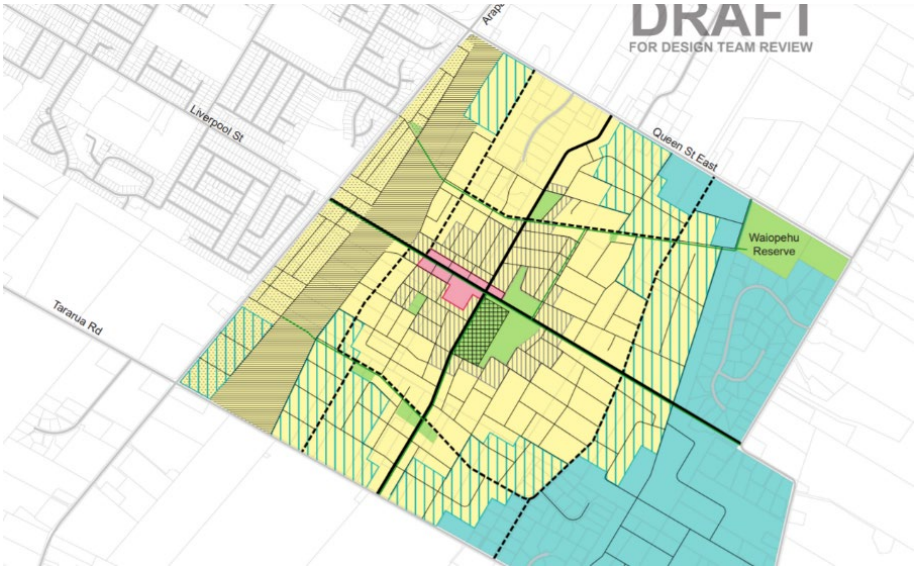
Proposed PC4 amends Planning Map 30 to apply the 'Residential Zone' over the majority of the area subject to the NoR. The proposed plan change also introduces a small area of 'Open Space Zone' and a 'Low Density Area' overlay.

Proposed Plan Change 4: Excerpt of Planning Map 30



Proposed PC4 also replaces Structure Plan 13 with a new Structure Plan that includes the Ō2NL Corridor.[62]

Proposed Plan Change 4: Excerpt of Structure Plan 13



[62] It is noted that the Ō2NL corridor shown on Structure Plan 13 (as notified), while similar, does not precisely reflect the area subject to this NoR.

Chapter 1 - Matters of Importance to Tangata Whenua

Reference	Provision
Objective 1.1.1 Active Participation	To provide Tangata Whenua with opportunities to actively participate in resource management processes (including decision making) on matters that have the potential to affect their cultural values and well-being.
Policy 1.1.3	Ensure that where relevant, the interests of Tangata Whenua are taken into account when considering the sustainable use and development of the land, waterways, coastal areas, resources and other taonga.
Policy 1.1.5	Recognise the authorised and mandated Iwi representatives for the purpose of resource management engagement.
Policy 1.1.7	Promote an understanding within Council and the Horowhenua community of the Treaty of Waitangi including the application of its principles to Horowhenua and the Tangata Whenua environmental management system (Kaitiakitanga).
Objective 1.2.1 Relationship of Tangata Whenua	To recognise and provide for the relationship of the Tangata Whenua of Horowhenua, and their culture and traditions (including mauri), with their ancestral lands, coastal areas, waterways, heritage landscapes and cultural sites, wāhi tapu, wāhi tūpuna and other taonga.
Policy 1.2.3	Recognise the spiritual and cultural values held by Māori and their traditional practices in the management of natural and physical resources.
Policy 1.2.5	Recognise the desire of Tangata Whenua to maintain and enhance their traditional relationship with the natural environment.
Objective 1.3.1 Sites of Cultural Significance	To protect areas and sites of cultural significance, wāhi tapu, wāhi tūpuna and other taonga from the adverse effects of inappropriate subdivision, use, and development of resources.
Policy 1.3.2	Identify areas and sites of cultural significance that contribute to an understanding and appreciation of the culture and history of Horowhenua District, the region and/or New Zealand.
Policy 1.3.3	Avoid or appropriately mitigate any adverse effects of activities that could destroy or damage the cultural values associated with an area or site of cultural significance identified in the District Plan.
Policy 1.3.5	Recognise and take into account any adverse effects which would degrade the cultural values of areas and sites of cultural significance, wāhi tapu, wāhi tūpuna and other taonga when assessing proposals for the subdivision, use and development of resources.

Chapter 2 – Rural Environment

Reference	Provision
Objective 2.1.1 Effects of Subdivision and Subsequent Use and Development	To ensure that subdivision and land development maintains and enhances the character and amenity values of the rural environment, and that the subsequent development resulting from subdivision such as on-site servicing and other infrastructure provision does not adversely affect the environment including the efficient and effective operation of existing transportation and infrastructure networks.
Policy 2.1.9	Avoid, remedy or mitigate adverse effects of subdivision, use and development of land on areas or features of landscape, biodiversity, historic heritage or cultural value.

Reference	Provision
Policy 2.1.11	Provide for the protection and restoration of natural habitats or wetland areas on sites to be subdivided through formal protection, rehabilitation and planting of appropriate species.
Policy 2.1.17	Ensure that subdivision and land development adjoining State Highways, other arterial, collector or local roads and the North Island Main Trunk Railway Line, avoid, remedy or mitigates any adverse effects on the safe and efficient operation of the roading and rail networks.
Policy 2.1.18	Avoid, remedy or mitigate adverse effects on the operation, maintenance and protection of existing or designated infrastructure of district significance from the subdivision and development of land.
Policy 2.1.19	Having regard to the Explanation and Principal Reasons in respect of the elements of rural character ensure that new activities locating in the rural area are of a nature, scale, intensity and location consistent with maintaining the character of the rural area and to be undertaken in a manner which avoids, remedies or mitigates adverse effects on rural character, including rural productive values.
Policy 2.1.20	Ensure that new activities locating in the rural area are of a nature, scale, intensity and location consistent with maintaining the character of the rural area and to be undertaken in a manner which avoids, remedies or mitigates adverse effects on rural character, including rural productive values and potential reverse sensitivity effects.
Levin-Koputaroa Domain Policies	
Policy LK.1	Manage the scale, intensity, size and design of subdivision and land development to ensure that it reflects and responds to the varied and undulating topography, productive capacity and open views that contribute to the landscape character and qualities of the LevinKoputaroa Domain.
Policy LK.2	Avoid, remedy or mitigate any adverse effects from earthworks as part of any subdivision on water bodies, land stability, the landscape and vegetation.
Policy LK.3	Ensure that existing taller vegetation that contributes to the landscape character of the site is retained and incorporated into the subdivision design to reduce the visual and landscape effects of the subdivision
Policy LK.4	Ensure that the natural habitats, particularly remnant indigenous forest areas and wetland areas, are identified and protected from inappropriate subdivision and development.
Objective 2.2.1 Fragmentation and Soil Resource	To safeguard the life supporting capacity of soils to enable a wide range of primary production activities and provide a resource for future generations while recognising the finite nature of the versatile land resource.
Policy 2.2.3	Avoid further fragmentation of land in the predominant areas of the District containing versatile land to protect this finite resource and to safeguard the life-supporting capacity of the soil from the cumulative effects of subdivision below the minimum lot standard.
Policy 2.2.4	Encourage the amalgamation of land parcels and adjustments of the boundaries of land parcels where this would enable a greater range of soil-based production activities.
Policy 2.2.5	Ensure that land use activities on versatile land are undertaken in a manner that safeguards the life-supporting capacity of the soil and recognises the finite nature of the land resource.
Policy 2.2.6	Subdivision, use and development of the versatile rural land resource should occur in a way which retains its potential to be used for a range of productive rural purposes and which maximises the likelihood of it actually being used for such purposes.
Policy 2.2.7	Fragmentation of the versatile rural land resource for purposes not directly related to maintaining or enhancing the primary productive potential of the rural land resource should be minimised and, where possible avoided.

Reference	Provision
Policy 2.2.9	Subdivision, use and development which has the potential to inhibit the efficient use and development of versatile land for primary production should minimised and, where possible avoided.
Objective 2.4.1 Land Use Activities – Nature, Character, Amenity Values and Servicing	To enable primary production activities and other rural based land uses to function efficiently and effectively in the Rural Zone, while avoiding, remedying or mitigating the adverse effects of activities, including reverse sensitivity effects caused by new activities on existing activities, in a way that maintains and enhances the character and amenity values of the rural environment.
Policy 2.4.3	Provide for the establishment and operation of new non-primary production activities and the ongoing operation of existing lawfully established activities which are compatible and/or associated with primary production activities in the rural environment provided they meet minimum environmental standards to avoid, remedy or mitigate any adverse effects.
Policy 2.4.4	Control and manage the establishment and operation of a range of other land use activities, including sensitive activities, in the rural environment to ensure their adverse effects on the environment (including reverse sensitivity effects on existing lawfully established activities) are avoided, remedied or mitigated.
Policy 2.4.13	Avoid, remedy or mitigate any adverse effects upon residential properties or road safety caused by lighting or glare from any source.
Policy 2.4.16	Ensure that land use activities, subdivision and development adjoining the National Grid, the State Highway network and the North Island Main Trunk Railway Line avoid, remedy or mitigate any adverse effects on the safe and efficient operation of the electricity transmission, roading and rail networks.
Policy 2.4.17	Maintain overall day and night time noise conditions at levels compatible with the amenity and activity present in the rural environment.
Policy 2.4.18	Ensure that effects of increased traffic or changed traffic type or change to road access do not compromise the safe and efficient operation of any road or adversely affect the safe and convenient movement of people on public roads.
Policy 2.4.19	Provide for a limited amount of signage located on the site to which the activity relates to minimise the effects on the rural environment.

Chapter 3 – Natural Features and Values

Reference	Provision
Objective 3.2.1 Indigenous Biological Diversity	To protect the areas of significant indigenous vegetation and significant habitats of indigenous fauna.
Policy 3.2.2	Manage the effects of subdivision, use and development to avoid, remedy or mitigate the adverse effects on areas of significant indigenous vegetation and significant habitats of indigenous fauna and the intrinsic values of ecosystems.
Policy 3.2.3	Encourage subdivision, land use and development that maintains and enhances indigenous biological diversity through the protection and enhancement of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Chapter 6 – Urban Environment

Chapter 6 is relevant to the proposed designation to the extent that Proposed PC4 applies the Residential Zone to the land subject to the NoR.

Reference	Provision
Objective 6.1.1 Overall Form, Activities and Servicing of Urban Areas	Sustainable management of the District's natural and physical resources used and developed for urban purposes; and Achievement of an appropriate mix of infrastructure services, and a range of urban activities to enable the District's settlements to function as vibrant attractive communities.
Policy 6.1.8	Manage subdivision and development within the identified urban growth areas by way of a Structure Plan in the District Plan to ensure a structured and integrated pattern of development, with the environmental qualities of the land provided for and sustainably managed.
Policy 6.1.9	Ensure that staging of development in the identified urban growth areas is efficient, consistent with and supported by adequate infrastructure and that development is otherwise deferred until the required upgrading of infrastructure has occurred.
Policy 6.1.15	Avoid, remedy or mitigate the adverse effects of new development and activities on the safe and efficient functioning of the existing and future roading networks.
Policy 6.1.18	Enable the establishment and operation of a wide range of activities within the urban settlements whilst avoiding, remedying, or mitigating any adverse environmental effects, and conflicts between incompatible urban activities and environments.
Objective 6.3.1 Residential Zone	To provide for a diversity of residential lifestyles and non-residential services and activities to meet the needs of the community while maintaining and enhancing the individual character and amenity values of the residential areas in each of the settlements of the District.
Policy 6.3.23	Recognise and provide for non-residential activities within the Residential Zone which are complementary in scale, nature and intensity to residential activities, in a way that avoids, remedies or mitigates actual and potential adverse effects on adjoining residential properties and the wider neighbourhood.
Policy 6.3.30	Maintain overall quiet daytime and night time noise conditions in the Residential Zone with few extraordinary loud noise events and minimal noise nuisance to residents and acknowledge that in the smaller rural and coastal villages seasonal rural activities can cause periodic machinery and stock noise louder than the usual background rural quiet conditions.

Chapter 7 – Greenbelt Residential Environment

Reference	Provision
Objective 7.3.1 Effects of Subdivision and Subsequent Land Use and Development	To ensure areas within the Greenbelt Residential Zone are developed in an efficient and sustainable development pattern responding to the natural and physical resources of the area.
Policy 7.3.2	Manage the form and pattern of development and subdivision within the Greenbelt Residential Zone on a comprehensive basis to ensure a structured and integrated pattern of development, which recognise the environmental qualities and physical resources of the land are fully identified and sustainably managed.
Policy 7.3.3	The form and pattern of development and subdivision seeks to:

Reference	Provision
	• Ensure the location, density and orientation of developable areas are compatible with the character and amenity values of the location; including implementing any design guide contained within a Schedule to this Plan; • In reticulated areas, ensure the coordinated and integrated provision of infrastructure; and in unreticulated areas, ensure either the sustainable on-site provision of water supply, wastewater disposal and stormwater management or, where appropriate, the provision of provision of private infrastructure; • Ensure a connected transport infrastructure for different modes of transport; • Provide a connected and accessible network of open space; • Protect and enhance natural features, areas of ecological value and sites of historic heritage importance; • Avoid or mitigate the risk of natural hazards through design or otherwise; • Minimise amenity conflicts with adjoining land uses; and • Provide opportunities for energy efficiency through road layout and lot orientation.
Policy 7.3.4	Manage subdivision and development to connect with the existing infrastructure and transportation network, according to the capacity limitations of that network and the potential requirements for upgrading its capacity.
Policy 7.3.5	Ensure that staging of development in the Greenbelt Residential Zone is efficient, consistent with and supported by adequate infrastructure and that development is otherwise deferred until the required upgrading of infrastructure has occurred.
Policy 7.3.6	Manage subdivision, use and development to avoid, remedy or mitigate the adverse effects of these activities on the efficient and safe operation of infrastructure and network utilities, including the National Grid.

Chapter 8 – Natural Hazards

Reference	Provision
Objective 8.1.1 Risks and Adverse Effects of Natural Hazards	The adverse effects of natural hazards on people, property, the environment and the wellbeing of communities are avoided or mitigated.
Policy 8.1.8	Avoid, where practicable, the siting of new critical infrastructure and services within areas of significant risk from natural hazard events.
Policy 8.1.9	Ensure that all structures and activities are constructed so as to minimise material damage from seismic events.
Objective 8.2.1 Worsening the Risks or Severity of Natural Hazards:	Land use and development that does not significantly worsen the risk of occurrence or the severity of natural hazards or compromise the effective functioning or integrity of natural hazard protection or mitigation works.
Policy 8.2.2	Ensure that the use and development of land does not accelerate or worsen any material damage to that land, or displacing to other land or structure resulting from erosion, subsidence, slippage, debris flow, or surface water flooding.
Policy 8.2.3	Avoid structures and activities that are likely to reduce the effectiveness of existing works, structures, natural landforms or other measures which serve to mitigate the effects of natural hazard events.

Chapter 10 – Land Transport

Reference	Provision
Objective 10.1.1 Maintaining and Developing Land Transport Network	Maintenance of land transport networks to efficiently and safely move people and goods through and within the District to meet the current and future needs of the District.
Policy 10.1.3	Ensure that all proposed new or extended roads are necessary to provide safe and convenient access for the community; and Ensure that they provide the most efficient form of transport to serve community needs in terms of the alternative forms of transport and routes available and the relative environmental costs and benefits of those alternatives.
Policy 10.1.4	Encourage the development of pedestrian paths and cycleways, as well as convenient and accessible cycle parking, to support the opportunity to use non-vehicular transportation modes throughout the District.
Policy 10.1.5	Maintain and upgrade the existing roads in the District and provide for new roads and related facilities where these are important to meet the current and future needs of the District.
Policy 10.1.6	Require all new public and private roads to be designed and constructed to meet consistent minimum standards relating to safety and efficiency of vehicle movement and particularly in respect of: • Road width and alignment which should be sufficient for two vehicle lanes except where traffic volumes are insufficient; • The formation and surface sealing of all roads, access ways, and private ways to standards appropriate to the volume of vehicle traffic expected to be carried; • Provision for necessary public utility facilities within roads; and • Safe design and construction of roads, road access points, including alignment, gradient, vehicle parking, manoeuvring, and turning requirements.
Policy 10.1.7	Ensure that the design and construction of all land transport routes and facilities incorporate measures to enhance the personal safety, security, and convenience of users including vehicle users, public passenger transport services, pedestrians, cyclists, children, and people with disabilities.
Policy 10.1.8	Require all public roads, private roads, accessways, cycle ways, and pedestrian footpaths in urban areas to be provided with overhead lighting.
Policy 10.1.13	To ensure that State Highways are a safe and efficient network.
Objective 10.2.1 Managing Effects of Transport Infrastructure	To provide for a land transport network that is safe, convenient and efficient, and which avoids, remedies or mitigates the adverse effects to maintain the health and safety of people and communities, and the amenity and character of the environment.
Policy 10.2.2	Require all extensions and upgrades to the land transport infrastructure, including roads, to avoid, remedy, or mitigate any adverse effects on the natural and physical resources, sensitive areas, and amenity and landscape values of the District.
Policy 10.2.3	Avoid adverse amenity impacts by ensuring that new roads are designed to, at least, minimum standards and visually complement the character of any surrounding area.
Policy 10.2.4	Adopt techniques to discourage high volume and heavy traffic use in areas where it would have adverse environmental effects on the local community.

Reference	Provision
Objective 10.3.1 Adverse Effects of Land Use Activities, Subdivision and Development on Land Transport Infrastructure	Protection of the safety and efficiency of the land transport network from the adverse effects of land use activities, subdivision and development.
Policy 10.3.11	Avoid, remedy, and mitigate any adverse effects generated by land use activities, subdivision and development adjoining the State Highways, District roads or the North Island Main Trunk Railway line where such adverse effects have the potential to reduce the safety and efficiency for road users (drivers, pedestrians and cyclists) and railway users. Adverse effects include glare, inappropriate lighting, smoke, or discharges onto the road or railway corridor.
Policy 10.3.12	Ensure that land use activities, subdivision and development adjoining State Highways, other arterial roads and the North Island Main Trunk Railway, avoid, remedy or mitigates any reverse sensitivity effects by protecting themselves from noise and vibration, particularly in bedrooms.

Chapter 12 – Utilities and Energy

Reference	Provision
Objective 12.1.1 Network Utilities	To protect and provide for the establishment, operation, maintenance and upgrading of network utilities, while avoiding, remedying or mitigating adverse effects on the environment.
Policy 12.1.2	Enable the establishment, operation, maintenance and upgrading of essential network utilities.
Policy 12.1.3	Avoid, remedy or mitigate the adverse environmental effects arising from the establishment, construction, operation, maintenance and upgrading of network utilities.
Policy 12.1.4	Provide additional protection for sensitive areas such as Outstanding Natural Features and Landscapes, domains of high landscape amenity, heritage and cultural sites and buildings, Notable Trees, coast, lakes, river and other waterways from the adverse environmental effects of network utilities.
Policy 12.1.5	Ensure the establishment, operation, maintenance and upgrading of network utilities does not compromise the health and safety of the community.
Policy 12.1.6	Consider the locational, technical and operational requirements of network utilities and the contribution they make to the functioning and well-being of the community in assessing their location, design and appearance.
Policy 12.1.8	Encourage the co-location or multiple use of network utilities where this is efficient and practicable in order to avoid, remedy or mitigate adverse effects on the environment.

Chapter 13 – Historic Heritage

Reference	Provision
Objective 13.2.1 Protection of	To protect significant historic heritage that reflects the culture and history of the Horowhenua District from inappropriate subdivision, use and development.

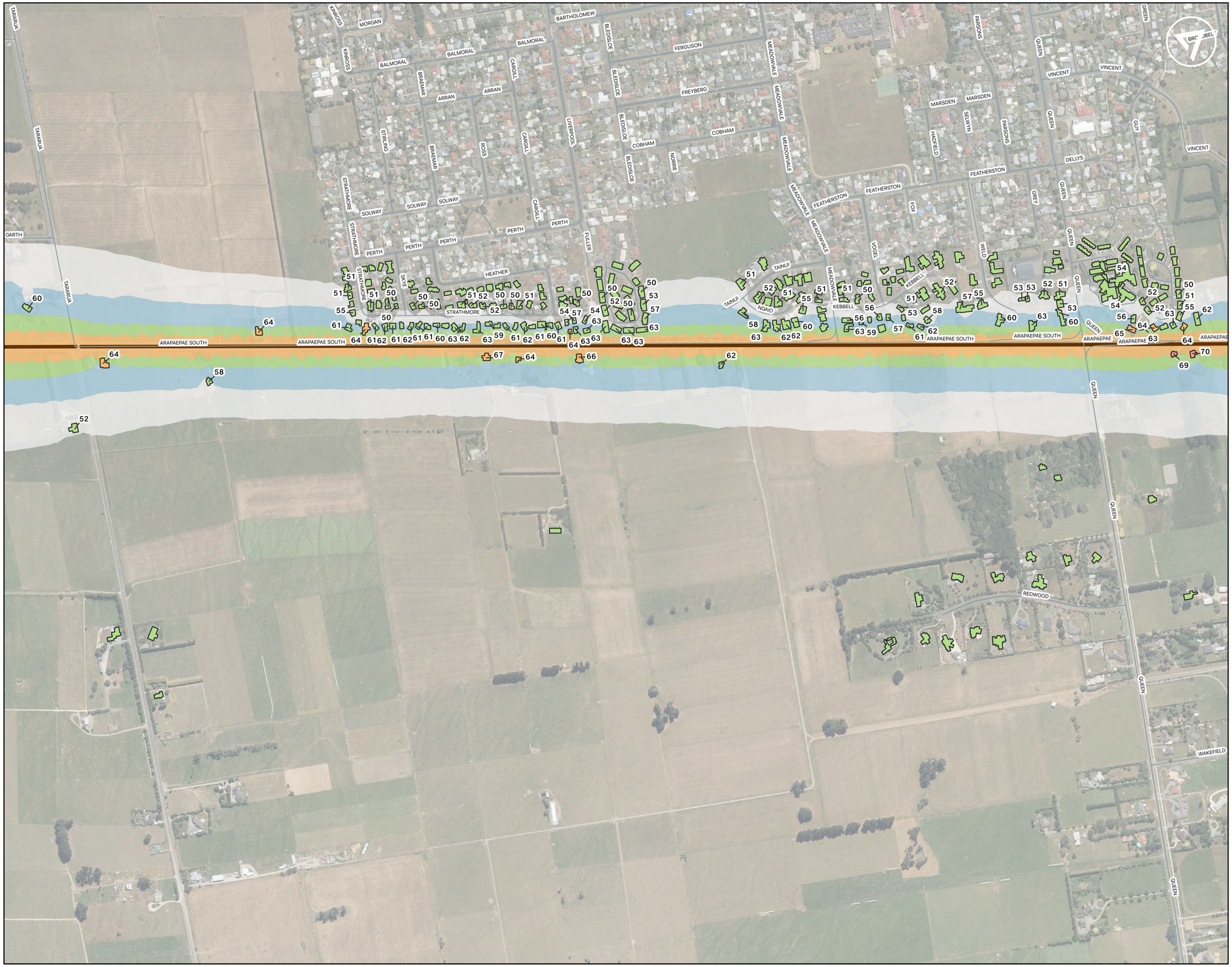
Reference	Provision
Historic Heritage	
Policy 13.2.5	Avoid or appropriately mitigate any adverse effects of activities that could destroy or diminish the heritage values associated with buildings and sites included in the Historic Heritage Schedule.

Proposed Plan Change 4 – 6A Tara-Ika Multi Zone Precinct

The following sets out relevant provisions included in the publicly notified version of Proposed PC4.

Reference	Provision
Objective 6A.1	To achieve an integrated and connected development that reflects cultural values and local identity, represents good urban design, is supported by a well connected roading network that supports a range of transport modes and has the facilities, infrastructure, and amenities necessary to contribute to the health, safety, and wellbeing of residents. This includes: - Encourage housing at a range of densities; - Provision for a local-scale commercial centre; - Access to quality public open space; - Safe and efficient walking and cycling options; - Well connected, safe and efficient roading network; - Design that reflects cultural values and local history and identity; - Protection of culturally significant sites; - Environmentally sensitive design.
Policy 6A.1.1	Subdivision, infrastructure and land development in Taraika must be consistent with Structure Plan 013. Subdivision and land development that deviates from the current or future implementation of the Structure Plan will only be considered where an alternative is proposed that will achieve the following: - The same or similar level of connectivity within Taraika; - The same or similar level of connectivity between the Taraika and the existing urban area of Levin; - Protection of opportunities for land adjacent to Taraika to be connected to Taraika in the future; - Public recreation space of an equivalent functionality as that shown on the Structure Plan and that is within walking distance of a similar number of properties as shown on the Structure Plan; - A streetscape that maintains an appropriate expression of street hierarchy and consistency of treatment along any arterial or collector street;
Policy 6A.1.2	Subdivision and land development in Taraika will acknowledge, protect, and celebrate cultural values, cultural history and local identity in the following ways: - Use of both Māori and non-Māori names for streets and reserves; - Protection of culturally significant sites; - Prioritise use of indigenous plants in street and reserve planting - Tikanga observed during site works.
Policy 6A.1.4	Provide for non-residential activities, such as community, recreational, educational and commercial activities, which support the day to day needs of the local community, while avoiding any such non-residential activities of a nature and scale that compete with the Levin Town Centre.
Objective 6A.2	Efficient delivery of infrastructure within Taraika will enable development while protecting environmental values and achieving a high level of residential amenity.
Policy 6A2.2	Require subdivision and development to be managed, designed and staged to align with the coordinated provision and upgrading of the infrastructure network (including roading network), public open space, streetscape and local service facilities within the Taraika, as illustrated on Structure Plan 013.
Policy 6A2.3	Avoid subdivision and development that compromises the ability to provide efficient and effective infrastructure networks for the wider Taraika.

Appendix III: Plans of Predicted Noise Levels



Legend

Noise levels, LAeq(24h)

- 50-55 dB
- 55-60 dB
- 60-65 dB
- 65-70 dB
- NZS 6806 Category A

Road surfaces

- EPA (30mm)
- EPA (50mm)
- SMA
- Chipseal

zones

- Residential
- Low Density Area
- Medium Density Area
- Open Space
- Greenbelt
- Commercial
- Industrial

Comments
Imagery and building outlines Copyright LINZ 2022

For consistency, 'New Road' criteria have been applied at all PPFs

Scale 1:7500

Project
Ōtaki to North of Levin Project: Section between Queen St East and Tararua Road

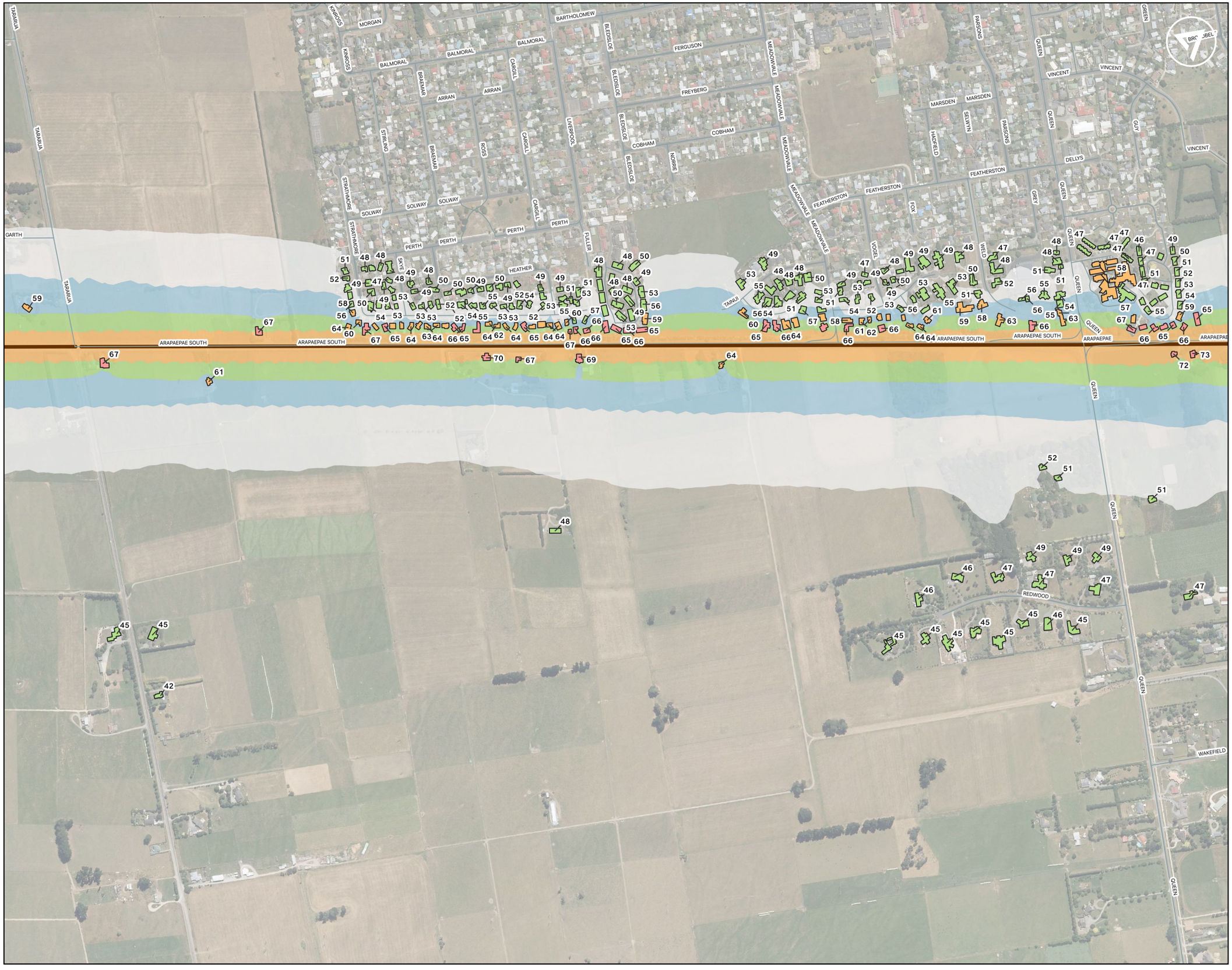
Client
Stantec (for Waka Kotahi)

Title
Predicted Noise Levels (2019)
Existing state highway network
Figure 1

Drawn
MS

Date
21 Feb 2022

ALTISSIMO CONSULTING



Legend

Noise levels, LAeq(24h)

- 50-55 dB
- 55-60 dB
- 60-65 dB
- 65-70 dB
- NZS 6806 Category A

Road surfaces

- EPA (30mm)
- EPA (50mm)
- SMA
- Chipseal

zones

- Residential
- Low Density Area
- Medium Density Area
- Open Space
- Greenbelt
- Commercial
- Industrial

Comments
Imagery and building outlines Copyright LINZ 2022

For consistency, 'New Road' criteria have been applied at all PPFs

Scale 1:7500

Project
Ōtaki to North of Levin Project: Section between Queen St East and Tararua Road

Client
Stantec (for Waka Kotahi)

Title
Predicted Noise Levels (2039)
Future road network without Ō2NL
Figure 2

Drawn
MS

Date
21 Feb 2022

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Legend

Noise levels, LAeq(24h)

- 50-55 dB
- 55-60 dB
- 60-65 dB
- 65-70 dB
- NZS 6806 Category A

Road surfaces

- EPA (30mm)
- EPA (50mm)
- SMA
- Chipseal

zones

- Residential
- Low Density Area
- Medium Density Area
- Open Space
- Greenbelt
- Commercial
- Industrial

Comments
Imagery and building outlines Copyright LINZ 2022
Proposed zoning from HDC

For consistency, 'New Road' criteria have been applied at all PPFs

Scale 1:7500

Project
Ōtaki to North of Levin Project: Section between Queen Street East and Tararua Road

Client
Stantec (for Waka Kotahi)

Title
Predicted Noise Levels (2039)
Do minimum (Standard EPA)
Figure 3

Drawn
MS

Date
21 Feb 2022

ALTISSIMO CONSULTING

Legend

Noise levels, LAeq(24h)

- 50-55 dB
- 55-60 dB
- 60-65 dB
- 65-70 dB
- NZS 6806 Category A

Road surfaces

- EPA (30mm)
- EPA (50mm)
- SMA
- Chipseal

zones

- Residential
- Low Density Area
- Medium Density Area
- Open Space
- Greenbelt
- Commercial
- Industrial

Comments
Imagery and building outlines
Copyright LINZ 2022
Proposed zoning from HDC

For consistency, 'New Road' criteria have been applied at all PPFs

Scale 1:7500

Project
Ōtaki to North of Levin Project: Section between Queen Street East and Tararua Road

Client
Stantec (for Waka Kotahi)

Title
Predicted Noise Levels (2039)
High performance road surface
Figure 4

Drawn
MS

Date
21 Feb 2022

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